IR-4
FIELD DATA BOOK

TITLE: NITRAPYRIN MAGNITUDE OF THE RESIDUE ON LETTUCE (HEAD & LEAF)

PR# A2659

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Leaf

SPONSOR
IR-4 Project Headquarters
500 College Road East, Suite 201 W
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(732) 932-9575, FAX# (609) 514-2612

STUDY DIRECTOR
Mr. Raymond Leonard
(732) 932-9575 extension 4617, FAX# (609) 514-2612
E-mail: Leonard@aesop.rutgers.edu

Field Research Director:	Keri Skiles	Reviewer:	Kathleen Feist
Study Title:	**Nitrapyrin Magnitude of Residue on Lettuce (Leaf)**		
Study Director:	**Ray Leonard**		
Test Site Location:	**Parlier, CA**		

Please fill out the following checklist and explain any deficiencies in an email or other electronic document.

Please note: Any problems which are likely to affect the study's integrity found during the course of this review must be brought to the attention of the Study Director immediately.

Field Trial Critical Events Log

Event	Date	Temperature Log Dates
Test substance receipt	1/2/2014	12/10/2013
Last test substance application	4/17/2014	4/17/2014
Sampling	5/19/2014	UTC: 5/19-6/6/2014
Sample Shipping	6/5/2014	TRT: 5/19-6/6/2014

Parts 1,2,3.	GLP	YES	NO	N/A	In Fac. File?
1.	Chain of Custody for Field Data Book completed	X			
2.	Codes for data changes included	X			
3.	SOPs referenced or present (Part 1, A)	X			
4.	GLP Compliance Statement signed by Field Research Director (Part 1, C)	X			
5.	Study personnel signatures complete (Part 2, A)	X			
6.	Qualifications summary (cvs, training records) (Part 2,B)	X			
7.	Notes and Communication Log completed (Part 3)	X			
8.	Notes with sufficient detail to reconstruct what was done	X			
9.	All in use pages signed and dated	X			
10.	All entries properly dated and initialed	X			
11.	Pages properly identified (Test Substance/Crop/Field ID No.)	X			

12.	All unused pages removed or lined out, initialed and dated	X			

Part 4.	Test Substance	YES	NO	N/A	In Fac. File?
1.	Chemical Receipt, Storage, and Disposition (Part 4, A)	X			
	a. Date received and/or placed in storage	X			
	b. Name on label	X			
	c. Batch/Lot number	X			
	d. Expiration date of test substance and source (mfg.)	X			
	e. Amount received	X			
	f. Type and condition of container	X			
	g. Chemical receipt (exact copy in raw data) or Certificate of Analysis	X			
2.	Chemical Use Log (completed/documented (Part 4, B)	X			
3.	Disposition of remaining compound / containers documented (Part 4, C)	X			
4.	Identification and Receipt of Spray Additives (Part 4, D)	X			
5	Chemical storage building temperature log (temperatures/temperature range - receipt to last application) (Part 4, E)	X			
6.	Balance calibration check (bracketing of weights for test substance) (Part 4, F)			X	

Part 5.	Trial Site	YES	NO	N/A	In Fac. File?
1.	Directions to trial site (map included) (Part 5, A)	X			
2.	Directions to test plot (map included) (Part 5, B)	X			
3.	UTC and TRT Plot layout (detailed, accurate and neatly drawn, with actual plot size and permanent reference noted, distance of UTC to TRT, prevailing wind direction, approx. slope of the plots) (Part 5, C)	X			
4.	Soil characterization (GLP soil analysis or SCS survey data) (Part 5, D)	X			
	a. % sand / silt / clay	X			
	b. % organic material or % organic carbon	X			
	c. pH	X			
5.	Pesticide/fertilizer history documented. (Part 5,E) Number of years? _1_	X			
6.	Test crop records (variety, species, source, lot no., age) (Part 5, F)	X			

7.	Row width / BED WIDTH	X			
8.	Plant spacing	X			
9.	Cultural practices (cultivation, etc.) adequately documented (Part 5, G)	X			
10.	Maintenance chemicals (fertilizers/pesticides) used documented (Part 5, H)	X			

Part 6.	Application	YES	NO	N/A	In Fac. File?
1.	Application equipment description (Part A); Diagram/photograph (Part B)	X			
2.	Application calibration accurate, verified, and according to protocol and SOP (Parts 6: C, D, E, F for each application, if applicable)	X			
	a. Calibration records (If "NO," contact Study Director immediately)	X			
	b. Rate calculations (If "NO," contact Study Director immediately)	X			
3.	Treatment Information (Part 6, G)	X			
	a. Incorporation, method, depth and time	X			
4.	Application description in sufficient detail (Part 6, H)	X			
	a. Stage of crop growth	X			
	b. Wind speed/direction	X			
	c. Air temperature	X			
	d. Sky (cloud cover)	X			
	e. Humidity	X			
	f. Pass times and actual rate calculations (Part 6, I) DIP TIMES	X			
5.	Post treatment records (date/amount of first rain and first irrigation after each application)(Part 6, J). Also any visible phytotoxicity noted (Part 6, J)	X			
6.	Equipment maintenance log (sprayers, hydrothermographs, etc.)(Part 6, K)	X			

Parts 7, 8	Sample Collection and Shipment	YES	NO	N/A	In Fac. File?
1.	General sampling information (harvest/sample dates, PHI) (Part 7, A)	X			
2.	Method of sampling (Part 7, A)	X			
3.	Processing sampling (if applicable)			X	
4.	Sample inventory (Part 7, B)	X			
5.	Interval from sampling to freezing (Notify Study Director immediately in the case of freezer failure and/or loss of sample integrity) (Part 7, B)	X			

6.	Crop Destruct: has a description been provided to adequately explain crop destruction or handling so that the crop is not consumed by human or animal.	X			
7.	Freezer temperature log (temperatures/temperature range - harvest to shipment) (Part 7, C)	X			
8.	Freezer contents log (do dates match sampling log? - check-in and check-out of samples) (Part 7, D)	X			
9.	Freezer maintenance log (Part 7, E)	X			
10.	Residue sample shipping information and date to carrier (Part 8, A)	X			
11.	Sample chain of custody form in raw data (Part 8, B)	X			
	a. Fed Ex receipt/ACDS bill of lading included/other	X			
12.	Confirmation of receipt by lab included	X			

Part 9.	Meteorological/Irrigation	YES	NO	N/A	In Fac. File?
1.	Field trial daily weather records (temp and rainfall from first application to harvest). Also, location of weather record collection and meteorological data (Part 9, A)	X			
2.	Field trial daily weather records (irrigation - amounts and/or schedule of irrigation events) (Part 9, A supplement)	X			
3.	Additional meteorological data / on-site observations / comments (Part 9B)	X			

Part 10.	Additional Information	YES	NO	N/A	In Fac. File?
1.	Original Protocol signed (Part 10, A)	X			
2.	Protocol amendments included (Part 10, A)	X			
3.	Deviations noted and Study Director Informed			X	

KF 7/29/14

Nitrapyrin/Lettuce (leaf)
A2659.14-CA01

Dear Ms. Skiles:

I have been contracted by the IR-4 Program Western Regional IR-4 Coordinator, Rebecca Sisco, to conduct field data book reviews from a quality control point of view. I have completed my review of the study listed below and have the following questions/ concerns that need to be addressed.

Please respond to the address (email preferred) listed below within **2 weeks** of receiving this email. I am authorized to make any additions and/or corrections to the original raw data based on information provided to me from you (FRD).

Please remember, r*esponses must have your initials and the date.*

If you have any questions, please contact me. Thank you for your assistance in addressing these issues.

Best regards,

Kathy Feist
1602 Greengate Drive
Fort Collins, CO 80626
Phone: (970) 226-0793
Email: kathleenfeist@gmail.com

Nirapyrin: Magnitude of Residue on Lettuce (A2659.14-CA01)

Part 5, Trial Site, page 7

1) With the FRD's permission, I will note that the **TRT 03** plot is **20'** wide. Please add. KS 7/21/14 ✓ added TRT 03 plot width = 20' KF 7/29/14

Part 5, page 8

2) With the FRD's permission, I will line out "TRT 01", preceding the word "Nitrapyrin", in the block representing the TRT 02 plot for this trial. Please leave this as is. This just shows were there are plots next to each other and TRT 01 is on that end of the field. KS 7/21/14 ✓ OK - not action required - KF 7/29/14

Part 6, Application, page 3

3) With the FRD's permission, I will add "**Regulator # 2**", with the equipment identifier. Please add. KS 7/21/14 ✓ added # 2 to equipment ID. KF 7/29/14

KF 7/29/14

Part 7, Sample Collection, pages 11 and 12

4) With the FRD's permission, I will change the **SOP** reference to **60-2.4**, to reflect the correction on page 10. Please leave as is. I followed the 2013 SOP as the 2014 SOP had not revised yet. KS 7/21/14 ✓ OK not action required. KF 7-29-14

SP KF 7.29.14

Part 8, Sample Shipping, page 1

5) There is no footnote to go with the encircled # 1. With the FRD's permission, I will add the footnote "spelling error". Please correct. KS 7/21/14

✓ added footnote as described. KF 7-29-14

6) ***If there are additional corrections you would like made that I have not pointed out in this review, please bring them to my attention and I will make those changes in the notebook.*** *Thank you!! KS 7/21/14*

Nirapyrin/Lettuce

A2659.14-CA01

Field Trial ID	TRT Area Length (Feet)	Row / Bed Width (Feet)	# of Rows or Beds	Treated Area (Sq.Ft.)	Total PassTime (Sec)	Volume of form. Used (mL)	Vol. of Carrier (mL)	Volume of Adjuvant (mL)	Total Mix. Vol. (mL)	Boom Discharge Rate (mL/sec)	Calc. Del. Rate (mL/A)	Calc. Del. Rate (gal/A)	form/ Acre (gal/A)	Conc. of Form (lb ai/gal)	Actual Rate (lb ai/A)	Protocol Rate (lb ai/A)	% Dev.
Calculations				B3*C3*D3					H3+G3+I3		((K3*F3)/ E3)*43560	L3/3785	(M3*G3)/J3		O3*N3		((P3-Q3)/ Q3)*100
Test	100	3.17	1	317	22.2	15.6	1230	0	1245.6	36	109820.7	29.0147	0.36338	4	1.454	1.5	-3
TRT02	80	5	4	1600	221.39	101.1	2899	0	3000.1	5	30136.71	7.96214	0.26832	1.85	0.496	0.5	-1
TRT03	80	5	4	1600	220.9	100.8	2899	0	2999.8	5.08	30551.13	8.07163	0.27122	1.85	0.502	0.5	0

① The GPA Rate was based on the actual area treated (320 ft²).
The test substance application rate was based on the full plot area of 1600 ft².
See below for GPA rate calculations:

TRT 02

$221.39\ sec \times 5\ ml/sec = 1106.95\ ml$ carrier applied to plot (320 ft²)

$$\frac{1106.95\ ml \times 43{,}560\ ft^2/A}{320\ ft^2} = \frac{150{,}683.57\ ml/Acre}{3785\ ml/Gal} = 39.81\ GPA$$

0.00735A

TRT 03

$220.9\ sec \times 5.08\ ml/sec = 1122.17\ ml$ carrier applied to plot

$$\frac{1122.17\ ml \times 43{,}560\ ft^2/A}{320\ ft^2} = \frac{152{,}755.39\ ml/Acre}{3785\ ml/Gal} = 40.36\ GPA$$

FIELD DATA BOOK REVISIONS FOR TRIAL YEAR 2014

Revisions have been made in response to suggestions made by Field Cooperators, Study Directors, Regional Field Coordinators, Quality Assurance professionals, and EPA Auditors. They are intended to prompt for additional information where needed, to reduce misunderstandings of the data prompts by the people who use this book, and to facilitate the transcription of the data into final reports.

1B	The statement that pH strips "are compliant only if an SOP is in place" has been removed because SOPs that mention the strips but have little information about their use and maintenance may be inadequate to make them GLP-compliant. It is acceptable to use non-GLP-compliant pH strips in IR-4 field trials.
4B	The prompt for INSTRUMENTS USED TO MEASURE TEST SUBSTANCE has been removed from this page and relocated to 6G.
4D	A check-off prompt has been added for adjuvants that do not have an available batch number or expiration date.
5C	Adjacent treated plots (and test substances used) shall be listed in a table beneath the plot plan for this trial, rather than included in the plot plan. In this way, the plot plan does not need alteration when there is a trial cancellation in one of the adjacent plots. The information that had been entered into the table for the cancelled trial is lined out, and information about the replacement trial (if any) is entered below in the same table.
5F	All data prompts are now in table format. Some prompts that had been near the top of the page have been moved towards the bottom. All of the same prompts are in the new table.
5H	If a facility or grower's list of all maintenance chemical applications is inserted here, the applications to the plots in this trial must be notated in some way to distinguish them from applications made to other areas of the farm or research facility. (*I.e.* data dumping is prohibited)
5I	Crop Destruction: Description of the post-trial crop destruction has been moved here from Part 7B.
6C	If this is a 3-discharge calibration run, are the averages (last column on the right) of the second and third runs within 5% of the first run? *(Check one)* YES_____ NO_____ (The sprayer must operate consistently [within 5%] during the 3 runs for the calibration to be valid.) [The last column on the right of the calibration table now prompts for output/second.]
6G	Prompts have been added for additional agitation time, for identification of measuring instruments with increments, and for indicating the order of mixing the spray mixture.
6H	The narrative summary of the application has been removed from this page to give more room for descriptions of poor crop vigor and equipment cleaning.
6I	The post-application rate confirmation has been removed from this page and has been replaced by the narrative summary of the application.
6J	Post-application rate confirmation is now on this page, with example calculations.
6K	Application equipment maintenance and repair log has been moved and replaced by phytotoxicity data and first rain or irrigation after application entries. Was There Any Visible Phytotoxicity Damage? If YES, then contact the Study Director. If a digital camera is available, it is preferable to take one or more photographs and send them in an email message to the Study Director. Also, provide a written description below. **If irrigation is required by the protocol to incorporate the test substance, or if the test substance is applied by irrigation, then that event should be recorded below** (first irrigation after application)**.**
6L	Revised table of options for differentiating multiple field trials conducted by the same person or by two people within 20 miles of each other. This table was developed after discussions between U.S. and Canadian regulators.
6M	Application equipment maintenance and repair log is now on this page.
7A1	Protocol requirement questions (*e.g.* minimum # plants collected) are now in table format.
7A1	Number and Location of Rows from Which Each Sample Was Collected *Examples: "6 middle rows" "All 3 rows" "1" (for single-row plot)*
7A2	Include a description of equipment, duration of procedure(s), temperatures, estimated moisture content, etc., as appropriate. (When the protocol requires that certain samples have specified moisture content, the estimated (or calculated) moisture content of the collected samples must be recorded.

GENERAL INSTRUCTIONS FOR THE COMPLETION OF THE IR-4 FIELD DATA BOOK

This book is designed for use in collecting data in the course of completing a field trial sponsored by the IR-4 Project that **must** be conducted in compliance with the EPA or OECD Good Laboratory Practice Standards. It has been extensively updated in recent years. **DO NOT USE PAGES FROM FIELD DATA BOOKS PRINTED IN PREVIOUS YEARS. All of the data pages in this book should have "Trial Year 2014" in the lower right corner.** (Inserts such as bills of lading do not need to have this phrase; field ID# and page# are sufficient.) This Field Data Book (**FDB**) is an authentic record of your work. The IR-4 FDB is divided into Parts, each containing the following information:

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

PART NO.	SUBJECT
PART 1	GOOD LABORATORY PRACTICE COMPLIANCE INFORMATION
PART 2	PERSONNEL LOG
PART 3	NOTES AND COMMUNICATION LOG
PART 4	TEST SUBSTANCE RECORDS (Receipt/storage/disposition records, test substance use log)
PART 5	TRIAL SITE INFORMATION (Maps, soil characterization information, crop/pesticide history, and test crop records)
PART 6*	APPLICATION RECORDS (General equipment information, equipment calibration records, delivery rate calibration/calculations, treatment information, and environment records during treatment)
PART 7	SAMPLE COLLECTION AND STORAGE (General sampling information, sample balance calibration, sample log, freezer temperature and inventory)
PART 8	RESIDUE SAMPLE SHIPPING (Residue sample shipping forms)
PART 9	WEATHER AND IRRIGATION RECORDS

PROTOCOL & PROTOCOL CHANGES (formerly Part 10)–This part may be kept in the back of the FDB, or moved to the front of the FDB (ahead of Part 1), or inserted between other FDB Parts.

*Part 6 is available in a version specific for airblast applications. If you intend to apply the test substance in this study via airblast and have not received the pages entitled "PART 6. APPLICATION RECORDS-AIRBLAST SPRAYER", then you should contact the Regional Field Coordinator, or print the pages from the IR-4 website: **http://ir4.rutgers.edu/Fooduse/Fieldbook/index.htm**

If the instructions below are followed, the IR-4 FDB can serve as both a scientific record and a legal document. Failure to comply is not necessarily a protocol deviation, but will result in time-consuming follow-up work by the Study Director, Regional Field Coordinator, QA Officer, and/or the Field Research Director.

1. One copy of each form (template) has been provided. However, some forms require completion of that form on various dates (e.g. Treatment Information Form must be completed for each application date). Prior to entering data, make appropriate number of photocopies of the template(s). Insert the Field ID on each page. If additional templates are needed, contact the Regional Field Coordinator, or print them from the IR-4 website: http://ir4.rutgers.edu/FoodUse/FieldBook/index.htm

2. Some data requested on a form can be applicable to more than one IR-4 field trial. When this occurs, a verified true copy of the completed form can be made and inserted in the proper Part(s) of other IR-4 FDB's. A verified true copy is made by marking on the page which is copied that "THIS IS A TRUE COPY OF ORIGINAL" or similar statement, noting which IR-4 FDB or other documents contain the original and having the person responsible for verifying the copy, initial and date the verification statement. In general, Parts 6G, 6H, 6I, 7A, and 7B should not be copied; they should have original entries. Contact the Study Director if a possible exception exists.

3. Staples and paper clips should not be used on pages in the FDB. Photographs and small pieces of paper with data should be taped to a standard-sized, blank piece of paper.

4. Follow all directions on how to complete the FDB carefully. When completing forms, you should enter all of the requested information, if possible. If a particular form or section of the form does not require a response, make a line-out (diagonal line from the top of the page or field to the bottom), then initial and date the line-out or the bottom of the page. If the requested data are not applicable, give an explanation. Some forms allow the submission of equivalent information versus completion of forms (e.g. verified true copy of recording temperature monitor printout instead of completing the temperature log).

5. All entries should be clear, understandable, legible, and made with a ballpoint pen in **indelible blue or black ink**. Changes to the raw data can only be made by **drawing a single line** through the original entry so as not to obscure it. The date, signature (or initials) and reasons for change (brief description or Error Code) must accompany any change. Acceptable Error Codes include:

AW=Accidental Write-over	**LE=Late Entry**	**SP=Spelling Error**
CE=Calculation Error	**ME=Measurement Error**	**TE=Transcription Error**
EE=Entry Error	**NA=Not Applicable**	**UE=Unnecessary Entry**
IE=Illegible Entry	**NI=New Information**	**NR=Not Recorded**
IW=Inappropriate Word	**PE=Pagination Error**	**WE=Wrong Entry**

Other error codes can be used; however, the codes must be outlined in an approved SOP or noted in this IR-4 FDB. Circling error codes is not required, but may be done for clarity.

6. **Do not write on the back of any page in the FDB. Do not insert 2-sided documents (pages with printing on both sides) in the FDB. If necessary, make one-sided copies of 2-sided documents for the FDB, and save the original in facility files. The MSDS for the test substance is not needed in the FDB, though a copy should be retained by the field personnel at each trial.** The *OBSERVATIONS, EXPLANATIONS AND COMMUNICATION LOG* (Part 3) can be used to record observations, notes, phone calls, correspondence, and other events that have no specific place in the IR-4 FDB. Also, if there is not enough space in a section of a form to record the complete entry, add another page, or make a reference to Part 3 and complete the entry there.

7. If entries are made on a page over more than one day, each day's entry must be initialed and dated. When more than one person enters data on a page in one day, each of the initials (or signatures) must be dated. Data that have been recorded on non-FDB pages that are being inserted into the FDB must be initialed and dated, even if the data are also transcribed onto an FDB page. Multi-page documents, which are themselves paginated, may be inserted into a FDB with initial and date on either the first or last page only.

8. The FDB should be complete when submitted, with the permissible exceptions of laboratory receipt forms, certificates of analysis, and protocol deviation forms that have been signed by the Study Director. Occasionally, additional exceptions may be made with the permission of the Regional Field Coordinator. Do not make a notation that the requested information will be submitted at a future date. Make a certified, true copy that includes each page of the IR-4 FDB for your records. **Send the original to the designated Regional Field Coordinator.**

9. If there are any questions on how to conduct research or capture information in the IR-4 FDB, contact the Study Director and the Regional Field Coordinator. Additionally, the Study Director should be contacted if:
   - ☐ the protocol requires changes
   - ☐ unforeseen or unavoidable circumstances force a change from protocol directions
   - ☐ actual application rate deviates more than - 5% or +10% from the protocol rate

PAGINATION INSTRUCTIONS FOR THE FIELD DATA BOOK

Initial pagination of the Field Data Book:
Pages should be numbered consecutively within each Part, starting each Part with Page 1. Do not paginate sub-parts separately. (There should not be Part 6A, page 1, followed by Part 6B, page 1. Part 6 is paginated as 1, 2, 3... until the last page in Part 6.) **When an FDB Part is initially paginated, the total number of pages in that part is entered at the bottom of page 1 next to the words "Total number of pages in this section at initial pagination".** It is not necessary to enter this total on each page within the section. All pages, including those not originally part of the FDB (such as Bills of Lading), should be paginated and identified with the field ID number. Pages in the Protocol/Protocol Changes section do not need pagination, but should be identified with the field ID number. Pages in Part 6 should be grouped by application#. I.e. all of the pages related to application #1 should come first, followed by all of the pages related to application #2, and so on.

Additional pages inserted into the Field Data Book after it has been paginated:
If a page is added after the FDB has been paginated, number that page with the previous page number and a letter. E.g. a page inserted after Part 6, page 15, would be Part 6, page 15A. If two pages had been added here, the second page would be Part 6, page 15B. The total number of pages that had been entered on page 1 is not revised. The addition of these pages to the Field Data Book must be noted on the table on the next page, with the initials of the person who inserted the pages and the date of entry. **Each row of the table should include only pages entered within one Part on one date (see example below); however all entries made on one date should be initialed and dated as a group. After all new pages have been entered on a particular date, a horizontal line must be drawn across the "Initials" and "Date" column to indicate which entries are confirmed by the initials and date above the line. This page should be kept just in front of the divider for Part 1.** Unused portions of this table should not be lined out.

Example: PAGES ADDED TO THE FIELD DATA BOOK AFTER INITIAL PAGINATION			
FDB Part	**Identity of inserted pages (e.g. 6A-B, 9A)**	**Initials**	**Date**
6	7A, 14A	GrL	8/8/14
7	2A, 14B		
4	3A-C	RS	10/1/14
5	1A	KH	2/28/15
6	7B-F, 14C, 20A		

IR-4 HQ/October 2013
New Jersey Agricultural Experiment Station Publication No. A-27200-03-93.
Supported by State, U.S. Hatch Act, and other U.S. Department of Agriculture Funds.

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Leaf

Field ID No. _____

CHAIN OF CUSTODY FOR IR-4 FIELD DATA BOOK

FIELD RESEARCH DIRECTOR: Keri Skiles

After receipt of this IR-4 Field Data Book, the Field Research Director shall start the chain of custody log by completing the first part. Once raw data entry has begun in the Field Data Book, the data books are to be in the custody of the Field Research Director (or personnel under the Field Research Director's supervision). When the Field Data Book is transferred to another individual (e.g. sending completed Field Data Book to IR-4 Regional Field Coordinator), the sender must note to whom and when the data book is sent. **The recipient must sign the next block and date the form upon receipt.**

Signature of Field Research Director: Keri Skiles Date: 12/20/13

Printed name: Keri Skiles Initials: KS

Field Data Book sent/given to: Becky Sisco Date Sent: 6/25/14 ~~6/25/14~~

Signature of recipient: Rebecca Sisco Date Received: 6.30.14

Printed name of recipient: Rebecca Sisco Initials: RS

Field Data Book sent/given to: Kathleen Feist Date Sent: 7/8/14

Signature of recipient: Kathleen Feist Date Received: 7/10/14

Printed name of recipient: Kathleen Feist Initials: KF

Field Data Book sent/given to: Rebecca Sisco Date Sent: 7/29/14

Signature of recipient: Rebecca Sisco Date Received: 8-1-14

Printed name of recipient: Rebecca Sisco Initials: RS

Field Data Book sent/given to: Martin Beran Date Sent: 8/5/14

Signature of recipient: _____ Date Received: _____

Printed name of recipient: _____ Initials: _____

Field Data Book sent/given to: _____ Date Sent: _____

Field ID No.________________________

Additional Chain of Custody Signature Blocks: **DO NOT LINE OUT THIS PAGE!**

Signature of recipient: ________________________ Date Received: ____________

Printed name of recipient: ________________________ Initials: ____________

Field Data Book sent/given to: ________________________ Date Sent: ____________

Signature of recipient: ________________________ Date Received: ____________

Printed name of recipient: ________________________ Initials: ____________

Field Data Book sent/given to: ________________________ Date Sent: ____________

Signature of recipient: ________________________ Date Received: ____________

Printed name of recipient: ________________________ Initials: ____________

Field Data Book sent/given to: ________________________ Date Sent: ____________

Signature of recipient: ________________________ Date Received: ____________

Printed name of recipient: ________________________ Initials: ____________

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Signature of recipient: ________________________ Date Received: ____________

Printed name of recipient: ________________________ Initials: ____________

Field Data Book sent/given to: ________________________ Date Sent: ____________

Signature of recipient: ________________________ Date Received: ____________

Printed name of recipient: ________________________ Initials: ____________

Field Data Book sent/given to: ________________________ Date Sent: ____________

Field ID No. ____

PAGES ADDED TO THE FIELD DATA BOOK AFTER INITIAL PAGINATION (See Page 4 for instructions on entering multiple pages on the same date—you only need to enter initials once on each date!)			
FDB Part	**Identity of inserted pages (e.g. 6A-B, 9A)**	**Initials**	**Date**
3	10a-10d	KF	7-29-14

Do not line out unused portions of this table.
(Additional "Pages Added" tables may be inserted if needed.)

GLP

Part 1

Nitrapyrin / Lettuce
ID No. A2659.14-CA01

FIELD ID NO: Skiles

IR-4 FIELD DATA BOOK

PART 1. GOOD LABORATORY PRACTICE COMPLIANCE INFORMATION

A. STANDARD OPERATING PROCEDURES

Provide a verified true copy of the SOP index(s) ***or*** *complete the below section by listing all SOP's used in this research trial.*

SOP IDENTIFICATION *(INCLUDING REVISION NO.)*	DATE APPROVED *(by IR-4 Regional Field Coordinator)*
Refer to following pages.	
Vs 5/28/14	

ABOVE DATA ENTERED BY: Keri Stiles *DATE:* 5/28/14

PART 1 PAGE 1 Trial Year 2014

Total number of pages in this section at initial pagination: 4

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THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS_____DATE_____

UC Kearney Agricultural Research and Extension - IR-4 Field Research Center

9240 S. Riverbend Ave., Parlier, CA 93648

STANDARD OPERATING PROCEDURES – TABLE OF CONTENTS

SOP No. UCKARE-(#)	TITLE	Year Revised	Date Revised
10	**Administration**		
10-1.3	IR-4 Field Research Center Management	2011	03/03/11
10-2.5	Standard Operating Procedures	2011	03/03/11
10-3.4	Personnel	2013	03/18/13
10-4.4	Quality Assurance	2011	03/03/11
10-5.3	EPA (Environmental Protection Agency) Inspections	2011	03/03/11
20	**Data (Reporting & Records)**		
20-1.5	Raw Data (Recording)	2011	03/03/11
20-2.2	Disposition of Field Data Books	2006	02/09/06
20-3.5	Archiving Raw Data	2011	03/03/11
20-4.2	Rounding	2012	02/22/12
30	**Test System**		
30-1.3	Commodity Establishment and Maintenance	2011	03/03/11
30-2.3	Test Site (Selection, Design, Maintenance, Destruction)	2011	03/03/11
30-3.3	Performance Evaluation	2011	03/03/11
30-4.2	Greenhouse Facilities	2011	03/03/11
40	**Test Substance**		
40-1.4	Test Substance Receipt, Storage and Disposal	2007	12/04/07
40-2.5	Test Substance Application	2011	03/03/11
50	**Test System Samples**		
50-1.6	Residue Sample Collection	2012	02/22/12
50-2.5	Residue Sample Storage and Shipment	~~2012~~	03/07/13
50-3.3	Drying of Plums and Grapes (Raisins)	2012	03/03/11
60	**Equipment**		
60-1.4	Flowmeter –Scienco	2007	04/08/10
60-2.3	Freezers	2007	02/23/07
60-3.5	Sprayer - Croplands Handgun	2007	12/04/07
60-4.4	Sprayer - R & D Model T Backpack	2007	12/04/07
60-5.4	Temperature Measurement Instruments (Thermometers)	2009	1/16/09
60-6.4	Temperature/Humidity Measurement Instrument (Psychrodyne)	2009	1/16/09
60-7.4	Temperature/Humidity Measurement Instrument (Thermo-Hygro.)	2009	1/16/09
60-8.6	Temperature or Temperature/Humidity Recording Instruments (HOBO - Onset)	2010	04/08/10
60-9.4	Weights (Calibration)	2010	04/08/10
60-10.4	Weighing Instruments	2009	1/16/09
60-11.2	Wind Speed Measurement Instrument (Turbometer-Davis)	2006	02/09/06
60-12.5	Sprayer – Airblast (Tractor-Mounted)	2012	02/22/12
60-13.2	Liquid Measurement – Bulk Containers	2006	02/09/06
60-14-1	Washer/Waxer (Post Harvest)	2007	02/23/07
60-15-1	Borrowed Equipment	2010	04/08/10
60-16-1	Chemigation	2012	02/22/12

Nitrapyrin / Lettuce
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Skiles

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OE 3-27-13
EE 2013

SOP numbering Format: [Facility ID] - [sop category] - [sop number]. [version number]

Part
Page: 2

SOPs submitted by: [signature] Field Research Director, UCKARE — Date: 3/18/13

SOPs submitted by: [signature] Field Research Director, UCKARE — Date: 3/18/13

Date SOPs approved by: [signature] Regional Field Coordinator/Assistant Regional Field Coordinator — Approval Date: 3/19/13

Part
Page:

06/16/14

UC Kearney Agricultural Research and Extension - IR-4 Field Research Center

9240 S. Riverbend Ave., Parlier, CA 93648

2014 STANDARD OPERATING PROCEDURES – TABLE OF CONTENTS

SOP No. UCKARE-(#)	TITLE	Year Revised	Date Revised
10	**Administration**		
10-1.3	IR-4 Field Research Center Management	2011	03/03/11
10-2.6	Standard Operating Procedures	2014	02/13/14
10-3.4	Personnel	2013	03/18/13
10-4.4	Quality Assurance	2011	03/03/11
10-5.3	EPA (Environmental Protection Agency) Inspections	2011	03/03/11
20	**Data (Reporting & Records)**		
20-1.6	Raw Data (Recording)	2014	02/13/14
20-2.2	Disposition of Field Data Books	2006	02/09/06
20-3.5	Archiving Raw Data	2011	03/03/11
20-4.2	Rounding	2012	02/22/12
30	**Test System**		
30-1.3	Commodity Establishment and Maintenance	2011	03/03/11
30-2.4	Test Site (Selection, Design, Maintenance, Destruction)	2014	02/13/14
30-3.4	Performance Evaluation	2014	02/13/14
30-4.2	Greenhouse Facilities	2011	03/03/11
40	**Test Substance**		
40-1.4	Test Substance Receipt, Storage and Disposal	2007	12/04/07
40-2.6	Test Substance Application	2014	01/15/14
50	**Test System Samples**		
50-1.7	Residue Sample Collection	2014	02/13/14
50-2.6	Residue Sample Storage and Shipment	2014	02/13/14
50-3.4	Drying of Plums, Grapes (Raisins), and Figs	2014	02/25/14
60	**Equipment**		
60-1.4	Flowmeter –Scienco	2007	04/08/10
60-2.4	Freezers	2014	02/13/14
60-3.5	Sprayer - Croplands Handgun	2007	12/04/07
60-4.4	Sprayer - R & D Model T Backpack	2007	12/04/07
60-5.5	Temperature Measurement Instruments (Thermometers)	2014	02/13/14
60-6.5	Temperature/Humidity Measurement Instrument (Psychrodyne)	2014	02/13/14
60-7.5	Temperature/Humidity Measurement Instrument (Thermo-Hygro.)	2014	02/13/14
60-8.7	Temperature or Temperature/Humidity Recording Instruments (HOBO - Onset)	2014	02/13/14
60-9.5	Weights (Calibration)	2014	02/13/14
60-10.5 (i)	Weighing Instruments	2014	02/13/14
60-11.~~25~~ 3	Wind Speed Measurement Instrument (Turbometer-Davis)	2014	02/13/14
60-12.5	Sprayer – Airblast (Tractor-Mounted)	2012	02/22/12
60-13.3	Liquid Measurement – Bulk Containers	2014	02/13/14
60-14-1	Washer/Waxer (Post Harvest)	2007	02/23/07
60-15-1	Borrowed Equipment	2010	04/08/10
60-16-1	Chemigation	2012	02/22/12

Nitrapyrin / Lettuce
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Skiles

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SOP numbering Format: [Facility ID] - [sop category] - [sop number]. [version number] (i) (EE) OK 3-5-14

*All SOPs have been reviewed prior to signing

SOPs submitted by: David Emmes — Field Research Director, UCKARE — Date: 2/27/14

SOPs submitted by: Kevin Skiles — Field Research Director, UCKARE — Date: 2/27/14

Part 1
Page: 3

Date SOPs approved by: Mike P. Tolson — Regional Field Coordinator/Assistant Regional Field Coordinator — Approval Date: 3/3/14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 1. GOOD LABORATORY PRACTICE COMPLIANCE INFORMATION

B. GOOD LABORATORY PRACTICE STATEMENT

INSTRUCTIONS: The Field Research Director should print his/her name, sign, and date the Good Laboratory Practice statement. Additionally, the GLP compliance status of data in this study should be documented.

I, Keri Skiles, served as "Field Research Director" for this research trial. I have reviewed the appropriate raw data and I attest that the data accurately reflect the conduct of and the observations made during this trial. All activities associated with this trial were conducted according to *Chapter 40, Code of Federal Regulations, Part 160* or OECD Good Laboratory Practices, except for those noted below (check appropriate GLP status column):

GLP Compliant			DATA CATEGORY
YES	NO	NA[1]	
	X		Weather, irrigation, and soil characterization data are not required by the protocol to be compliant with GLP's and are noted as non-compliant in the final report for the study.
	X		TEST SITE HISTORY (chemical applications prior to the trial year) (FDB Part 5)
	X		CULTURAL PRACTICES (dating back to harvest of the previous crop), MAINTENANCE FERTILIZERS AND PESTICIDES (current trial year) (FDB Part 5)
			Potential data-generating equipment is listed below. Indicate the GLP compliance status of each. In U.S. trials, GLP-compliant equipment must comply with 40 CFR 160, Subpart D, which includes 160.81 (b) (11).
X			ENVIRONMENTAL MONITORING DEVICES for test substance storage (FDB Part 4)
		X	GLOBAL POSITIONING DEVICE used to determine plot location (FDB Part 5)
		X	FLOW METERS and similar SPRAYER OUTPUT CALIBRATION EQUIPMENT used to measure water (**excluding** marked, calibrated beakers, graduated cylinders or flasks suitable for scientific research) (FDB Part 6)
	X		pH METER or STRIP for measuring the acidity of the carrier (water) (FDB Part 6)
	X		RESIDUE SAMPLE WEIGHING EQUIPMENT (FDB Part 7)
X			ENVIRONMENTAL MONITORING DEVICES for sample storage (FDB Part 7)
			List below additional *non*-compliant items (additional pages may be used for more items)

FIELD PERSONNEL SHOULD NOT LINE OUT BLANK CELLS ON THIS PAGE

[1]"NA" should be checked for equipment that was not used in this trial.

Keri Skiles
SIGNATURE OF FIELD RESEARCH DIRECTOR

6/16/14
DATE

Trial Year 2014

Personnel

Part 2

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 2. PERSONNEL INVOLVED IN TRIAL

A. IDENTIFICATION OF INDIVIDUALS

INSTRUCTIONS: Complete this form to document the Field Research Director and other personnel involved in the trial. Also include all individuals who entered data and/or worked on this trial (these include scientists, technicians, summer interns, and their supervisors). General field workers and Quality Assurance Unit personnel should not be included. Upon completion of this section participants may use their initials to verify data. ***Original signatures and initials are preferred on this page, but a true copy is acceptable.***

FIELD RESEARCH DIRECTOR

NAME *(print)*: Keri Skiles
AFFILIATION: UC Kearney Agricultural Research and Extension Center
ADDRESS: 9240 S Riverbend Ave
CITY: Parlier
STATE or PROVINCE: CA ZIP (Postal Code): 93648
TELEPHONE: (559) 646-6061 FAX: (559) 646-6015
E-MAIL ADDRESS: KmSkiles@UCANR.edu
SIGNATURE: Keri Skiles DATE: 1/6/14
INITIALS: KS

OTHER TRIAL PERSONNEL

PRINT NAME	SIGNATURE	INITIALS	DATE
DAVID ENNES	David Ennes	DE	4-17-14
	KS 5/28/14		

PART 2 PAGE 1 Trial Year 2014

Total number of pages in this section at initial pagination: 16

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ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 2. PERSONNEL INVOLVED IN TRIAL

B. QUALIFICATIONS SUMMARY

INSTRUCTIONS: Provide current curriculum vitae containing the education, training and experience records of trial personnel, concentrating on items that are applicable to field research with pesticides and good laboratory practices for every individual listed on Part 2-A. If this is not available complete a copy of this Form.

NAME _____ _____
(PRINTED) (SIGNATURE)

EDUCATION SUMMARY: _____

Refer to following pages.
VS 5/28/14

WORK EXPERIENCE SUMMARY: _____

SPECIAL TRAINING, QUALIFICATIONS OR ACCOMPLISHMENTS: _____

ABOVE DATA ENTERED BY: _____ *DATE:* _____

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University of California Kearney Agriculture Research and Extension, IR-4 Program

9240 S. Riverbend
Parlier, California 93648

Telephone (559) 646-6061
Facsimile (559)-646-6015

CURRICULUM VITAE

Name: Keri M. Skiles

Title: Field Research Director

Education: Porterville College, Porterville, CA
TAPP High School, Porterville, CA

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Professional Training:

GLP Certification: Critical Aspects of Conducting GLP Field Studies and Regulatory Issues, 12/(17-18)/1998; FIFRA GLP Field & Analytical Training Session, 2/7/2001; GLPs for the Field, 1/(21-22)/2002; Western Region IR-4 GLP and Field Residue Training, 3/(5-6)/2002; Western Region IR-4 Residue Training Workshop (Field, Laboratory and GLP), 1/(17-18)/2007; Application of GLPs to Field Studies, 11/(12-13)/2007; Application of GLP's to Field Studies, 11/(13-14)/2008; IR-4 National Education Conference, 2/(24-25)/2009; Western Region IR-4 Residue Training Workshop (Field, and GLP), 2/(2-3)/2010; IR-4 National Education Conference, 2/(27-28)/2013

Field Study Related Training: 1998 – 2007: sponsor and facility specific SOPs, "Advantage" electronic field trial notebooks, radioactive materials safety; environmental heath and safety; Worker Protection Standard; FedEx dangerous goods seminars (DOT training)

Professional Experience:

1/2008 – Present University of California, Kearney Research & Extension Center, Parlier, CA

Field Research Director – Responsibilities include: Coordination of all operations involving field agrichemical residue trials involving pesticides, efficacy and environmental fate studies and all documentation supporting such activities, and assuring that those activities are performed in accordance with the EPA's GLP Standards.

2/2007 – 12/2007 University of California, Kearney Research & Extension Center, Parlier, CA

Laboratory Assistant III – Under general supervision, conduct and/or supervise all aspects of GLP compliant IR-4 residue field trials. Perform the duties of a Field Research Director and assist other Field Research Director(s).

11/2006 – 2/2007 University of California, Kearney Research & Extension Center, Parlier, CA
University of California, Riverside

Laboratory Assistant II – Perform or supervise the technical conduct of IR-4 field research trials under the supervision of Laura Van der Staay, Staff Research Associate (*KREC IR-4 Field Research Center Director*), UC, ANR, KREC. Provide operational support to the KREC IR-4 Field Research Directors by generating and maintaining raw data documentation for field research trial activities; assure that those activities are GLP compliant. Perform or supervise standardized and recurring technical procedures in a research laboratory under the supervision of Dr. James E. Adaskaveg, Professor, UCR, Department of Plant Pathology.

3/2006 – 11/2006 Spartan Computer Services, Irvin, CA

Computer Technician – Repair and replace computer parts for restaurant point of sales and office computers. Re-image and trouble shoot computers. Repair and replace wiring.

2/2003 – 3/2006 Research For Hire, Porterville, CA

Research Assistant/Laboratory Coordinator – Manage all operations involving the maintenance or use of a radioisotope laboratory for C^{14} metabolic fate GLP compliant field research trials. Perform or supervise complex critical event components of GLP compliant field research trials. Maintain and calibrate GLP equipment. Perform or supervise the technical conduct of GLP compliant field research trials under the supervision of a Research Biologist. Generate and maintain GLP compliant raw data documentation for field research trial activities. Conduct quality control audits of Field Trial Notebooks to ensure GLP compliance. Train employees.

3/1998 – 2/2003 Research For Hire, Porterville, CA

Research Assistant - Perform or supervise the technical conduct of GLP compliant field research trials under the supervision of a Research Biologist. Generate and maintain GLP compliant raw data documentation for field research trial activities. Conduct quality control audits of Field Trial Notebooks to ensure GLP compliance. Train employees.

Signature: Keri Skiles Initials: KS Date: 3/3/14

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Skiles

SAFETY AND IR-4 TRAINING SESSIONS

EMPLOYEE NAME: Keri Skiles **JOB TITLE:** LAB Assistant II

EVENT DATE	TRAINING EVENT/LOCATION	TRAINER	INITIALS/DATE
11/8/06	Reviewed org-charts ③Parlier, CA	Laura Van der Staay	KS 11/8/06
↓	KREC IR-4 SOP's 1.01-1.06 ③Parlier, CA	↓	↓
11/9/06	Reviewed UCKREC SOP's ③Parlier, CA	Laura Van der Staay	KS 11/9/06
11/13/06	IIPP Fire ~~prevention~~ ① Prevention ③Parlier, CA	Alan Cary	KS 11/13/06
11/29/06	Orchard-Ladder ~~Safety~~ ② Safety Note #98 ③Parlier, CA	Laura Van der Staay	KS 11/29/06
12/11/06	Respirator Fit test ③Parlier, CA	Alan Cary	KS 12/11/06
1/17, 18/07	Western Region IR-4 Residue training Workshop (Field, Laboratory and GLP) ~~③Parlier CA~~ ⑤Oahu, HI	Various	KS 1/22/07
2/6/07	Respirator Fit Test ③Parlier, CA	MARK Barros	KS 2/6/07
2/14/07	Hazardous Waste management ③Parlier, CA	Alan Cary	KS 2/14/07
5/18/07	Tractor Training ③Parlier, CA	Alan Cary	KS 5/18/07

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①Spelling error. KS 1/29/07 ②Spelling Error. KS 3/2/09 ③Late entry. KS 4/12/10
④Entry error. KS 4/12/10 ⑤Late entry. KS 4/12/10

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SAFETY AND IR-4 TRAINING SESSIONS

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

EMPLOYEE NAME: Keri Skiles **JOB TITLE:** Laboratory Assistant III
KS 5/21/07

EVENT DATE	TRAINING EVENT/LOCATION	TRAINER	INITIALS/DATE
5/21/07	Operation and use of tractor ①Parlier, CA	David Ennes	KS 5/21/07
6/19/07	UC Pesticide Policy, Parlier, CA	Rick Melnicoe	KS 6/19/07
11/12-13/07	Application of GLPs to Field Studies, Hood River OR	Deborah Garvin	KS 11/19/07
2/20/08	Respirator Fit test ①Parlier CA	mark Barros	KS 2/20/08
5/29/08	UC Pesticide Policy, Parlier, CA	Rick Melnicoe	KS 5/29/08
11/13-14/08	Application of GLP's to Field Studies Paso Robles, CA	Deborah Garvin	KS 11/17/08
1/20/09	Respirator Fit Test, Parlier, CA	Thor Benzing	KS 1/20/09
2/24,25/09	IR-4 National Education conference Training, San Antonio, TX	Various	KS 3/2/09
6-2-09	UC Pesticide Policy, Parlier, CA	Rick Melnicoe	KS 6/2/09
9-10-09	Defensive Driving Awareness ①Parlier, CA	Jerry Bach	KS 9/10/09

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①Late entry. KS 1/12/10

SAFETY AND IR-4 TRAINING SESSIONS

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

EMPLOYEE NAME: Keri Skiles - KS 9/10/09 **JOB TITLE:** Field Research Director KS 9/10/09

EVENT DATE	TRAINING EVENT/LOCATION	TRAINER	INITIALS/DATE
2-2-10 2-3-10	Western Region IR-4 Residue Training workshop (Field & GLP), Parlier, CA	Various	KS 2/3/10
3-18-10	① ~~Worker Safe~~ working safely in the greenhouse EPA WPS Training for workers, Parlier, CA	Video	KS 3/18/10
4-7-10	Respirator fit test, Parlier, CA	Alan Cary	KS 4/7/10
10-20-10	uc Pesticide Policy, Parlier CA	Rick Melnicoe	KS 10/20/10
6/9/11	uc Pesticide Policy, Parlier CA	Rick Melnicoe	KS 6/9/11
6/17/11	Respirator fit test, Parlier, CA	Alan Cary	KS 6/17/11
1/13/12	GLP Residue Training webinar in 2012. Parlier, CA	Various	KS 1/17/12
2/18/12 ②	GLP Residue Training webinar in 2012 Parlier CA	Various	KS 2/13/12
3/9/12	GLP Residue Training webinar in 2012 Parlier CA	Various	KS 3/9/12
4/13/12	GLP Residue Training webinar in 2012, Parlier CA	Various	KS 4/13/12

① Entry error. KS 3/18/10 ② Entry error. KS 2/13/12

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SAFETY AND IR-4 TRAINING SESSIONS

EMPLOYEE NAME: Keri Skiles - KS 5/11/12 **JOB TITLE:** Field Research Director. KS 5/11/12

EVENT DATE	TRAINING EVENT/LOCATION	TRAINER	INITIALS/DATE
5/11/12	GLP Residue Training Webinar in 2012 Parlier CA	Various	KS 5/11/12
5/31/12	Respirator Fit test, Parlier CA	Alan Cary	KS 5/31/12
6/8/12	GLP Residue Training ~~webinar~~ webinar in 2012. Parlier CA KS 6/8/12	Various	KS 6/8/12
6/14/12	Uc Pesticide Policy, Parlier CA	Rick Melnicoe	KS 6/14/12
7/13/12	GLP Residue Training Webinar CA in 2012 Parlier	Various	KS 7/13/12
8/10/12	GLP Residue Training Webinar 2012 Parlier CA	Various	KS 8/14/12
9/14/12	GLP Residue Trainingwebinar in 2012 Parlier CA	Various	KS 9/14/12
10/30/12	GLP Reside Training webinar in 2012. Parlier CA	Listened to recording of oct 12 session, Various	KS 10/30/12
11/9/12	GLP Residue Training webinar in 2012 Terra Bella CA	Various	KS 11/13/12
12/14/12	GLP Residue Training Webinar in 2012 Terra Bella CA	Various	KS 12/14/12

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SAFETY AND IR-4 TRAINING SESSIONS

EMPLOYEE NAME: Keri Skiles KS 1/8/13 **JOB TITLE:** Field Research Director KS 1/8/13

EVENT DATE	TRAINING EVENT/LOCATION	TRAINER	INITIALS/DATE
1/8/13	GLP Residue Training Webinar in 2013 Parlier, CA	Various	KS 1/8/13
2/27,28/13	IR-4 National Education Conference Training, San Antonio, TX	Various	KS 3/6/13
4/3/13	UC Pesticide Policy, Parlier CA	Lisa Blecker	KS 4/3/13
4/9/13	GLP Residue Training Webinar in 2013: Tena Bella CA	Various	KS 4/9/13
5/13/13	Respirator fit Test Parlier CA	Alan Cary	KS 5/13/13
8-13-13	GLP Residue Training Webinar in 2013 eQA Live Parlier CA	Various	KS 8/13/13
↓	Reminders for Improving Field trials Parlier CA	↓	KS 8/13/13
2/27/13	IR-4 eQA Training Program San Antonio, TX	Tammy Barkalow	KS 9/19/13
1/14/14	Highlights of Smart moves by our Field Research Directors, Parlier CA	Various	KS 1/14/14
1/16/14	UC Pesticide Policy, Parlier, CA	Lisa Blecker	KS 1/16/14

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Skiles

SAFETY AND IR-4 TRAINING SESSIONS

EMPLOYEE NAME: Keri Skiles KS 3/4/14 **JOB TITLE:** Field Research Director KS 3/4/14

EVENT DATE	TRAINING EVENT/LOCATION	TRAINER	INITIALS/DATE
3/4/14	Webinar in 2014 GLP residue training eQA System Update on making IR-4 FRC work in a resource limited world, Parlier CA	Various	KS 3/4/14
3/26/14	Respirator fit test, Parlier CA	Alan Cary	KS 3/26/14
5/13/14	Webinar Crop residue / GLP training sessions whats on your mind Questions/Answers/Discussions, Parlier CA	Various	KS 5/13/14
	KS 5/28/14		

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Skiles

University of California Kearney Agriculture Research and Extension , IR-4 Program
9240 S. Riverbend
Parlier, California 93648
Telephone (559) 646-6061
Facsimile (559) 646-6015

CURRICULUM VITAE

Name: David J. Ennes

Title: Field Research Director

Education: California State University, Fresno, CA; BS Degree - Plant Science
Yuba College, Yuba City, CA; AS Degree - Agriculture

Professional Experience:

06/2005-Present.....University of California Kearney Research and Extension Center, Parlier, CA
Field Research Director - Responsibilities include: Coordination of all operations involving field agrichemical residue trials involving pesticides, efficacy and environmental fate studies and all documentation supporting such activities, and assuring that those activities are performed in accordance with the EPA's GLP Standards.

06/99-6/2005.....Research For Hire, Porterville, CA
Research Biologist - Supervision of field agrichemical residue trials, efficacy and environmental fate studies and all documentation supporting such activities, and assuring that those activities are performed in accordance with the EPA's GLP Standards.

1998-1999.....AgSolutions, Inc., Corvalis, OR
Research Associate - Conduct efficacy and residue studies, field and greenhouse trials, and lab bioassays for the purpose of registration and re-registration of chemical and biological products for private industry, grower commissions and agricultural companies. Residue trials conducted under EPA's GLP Standards. Work includes identifying and setting-up trial sites and plots layouts, designing experiments, applying test substances, evaluating product performance, analyzing data, and scientific report writing.

1997-1998.....Idaho State Seed Lab, Boise, ID
Seed Analyst Trainee - Assisted in the planting and evaluation procedures for a variety of crops.

1997.....Valent USA, Walnut Creek, CA
Summer Intern - Assisted in setting up herbicide demonstration trials in commercial sugar beet fields.

05/96-01/97.....Research For Hire, Porterville, CA
Research Biologist - Supervision of field agrichemical residue trials, efficacy and environmental fate studies and all documentation supporting such activities, and assuring that those activities are performed in accordance with the EPA's GLP Standards.

04/95-05/96.....Stimson Lane Ltd, Grandview, WA
Viticultural Assistant - Assisted in management of company vineyards, maintained research vineyard and assisted in propagation projects.

07/91-02/94.....Research For Hire, Porterville, CA
Research Biologist - Supervision of field agrichemical residue trials, efficacy and environmental fate studies and all documentation supporting such activities, and assuring that those activities are performed in accordance with the EPA's GLP Standards.

Professional Licenses: Qualified Applicator License 105352

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Signature: David Ennes Initials: DJE Date: 1-15-14

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Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

University of California Kearney Agricultural Research Extension (UCKARE)
IR-4 Program

Historical training records for

DAVID ENNES

prior to 2007 are located in UCKARE records.

Signature David Ennes Date 6-13-11

Authentic Copy-Original in UCKARE Records 6/5/14 FIELD ID NO: __

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Part 2
Page: 11

SAFETY AND IR-4 TRAINING SESSIONS

EMPLOYEE NAME: DAVID ENNES - Ofc 2-15-07 **JOB TITLE:** Director - Ofc 2-15-07 Field Research

EVENT DATE	TRAINING EVENT/LOCATION	TRAINER	INITIALS/DATE
2-15-07	Respirator Fit Test Parlier, CA	Alan Cary	Ofc 2-15-07
6-19-07	UC Pesticide Policy Parlier, CA	Rick Melnicoe	Ofc 6-19-07
3-12-08	Respirator Fit Test Parlier, CA	Alan Cary	Ofc 3-12-08
5-29-08	UC Pesticide Policy Parlier, CA	Rick Melnicoe	Ofc 5-29-08
11-13, 14-08	Application of GLP's to Field Studies Paso Robles, CA	Deborah Garvin	Ofc 11-17-08
12-17-08	Shipping with dry ice On line training ① - Parlier, CA	Edu where	Ofc 12-17-08
2-24, 25-09	IR-4 National Education Conference Training ① - San Antonio TX	Various	Ofc 3-2-09
3-4-09	Respirator Fit Test Parlier, CA	Alan Cary	Ofc 3-4-09
6-2-09	UC Pesticide Policy Parlier, CA	Rick Melnicoe	Ofc 6-2-09
9-10-09	Defensive Driving Awareness Parlier, CA	Jerry Bach	Ofc 9-10-09

① (LE) Ofc 1-12-10

Part 2
Page: 10

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Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

SAFETY AND IR-4 TRAINING SESSIONS

EMPLOYEE NAME: DAVID ENNES - Dfe 9-10-09

JOB TITLE: Field Research Director Dfe 9-10-09

EVENT DATE	TRAINING EVENT/LOCATION	TRAINER	INITIALS/DATE
2-2,3-2010	Western Region IR-4 Residue Training Workshop (Field and GLP)	Parlier, CA Various	Dfe 2-3-10
3-18-10	working safely in the greenhouse EPA WPS Training for workers Parlier, CA	Video	Dfe 3-18-10
4-7-10	Respirator Fit Test Parlier, CA	Alan Cary	Dfe 4-7-10
10-20-10	UC Pesticide Policy Parlier, CA	Rick Melnicoe	Dfe 10-20-10
6-9-11	UC Pesticide Policy Parlier, CA	Rick Melnicoe	Dfe 6-9-11
6-17-11	Respirator Fit Test Parlier, CA	Alan Cary	Dfe 6-17-11
8-25-11	Shipping with dry ice on-line training Parlier, CA	Edu where	Dfe 8-25-11
1-13-12	GLP Residue Training webinars in 2012 Parlier, CA	Various	Dfe 1-17-12
2-10-12	GLP Residue Training webinars in 2012 Parlier, CA	Various	Dfe 2-10-12
3-9-12	GLP Residue Training webinars in 2012 Parlier, CA	Various	Dfe 3-9-12

Part 2
Page: 13

SAFETY AND IR-4 TRAINING SESSIONS

EMPLOYEE NAME: DAVID EMMES DE 4-16-12

JOB TITLE: Field Research Director DE 4-16-12

EVENT DATE	TRAINING EVENT/LOCATION	TRAINER	INITIALS/DATE
4-13-12	GLP Residue Training Webinars in 2012 Parlier, CA	Various	DE 4-13-12
5-11-12	GLP Residue Training Webinars in 2012 Parlier, CA	Various	DE 5-11-12
5-31-12	Respirator Fit Test Parlier, CA	Alan Cary	DE 5-31-12
6-8-12	GLP Residue training Webinars in 2012 Parlier, CA	Various	DE 6-8-12
6-14-12	UC Pesticide Policy Parlier, CA	Rick Melnicoe	DE 6-14-12
7-13-12	GLP Residue Training Webinars in 2012 Clovis, CA	Various	DE 7-16-12
8-10-12	GLP Residue Training Webinars in 2012 Parlier, CA	Various	DE 8-10-12
9-14-12	GLP Residue Training Webinars in 2012 Parlier, CA	Various	DE 9-14-12
10-30-12	GLP Residue Training Webinars in 2012 Parlier, CA	Listened to recording of oct 12 session Various	DE 10-30-12
11-9-12	GLP Residue Training Webinars in 2012 Clovis, CA	Various	DE 11-13-12

Part 2
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Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

SAFETY AND IR-4 TRAINING SESSIONS

Field Research

EMPLOYEE NAME: DAVID EMMES DK 12-14-12 **JOB TITLE:** Director DK 12-14-12

① EE DK 1-10-13

EVENT DATE	TRAINING EVENT/LOCATION	TRAINER	INITIALS/DATE
12-14-12	GLP Residue Training webinars in 2012 Parlier, CA	Various	DK 12-14-12
1-8-1③3	GLP Residue Training webinars in 2013 Parlier, CA	Various	DK 1-8-13
2-27,28-13	IR-4 National Education Conference Training San Antonio, TX	Various	DK 3-4-13
4-3-13	UC Pesticide Policy Parlier, CA	Lisa Blecker	DK 4-3-13
4-9-13	GLP Residue Training webinars in 2013 Parlier, CA	Various	DK 4-9-13
5-13-13	Respirator Fit Test Parlier, CA	Alan Cary	DK 5-13-13
8-13-13	GLP Residue Training webinars in 2013 eQA Live Parlier, CA	Various	DK 8-13-13
8-13-13	GLP Residue Training webinars in 2013 Trial Documentation, Phytodata, writing deviations, Test substance TIPS.	Various	DK 8-13-13
8-13-13	Application verification and Sample Packing Parlier, CA	Various	DK 8-13-13
2-27-13	IR-4 eQA Training San Antonio Texas	Tammy Barkalow	DK 9-19-13

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SAFETY AND IR-4 TRAINING SESSIONS

EMPLOYEE NAME: DAVID ENNES DE 1-14-14 JOB TITLE: Field Research Director DE 1-14-14

EVENT DATE	TRAINING EVENT/LOCATION	TRAINER	INITIALS/DATE
1-14-14	Webinar in 2014 GLP Residue Training. Highlights of Smart Moves by our Field Research Directors Parlier, CA	Various	DE 1-14-14
1-16-14	UC Pesticide Policy Parlier, CA	Lisa Bleecker	DE 1-16-14
3-4-14	Webinar in 2014 GLP Residue Training COA System update and making IR-4 FRE work Parlier, CA	Various	DE 3-4-14
3-26-14	Respirator Fit Test Parlier, CA	Alan Cary	DE 3-26-14
5-13-14	Webinar Crop Residue/GLP training Session whats on your mind Questions/answers/Discussion	Parlier CA Various	DE 5-13-14
	VG 5/28/14		

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Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

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Notes & Communication Part 3

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: __ _____

IR-4 FIELD DATA BOOK

PART 3. NOTES AND COMMUNICATION LOG

INSTRUCTIONS: This section is to be used to document phone calls, fax communications, and e-mails associated with the field trial (e.g. call to inform Study Director of deviation, call to the laboratory to notify that samples will be shipped tomorrow, etc.), notes on events that relate to the integrity of the research, and data for which there is no specified location in the Field Data Book or for continued entries or explanations to other sections. Follow instructions on data entry, error correction, etc. in the General Instructions. Printed communications such as faxes and email messages that are inserted into this section should be initialed and dated. More than one day's entry may be made on one page in the NOTES AND COMMUNICATION LOG. However, each day's entry must be dated and initialed. Additionally, if a day's entry continues on more than one page, both pages must have the day's entry dated. Photocopy and insert additional pages if needed. Draw a line through all unused space to signify that no additional entries will be made on that page. Initial and date the line. ***Several trials within the same study under one Field Research Director may be documented on one form; however SEPARATE STUDIES MUST BE DOCUMENTED ON SEPARATE FORMS. When several trials are documented, true copies of the communication records must be placed in each Field Data Book to which the comments apply. (The original goes in one of the Field Data Books.)***

ENTRY DATE/ INITIALS	NOTES (include date of event described)
5/8/14	The information on Part 5E, 5G and 5H was obtained verbally from grower.
	16 6/16/14

PART 3 PAGE 1 Trial Year 2014

Total number of pages in this section at initial pagination: 10

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE_____

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 3. NOTES AND COMMUNICATION LOG

ENTRY DATE/ INITIALS	NOTES (include date of event described)
	YB 4/5/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
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UNIVERSITY OF CALIFORNIA, DAVIS

BERKELEY • DAVIS • IRVINE • LOS ANGELES • MERCED • RIVERSIDE • SAN DIEGO • SAN FRANCISCO SANTA BARBARA • SANTA CRUZ

COLLEGE OF AGRICULTURAL & ENVIRONMENTAL SCIENCES
AGRICULTURAL EXPERIMENT STATION
TEL: (530) 752-7633
FAX: (530) 752-2866
http://wrir4.ucdavis.edu

IR-4 PROGRAM, WESTERN REGION
DEPARTMENT OF ENVIRONMENTAL TOXICOLOGY
4218 MEYER HALL
ONE SHIELDS AVENUE
DAVIS, CALIFORNIA 95616

December 18, 2013

Federal Express

Keri Skiles
UC Kearney Research and Extension Center
9240 S. Riverbend Ave.
Parlier, CA 93648

Re: 2014 Protocol
Nitrapyrin/Lettuce (Head & Leaf), PR# A2659
Field ID No. A2659.14-CA01 (Leaf)

Dear Keri,

Enclosed is one (1) original IR-4 National Pesticide Clearance Protocol and Field Data Book for the subject residue research trial. These items contain all the necessary information and forms for conducting IR-4 field research and reporting results in accordance with the EPA's Good Laboratory Practice (GLP) requirements. Please review these items prior to beginning your research. **Note that the complete field and lab protocol is enclosed in accordance with GLP. Disregard Sections 25-34 as they pertain only to laboratory research.**

Carefully read Debbie Carpenter's cover letter attached to the protocol instructing you how to initiate this trial. If the proposed directions meet with your approval, please provide estimated research dates for the Master Timetable and sign the GLP Certification located on the cover letter. **Return the original signed copy of this letter to our office immediately.**

Enclosed please find **8** residue sample bags you will need for submitting the samples to the laboratory. Inside each notebook are small trial identification labels which are to be affixed to all pages of the Field Data Notebook. **We have on file your 2013 Standard Operating Procedures (SOP's). We expect any changes or updates to these will be reflected in your 2014 SOPs. Please submit your 2014 SOP revisions for review and approval to Stephen Flanagan.**

Thank you for agreeing to conduct this research. If you should have any further questions, please contact me at (530) 752-7634, email: rsisco@ucdavis.edu, Stephen Flanagan at (541) 688-3155, email: srflanagan@ucdavis.edu or Mika Tolson at (530) 752-7635, email: mptolson@ucdavis.edu.

Sincerely,

Rebecca Sisco

Rebecca (Becky) Sisco
Regional Field Coordinator
Western Region IR-4 Program
University of California
Dept. of Environmental Toxicology
One Shields Avenue, Meyer Hall Room 4218
Davis, CA 95616-8588
530-752-7634 (office)
530-752-2866 (fax)
Email: rsisco@ucdavis.edu

RS/jh
Enclosures

cc: Laura Van der Staay (via email)

KS 1/6/14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Part 3
Page: 3

The IR-4 Project
Pest Management Solutions for Specialty Crops and Minor Uses

IR-4 Headquarters
Rutgers, The State University of New Jersey
500 College Road East, Suite 201W
Princeton, NJ 08540
732.932.9575 fax 609.514.2612
www.ir4.rutgers.edu

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

TO: Keri Skiles

FROM: Deborah H. Carpenter

SUBJECT: Nitrapyrin/Lettuce (Leaf)

Field ID No: A2659.14-CA01

Thank you for agreeing to participate in the IR-4 Minor Use Research Program. We have assigned the above unique Field Identification Number for your phase of the study. Please use it on all correspondence, the IR-4 Raw Databook and other forms associated with this research. Please review your phase of the research protocol. **Note, this protocol may be different from prior versions**. Please provide estimated research dates for the Master Timetable and sign the GLP Certification below.

First Application of Test Pesticide:	TRT02 2/25/14 TRT03 3/12/14
Residue Samples Collected:	4/11/14
Samples Transferred to Analytical Laboratory:	4/15/14
Field Databook Completed by Field Research Director:	6/15/14

GLP Certification:

I acknowledge that I have reviewed, and understand, the material contained in Sections 1 to 24 of this IR-4 Protocol. The field research will be conducted in accordance with this protocol which reflects EPA's Good Laboratory Practice Standards. I further acknowledge that written Standard Operating Procedures that have been properly approved by IR-4 management are available. Additionally, I will cooperate with the independent Quality Assurance Unit in scheduling needed inspections and documenting corrective actions taken.

Keri Skiles 1/8/14
Field Research Director (Date)

Return the original signed copy of this letter to your Regional/ARS Field Research Coordinator. If you have any questions contact your Regional/ARS Field Research Coordinator or me (732) 932-9575 ext 4637 or the study director.

cc: Regional/ARS Field Research Coordinator
IR-4 Quality Assurance Unit (Field)

Major funding for IR-4 is provided by Special Research Grants and Hatch Act Funds from USDA-NIFA, in cooperation with the State Agricultural Experiment Stations, and USDA-ARS.

RUTGERS

Keri M Skiles

From: David Ennes
Sent: Wednesday, February 26, 2014 9:50 AM
To: lennon@aesop.rutgers.edu
Cc: leonard@aesop.rutgers.edu; Rebecca Sisco; Keri M Skiles
Subject: 11233.14-CA76 Etoxazole Sugarbeet and A2659.14-CA01 Nitrapyrin Lettuce

Grace and Ray: There will be a treated plot of mine 11256.14-CA63 Clopyralid Strawberry 20 feet away from the untreated plots for both of your trials. Do you see any problems with this orientation?

Thanks,
David

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Vb 2/26/14

Part 3
Page: 3

Keri M Skiles

From: Grace Lennon <lennon@AESOP.Rutgers.edu>
Sent: Wednesday, February 26, 2014 10:10 AM
To: David Ennes
Cc: 'leonard@aesop.rutgers.edu'; Rebecca Sisco; Keri M Skiles
Subject: RE: 11233.14-CA76 Etoxazole Sugarbeet and A2659.14-CA01 Nitrapyrin Lettuce

Hi David,

I see no problem with this set up for my Etoxazole study. Thanks for checking.

Grace

From: David Ennes [mailto:djennes@ucanr.edu]
Sent: Wednesday, February 26, 2014 12:50 PM
To: lennon@aesop.rutgers.edu
Cc: leonard@aesop.rutgers.edu; Rebecca Sisco; Keri M Skiles
Subject: 11233.14-CA76 Etoxazole Sugarbeet and A2659.14-CA01 Nitrapyrin Lettuce

Grace and Ray: There will be a treated plot of mine 11256.14-CA63 Clopyralid Strawberry 20 feet away from the untreated plots for both of your trials. Do you see any problems with this orientation?

Thanks,
David

b2b6/14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Part 3
Page: 6

Keri M Skiles

From: Ray Leonard <leonard@AESOP.Rutgers.edu>
Sent: Wednesday, February 26, 2014 10:19 AM
To: David Ennes; 'lennon@aesop.rutgers.edu'
Cc: Rebecca Sisco; Keri M Skiles
Subject: RE: 11233.14-CA76 Etoxazole Sugarbeet and A2659.14-CA01 Nitrapyrin Lettuce

Hi David:

I see no problem with this set up for my study either.

Ray

From: David Ennes [mailto:djennes@ucanr.edu]
Sent: Wednesday, February 26, 2014 12:50 PM
To: lennon@aesop.rutgers.edu
Cc: leonard@aesop.rutgers.edu; Rebecca Sisco; Keri M Skiles
Subject: 11233.14-CA76 Etoxazole Sugarbeet and A2659.14-CA01 Nitrapyrin Lettuce

Grace and Ray: There will be a treated plot of mine 11256.14-CA63 Clopyralid Strawberry 20 feet away from the untreated plots for both of your trials. Do you see any problems with this orientation?

Thanks,
David

2/26/14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Part 3
Page: 7

Keri M Skiles

From: Keri M Skiles
Sent: Monday, March 10, 2014 1:51 PM
To: 'Ray Leonard'
Cc: Rebecca Sisco; David Ennes
Subject: Trial ID A2659.14-CA01 Nitrapyrin/Lettuce Replanting

Ray,

Our first planting had poor emergence so we are replanting today or tomorrow. This will delay this trial another month. As soon as the trial is over I will get the notebook sent out ASAP.

Thanks,

Keri Skiles

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

3/10/14

Part 3
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Keri M Skiles

From: Ray Leonard <leonard@AESOP.Rutgers.edu>
Sent: Monday, March 10, 2014 2:40 PM
To: Keri M Skiles
Subject: Re: Trial ID A2659.14-CA01 Nitrapyrin/Lettuce Replanting

Ok Keri. Thanks for letting me know. Ray

On Mar 10, 2014, at 4:50 PM, Keri M Skiles <kmskiles@ucanr.edu> wrote:

> Ray,
>
> Our first planting had poor emergence so we are replanting today or tomorrow. This will delay this trial another month. As soon as the trial is over I will get the notebook sent out ASAP.
>
> Thanks,
>
> Keri Skiles

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

VS 3/10/14

Part 3
Page: 9

University of California Kearney Agricultural Research and Ext. IR-4 Program
9240 S. Riverbend **Telephone (559) 646-6061**
Parlier, California 93648 **Facsimile (559) 646-6015**

FACSIMILE TRANSMISSION

Total Pages Sent: 3

DATE	June 5, 2014
TO	_X_ Study Director: Ray Leonard Company: IR-4 Headquarters FAX No: (609) 514-2612 _X_ Regional/ARS Field Research Coordinator: Becky Sisco Company: Western Region IR-4 FAX No: (530) 752-2866 _X_ Receiving Laboratory: Univ. of California Attention: Bronson Hung FAX No: (530)752-5857 ___ Other: Nitrapyrin / Lettuce FAX No: ID No. A2659.14-CA01 Skiles
FROM	Keri Skiles
STUDY NO.	A2659.14-CA01 Nitrapyrin/Lettuce

Notification of the following study related event(s) is either attached or reported below:

_X_ Sample Shipment (Shipment Date): June 5, 2014 KS 6/5/14

Shipment Information (if not attached):

Destination: Univ. of California Davis

Courier: ACDS Bill of Lading Nos: 137660

No. of Boxes: 3 Sample Description(s)/Interval: Leaf Lettuce/TRT02-45 DALA and TRT 03-32 DALA

Other information: See following forms Part 8A and 8B

Part 3
Page: 10

KF 7/29/14

From: **Keri M Skiles** kmskiles@ucanr.edu
Subject: RE: Nitrapyrin/Lettuce (A2659.14-CA01)
Date: July 21, 2014 at 4:05 PM
To: **Feist household** feistfour@gmail.com
Cc: **Rebecca Sisco** rsisco@ucdavis.edu, **Ray Leonard** leonard@aesop.rutgers.edu, **Stephen Flanagan** srflanagan@ucdavis.edu

Kathy,

Sorry I got this done late in the day. If you have any questions please let me know!

Thanks,

Keri Skiles

Part 3 page 10a

Nirapyrin/Lettuce

A2659.14-CA01

(1)

Field Trial ID	TRT Area Length (Feet)	Row / Bed Width (Feet)	# of Rows or Beds	Treated Area (Sq.Ft.)	Total PassTime (Sec)	Volume of form. Used (mL)	Vol. of Carrier (mL)	Volume of Adjuvant (mL)	Total Mix. Vol. (mL)	Boom Discharge Rate (mL/sec)	Calc. Del. Rate (mL/A)	Calc. Del. Rate (gal/A)	form/ Acre (gal/A)	Conc. of Form (lb ai/gal)	Actual Rate (lb ai/A)	Protocol Rate (lb ai/A)	% Dev.
Calculations				**B3*C3*D3**					**H3+G3+I3**		**((K3*F3)/ E3)*43560**	**L3/3785**	**(M3*G3)/J3**		**O3*N3**		**((P3-Q3)/ Q3)*100**
Test	100	3.17	1	317	22.2	15.6	1230	0	1245.6	36	109820.7	29.0147	0.36338	4	1.454	1.5	-3
TRT02	80	5	4	1600	221.39	101.1	2899	0	3000.1	5	30136.71	7.96214	0.26832	1.85	0.496	0.5	-1
TRT03	80	5	4	1600	220.9	100.8	2899	0	2999.8	5.08	30551.13	8.07163	0.27122	1.85	0.502	0.5	0

(1) The GPA Rate was based on the actual area treated (320 ft²). The test substance application rate was based on the full plot area of 1600 ft². See below for GPA Rate calculations:

TRT 02

221.39 sec × 5 ml/sec = 1106.95 mls carrier applied to plot (320 ft²)

$$\frac{1106.95 \text{ mls} \times 43{,}560 \text{ ft}^2/\text{A}}{320 \text{ ft}^2} = \frac{150{,}683.57 \text{ mls/Acre}}{3785 \text{ ml/Gal}} = \boxed{39.81 \text{ GPA}}$$

0.007354

TRT 03

220.9 sec × 5.08 ml/sec = 1122.17 mls carrier applied to plot

$$\frac{1122.17 \text{ ml} \times 43{,}560 \text{ ft}^2/\text{A}}{320 \text{ ft}^2} = \frac{152{,}755.39 \text{ mls/Acre}}{3785 \text{ ml/Gal}} = \boxed{40.36 \text{ GPA}}$$

Part 3 page 102

Test Substance

Part 4

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 4. TEST SUBSTANCE RECORDS

A. RECEIPT, STORAGE AND DISPOSITION OF TEST SUBSTANCE--*INSTRUCTIONS:*
*Complete a separate form for **each different** batch/lot of test substance that has been received.*

NAME OF TEST SUBSTANCE ON CONTAINER LABEL *E.g. Darnitall 2 EC or GroundUp or XYZ8-0.*	TSN 305177		
BATCH/LOT NO.	ENBK-137873-005	DATE OF RECEIPT	1-2-14
Provide the batch/lot number of the test substance as it appears on the test material container label		TEST SUBSTANCE EXPIRATION DATE	4-4-2015
Do not assign an expiration date if none is provided with the test substance—contact the Study Director.			
SOURCE OF EXPIRATION DATE	test substance container		
Note the source of the expiration date of the test substance (e.g., expiration date noted on test material container label, expiration date listed on documentation provided by manufacturer, expiration date obtained by IR-4 Headquarters)			

CARRIER THAT TRANSPORTED TEST SUBSTANCE	UPS ground		
INDIVIDUAL WHO RECEIVED TEST SUBSTANCE	Keri Skiles		
WAS A BILL OF LADING/WAYBILL RECEIVED?	YES___ NO X		
BILL OF LADING/WAYBILL/TRACKING NO. *Insert true copy if a Bill of Lading or Waybill was included in the shipment*	No 1/2/14		
APPROXIMATE AMOUNT RECEIVED	300 m/s	NUMBER OF CONTAINERS	1
CONTAINER DESCRIPTION (*glass bottles, water soluble packets, etc.*)	Plastic Amber bottle		
CONDITION OF CONTAINER ON ARRIVAL *(intact, bags broken, etc.)*	Good - Intact		
GLP STATUS KNOWN AT TIME OF RECEIPT *(Check YES if the documentation provided by the manufacturer or information on the test material container claims that the test substance has been characterized per GLP requirements. If NO is checked, contact the Study Director.)*	YES X NO___		
IF "NO", ENTER THE DATE THAT THE STUDY DIRECTOR WAS INFORMED	No 1/2/14		
IF "YES", SOURCE OF GLP STATUS INFORMATION	COA received with paperwork		
Label, shipping form, etc. Insert the Certificate of Analysis (COA) in this FDB Part if a COA has been received. It is not necessary to insert the MSDS in this FDB. Two-sided documents should not be inserted.			

STORAGE LOCATION	UCKARE Bldg 117 Room 11 IR-4 locker		
Provide the location (building name, cabinet numbers, etc.) where the test substance will be stored during the trial.			
WAS THE TEST SUBSTANCE HELD TEMPORARILY* IN ANOTHER LOCATION PRIOR TO TRANSFER TO ITS LONG-TERM STORAGE LOCATION DURING THE FIELD TRIAL?	YES___ NO X		
**Temperature monitoring should begin within 2 days of receipt of the test substance, regardless of where it is held or stored.*			
IF YES, ENTER LOCATION	No 1/2/14		
DATES		ESTIMATED TEMPERATURE prior to monitoring	

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 1/2/14

Total number of pages in this section at initial pagination: 32

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE_____

Dow AgroSciences Test Substance Distribution Certificate

Sample Number: TSN305177

Lot Number: ENBK-137873-005

Original Receipt Date: 21 Mar 2013

Recertification Date: 04 Apr 2015

Destination Container Label: GF-3181

Source Ctnr Barcode ID: 000365810

Decanted Ctnr Barcode IDs: 000402882

Sample Use: End Use Product

Storage Location: 303,GLP Chemical Ambient

Storage Condition: 5 deg C to Ambient

Physical State: Liquid

Location Comments: 47 LITRES (FIVE 2.5 GALLON JUGS) OF MATERIAL TRANSFERRED FROM STOCK TO GLP PER RAY BOUCHER.

Last Assay: 12 Apr 2013
FAPC13-000205

Study Director: Jonathan Sauer
Decanted Barcode ID: 000368687
Reported Formulation Composition: 192 g/L Nitrapyrin

Recipient: Keri Skiles

Destination: 9240 South Riverbend Ave.
Parlier, CA 93648
United States

Date Requested: 19 Dec 2013

Total Amount Requested: 300 mL x 1 = 300 mL

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Part
Page: 2 4

From Test Substance Coordinator

Balance ID: NA

Sampled By: Margaret Kreye 12/19/13

Recipient: Keri Skiles ~~12/20/13~~ 1/2/14
Verify Date 1/2/14

REPORT **REPORT NUMBER** FAPC13-000205

CERTIFICATE OF ANALYSIS FOR TEST/REFERENCE/CONTROL SUBSTANCES

TITLE OBJECTIVE: Determination of purity and/or identity of the following test/reference/control substance for use in a study.

TEST/REFERENCE/CONTROL SUBSTANCE:

TEST SUBSTANCE NUMBER:	TSN305177		
LOT NO:	ENBK-137873-005		
DESCRIPTION:	GF-3181 End Use Product		
REFERENCE SUBSTANCE(S) USED:	TSN003679-0002	**PURITY:**	99.6%

INITIATION DATE: 04 April 2013

METHODS USED:

PURITY:	IDENTIFICATION:
GC, Density	Retention Time

RESULTS and CONCLUSIONS:

X **INITIAL DETERMINATION:**
192 g/L Nitrapyrin

X **IDENTITY:**
The retention time of the sample component as consistent with the retention time of the analytical standard.

X **OTHER:**
Density: 1.1178 g/mL @ 20°C, 17.2% w/w Nitrapyrin

4/1/2014

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

RE-CERTIFICATION DATE: 04 April 2015

CALCULATIONS:

Area Normalized: N/A Internal Standard: X External Standard: N/A

Other (explain): g/L = % w/w x Density x 10

STUDY DIRECTOR SIGNATURE:

Jonathan Sauer

STUDY COMPLETION DATE: 12-April-2013

PEER REVIEWER SIGNATURE: Michelle Smith

DATE: 4/11/2013

Sponsor and Testing Facility Address:
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

All raw data and retainer samples associated with this study will be archived in the testing facility archive. Only descriptive statistics were used unless otherwise noted in the results. This study was conducted in accordance with the Good Laboratory Practice Standard, 40 CFR Part 160.135 (b) unless otherwise noted.

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TEST SUBSTANCE TRACKING FORM

Chemical Name: GF-3181

Protocol No.: PR-A2659

Experiment No.: A2659.14

Source Barcode ID: 000365810
Sample Number: TSN305177
Formulation: GF-3181

Lot Number: ENBK-137873-005

Shipped from: Dow AgroSciences LLC, 304 Building, Indianapolis, IN 46268

Keri Skiles
Kearney Agricultural Research & Ext. Center KARE)
Parlier CA 93648
United States
559 646-6061 Cell 559-310-4093

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Shiped via (Check one): FedEx ☐ UPS ☑

Date Shipped O/B: 12/19/2013 **Approximate Amount Shipped:** 300 mL

Signature of recipient: Keri Skiles Date Received: ~~12/20/13~~ 1/2/14 wrong date 1/2/14

1/2/14 KD ~~12/20/13~~

Returned from:

Name: _____

Company: _____

Address: _____ 6/12/14

Shiped via (Check one): FedEx ☐ UPS ☐

Shipping Bill Number: _____

Date Shipped: _____ **Approximate Amount Shipped:** _____

Signature of sender: _____ Date: _____

Signature of recipient: _____ Date: _____
(Dow Agro Sciences Representative)

ADD A COPY OF THIS COMPLETED FORM TO THE FIELD DATABOOK AND KEEP THE ORIGINAL COPY WITH THE TEST SUBSTANCE.

SHIP TO: Dow AgroSciences LLC
ATTN: Kent Hensley
9330 Zionsville Road - Building 304
Indianapolis, IN 46268-1053

Call Sample Coordinator for packaging and shipping instructions at (317) 337-4955 - Fax (317) 337-7922

This is an exact copy of the original
Original in UCKARE records
Initials: KD Date: 6/12/14

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Dow AgroSciences LLC
9330 Zionsville Road, Bldg. 304
Indianapolis, IN 46268-1054

Dow AgroSciences

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Keri Skiles
Kearney Agricultural Research & Ext. Center KARE)
9240 South Riverbend Ave.
Parlier, CA 93648
United States
559 646-6061 Cell 559-310-4093

TEST SUBSTANCE CONTAINERS

Due to the interpretation by EPA concerning the retention of Test Substance containers, we must have every test substance container returned to Dow AgroSciences for storage until the final report is completed. It is the intent of these regulations that all GLP sample containers be maintained with the appropriate chain of custody, under controlled environmental conditions, until the conclusion of the study. This includes empty containers or containers with any remaining chemical after the treatment(s) have been completed.

IR-4 Cooperators may retain sample containers themselves until completion of the study, as long as proper chain of custody procedures is maintained. If you wish to return them to Dow AgroSciences, you may do so. Following completion of the study, and upon notification by the study director, GLP samples and sample containers may be properly disposed of either by cooperators if they have the facilities to do so, or they may be returned to Dow AgroSciences.

Please return the original container(s) to:

Kent Hensley
Dow AgroSciences
9330 Zionsville Road
Building 304
Indianapolis, IN 46268
Phone: (317) 337-4955

Vol 1/2/14

If you have any questions regarding shipment of your container(s), feel free to contact me at the phone number listed above.

Thank you for your help to comply with this GLP requirement.

Regards,

Kent Hensley
R&D Sample Coordinator

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STRAIGHT BILL OF LADING - SHORT FORM - ORIGINAL - Not Negotiable

RECEIVED, subject to the classification and lawfully filed tariffs in effect on the date of the issue of this Bill of Lading the property described below in apparent good order, subject to all the terms and conditions of the Domestics Bill of Lading set forth in the classification or tariff which governs the transportation of the shipment.

		FOR CHEMICAL EMERGENCY Spill, Leak, Fire Exposure or Accident 800-992-5994 Day or Night
Cosigned To and Destination Keri Skiles Kearney Agricultural Research & Ext. Center KARE) 9240 South Riverbend Ave. Parlier, CA 93648 United States	Shipment No. (B/L No.) 13-654239 Date Shipped 19.Dec.2013	
	Subject to Section 7 DOW AGROSCIENCES LLC Signature of Consignor	Vehicle Initials & No.
Route UPS - Ground		
At INDIANAPOLIS, IN USA		
Customer's Order No. 010-16-YF-82360000	Requested Delivery Date 02.Jan.2014	
Where the rates on any of the items listed below are dependent on released value, the agreed value of the property is hereby specifically stated by the shipper to be the released value per article or per distribution package that results in the lower transportation charges unless otherwise specified hereon.	CHARGES ARE TO BE: PREPAID	

HM	Kind of Package, Description of Materials, Special Marks, and Exceptions	Shipping Weight
	300 mL GF-3181 [TSN305177] NON-RESTRICTED	

V5 4/2/14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

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REQUESTOR: Cathy Galvin

* INDICATES A TRADEMARK OF DOW AGROSCIENCES

The correct weight is as shown above subject to verification in accordance with any applicable agreement with carriers or their authorized agents.

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to the applicable international and national government regulations.

Carrier Agrees They Have the DOT ERG ____
or Were Tendered Emergency Response Information ____

Name of Carrier

Shipper DOW AGROSCIENCES LLC
9330 ZIONSVILLE RD
INDIANAPOLIS, IN USA

Per STEVE HUTTON

Agent: _____

Per: _____

AGENT MUST DETACH AND RETAIN THIS SHIPPING ORDER AND MUST
SIGN THE ORIGINAL BILL OF LADING - EXPRESS SHIPPING CONTRACT

Specimen Label

Dow AgroSciences

Instinct®

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Nitrogen Stabilizer

®Trademark of Dow AgroSciences LLC

B 4/4/14

Use to delay nitrification of ammoniacal and urea nitrogen fertilizer compositions in the soil by controlling the nitrification process.

Active Ingredient:	
nitrapyrin: 2-chloro-6-(trichloromethyl) pyridine	17.67%
Other Ingredients	82.33%
Total	100.00%

Contains petroleum distillates
Contains 1.85 lb of active ingredients per gallon.

Precautionary Statements

Hazards to Humans and Domestic Animals

EPA Reg. No. 62719-583

Note to Physician: May pose an aspiration pneumonia hazard. Contains petroleum distillate.

Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are barrier laminate and viton ≥14 mils. If you want more options, follow the instructions for category G on an EPA chemical resistance category selection chart.

Mixers, loaders, applicators and other handlers must wear:

- Coveralls worn over short-sleeved shirt and short pants
- Chemical-resistant gloves
- Chemical-resistant footwear plus socks
- When mixing and loading, or cleaning equipment, wear a chemical-resistant apron

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

First Aid (Cont.)

Note: Contains petroleum distillate – vomiting may cause aspiration pneumonia.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Environmental Hazards

This pesticide is toxic to oysters/shrimp. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate.

This product may contaminate water through runoff. This product has a high potential for runoff for several weeks after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product.

A level well-maintained vegetative buffer strip between areas to which this product is applied and surface water such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment, restricted-entry interval, and notification to workers (as applicable). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

Exception: If the product is soil-injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

For early entry into treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, wear:

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks
- Protective eyewear

Storage and Disposal

Do not contaminate water, food, or feed by storage and disposal.
Pesticide Storage: Do not freeze.
Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Nonrefillable containers 5 gallons or less:
Container Handling: Nonrefillable container. Do not reuse or refill this container.
Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or

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Storage and Disposal (Cont.)

disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Refillable containers 5 gallons or larger:
Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Nonrefillable containers 5 gallons or larger:
Container Handling: Nonrefillable container. Do not reuse or refill this container.
Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Product Information

5/4/14

Instinct® nitrogen stabilizer is a water-based microencapsulated formulation of nitrapyrin that may be used in the application of aqua ammonia, other liquid ammoniacal or urea nitrogen fertilizer compositions such as 28%, 30% or 32% UAN. Instinct is not a substitute for fertilizer.

Instinct may be mixed with liquid fertilizer, insecticides, herbicides and/or water and applied as a preplant incorporated or preemergence (pre to corn), or postplant, application. Incorporation may occur at any time up to 10 days after application and may be either by mechanical means or by moisture (rainfall or overhead irrigation). For moisture incorporation, a minimum of 0.5 inch of moisture is necessary. If 0.5 inch of moisture does not occur within the 10-day window, incorporate mechanically with light tillage.

The best manure management practice is to inject liquid manure, but surface applications are also permitted.

Precautions and Restrictions

Instinct is no more corrosive to standard liquid fertilizer equipment than liquid fertilizer alone.

Chemigation: Do not apply this product through any type of irrigation system.

Mixing Directions

Liquid Fertilizers
Instinct may be mixed with liquid fertilizers, such as aqua ammonia or other liquid ammoniacal or urea nitrogen fertilizers. Instinct can be added to urea ammonium nitrate liquid fertilizer without a compatability agent, although when mixing Instinct with fertilizer plus herbicides or insecticides, a jar test may indicate that a compatability agent is needed.

There are two methods which may be used to create a stable emulsion with Instinct plus a compatability agent in liquid fertilizer:

Premix Method: The compatibility agent and Instinct may be mixed together in a separate container and then added to the liquid fertilizer. Continuously agitate as the mixture is added to the fertilizer.

Sequential Method: The compatibility agent may be added to the fertilizer and thoroughly agitated. While the agitation continues, the required amount of Instinct may be added to the tank.

Most phosphate ester types of compatibility agents are suitable for use in these mixtures. Follow the label directions for the compatibility agent to determine rates and any use precautions.

Liquid Manure
Use Instinct at the rate of 35 to 70 fl oz per acre. Use the 70 fl oz per acre rate for all fall applications with animal manure. To ensure uniform mixing, Instinct may need to be premixed with a phosphate ester compatibility agent at a ratio of 1 part phosphate ester compatibility agent to 8 parts Instinct before adding Instinct to the liquid animal manure.

Granular Ammonium and Urea
Instinct may be impregnated on urea and most dry ammoniacal fertilizers or fertilizer blends containing ammoniacal fertilizers. Uniform application in the field is necessary to insure optimum results.

Various equipment can be used to impregnate Instinct onto dry fertilizers, including vertical and horizontal mixers. Once impregnated, fertilizer may be applied with either spinner, airflow, or other suitable equipment. Apply Instinct at a rate of 35 fl oz per acre. Use a minimum of 100 lb of dry fertilizer per acre. With lower rates of fertilizer (higher concentrations of Instinct), the fertilizer may not readily absorb all of the liquid. For a suitable free-flowing mixture, add a drying agent, such as Hi-Sil 233, MP-79, RVM or LVM clay granules, or pelletized limestone to the mixture. Use 1 lb of drying agent per pint of Instinct unless experience indicates a different amount works well. Do not apply more than 1 lb ai nitrapyrin per acre per year.

Immediately apply bulk fertilizers impregnated with Instinct. Do not store the impregnated fertilizer. All individual state regulations, including those related to dry bulk blending registration, labeling and application, are the responsibility of the individual and/or company selling mixtures of Instinct and fertilizer.

Do not mix seed with dry fertilizers impregnated with Instinct.

Tank Mixing
Instinct may also be applied in tank mixtures with preplant incorporated or preemergence herbicides or insecticides registered for use on corn. The tank mixes may be in water or in most urea-ammonium nitrate solutions, N-P-K solutions, slurries, or suspensions. Check the physical compatibility of these mixtures as indicated below. Maintain constant agitation during both mixing and application to ensure uniformity of the spray mixture. Read and carefully follow all applicable directions including dosage rates, restrictions, and precautions on labeling for the other products used in combination with Instinct.

For best results, add the herbicide(s) to the tank after Instinct and the compatibility agent (if used) have been thoroughly mixed. Add wettable powders or flowables before emulsifiable concentrates. Continuously agitate during the mixing cycle.

Tank Mix Compatibility Test: To test the compatibility of Instinct with liquid fertilizers and/or herbicide or insecticide mixes, add proportionate amounts of each ingredient to a small jar, cap, shake, and let stand for 15 minutes. Formation of precipitates or layers that do not readily redisperse indicates an incompatible mixture and should not be used.

Corn

Preplant, Preemergence, At-Plant Row or Band Injection Application
Use Instinct at the rate of 35 fl oz per acre.

Liquid Manure: Use Instinct at the rate of 70 fl oz per acre when fall applied with liquid manure or a minimum of 35 fl oz per acre when applied with liquid manure in the spring. Applying Instinct with liquid manure in the spring is limited to a preplant application only.

Restrictions:
- Do not apply more than a total of 70 fl oz of Instinct (1 lb ai nitrapyrin) per acre per year on corn.
- **Replant restriction:** Crops listed on this label, other cereals, oilseed crops (including soybeans), and leafy vegetables, may be rotated 120 days from the last application. All other crops are not to be rotated in less than one year after the last application.
- An enclosed cab must be used for groundboom application to corn.

Postplant (Side Dress) Application
Apply 18 to 35 fl oz of Instinct per acre after corn emergence.
The application may be injected, dribbled, or applied as a band with sidedress liquid fertilizer. Instinct may also be impregnated onto dry fertilizer and applied.

Restrictions:
- Any postplant application of Instinct must be applied prior to V6 stage of growth.
- Do not apply more than a total of 70 fl oz of Instinct (1 lb ai nitrapyrin) per acre per year on corn.

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- **Replant restriction:** Crops listed on this label, other cereals, oilseed crops (including soybeans), and leafy vegetables, may be rotated 120 days from the last application. All other crops are not to be rotated in less than one year after the last application.

Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. Otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies.

Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. All such risks shall be assumed by buyer.

Limitation of Remedies

To the extent permitted by law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used

Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. In no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

Label Code: D02-370-002
Replaces Code: D02-370-001
LOES Number: 010-02207

EPA accepted 02/09/12

Revisions:

1. Added use directions for postplant (side dress) application.

B 4/4/14

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Skiles

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Research Sample Safety Data Sheet

Dow AgroSciences LLC

Product Name: GF-3181

Issue Date: 04/01/2013
Print Date: 07 May 2013

Dow AgroSciences LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name
GF-3181

6 1/2/14

COMPANY IDENTIFICATION
Dow AgroSciences LLC
A Subsidiary of The Dow Chemical Company
9330 Zionsville Road
Indianapolis, IN 46268-1189
United States

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Customer Information Number: 800-992-5994
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 800-992-5994
Local Emergency Contact: 352-323-3500

2. Hazards Identification

Emergency Overview

Color: Tan
Physical State: Liquid.
Odor: Mild
Hazards of product:

CAUTION! May cause eye irritation. May cause skin irritation. May be harmful if inhaled. Isolate area. Keep upwind of spill. Toxic fumes may be released in fire situations. Suspect cancer hazard. May cause cancer.

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: May cause moderate eye irritation. Corneal injury is unlikely.
Skin Contact: Brief contact may cause moderate skin irritation with local redness.
Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

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Inhalation: Prolonged excessive exposure may cause adverse effects. Based on the available data, respiratory irritation was not observed.
Ingestion: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
Aspiration hazard: Based on physical properties, not likely to be an aspiration hazard.
Effects of Repeated Exposure: For the active ingredient(s): In animals, effects have been reported on the following organs: Blood. Kidney. Liver. Female reproductive organs. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use. Based on information for component(s): In animals, effects have been reported on the following organs: Lung. Gastrointestinal tract. Thyroid. Urinary tract. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use. In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.
Cancer Information: For the active ingredient(s): Kidney effects and/or tumors have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans. For the minor component(s): Has caused cancer in some laboratory animals. In humans, there is limited evidence of cancer in workers involved in naphthalene production. Limited oral studies in rats were negative.
Birth Defects/Developmental Effects: For the active ingredient(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

6/6/14

3. Composition Information

Component	CAS #	Amount
Nitrapyrin	1929-82-4	17.67 %
Solvent naphtha (petroleum), heavy aromatic	64742-94-5	18.8 %
Propylene glycol	57-55-6	8.0 %
Naphthalene	91-20-3	0.1 %
Balance	Not available	55.43 %

4. First-aid measures

Description of first aid measures
General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.
Skin Contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Eye Contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be available in work area.
Ingestion: No emergency medical treatment necessary.
Most important symptoms and effects, both acute and delayed
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.
Indication of immediate medical attention and special treatment needed
No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

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5. Fire Fighting Measures

Suitable extinguishing media

To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

V5/12/14

Special hazards arising from the substance or mixture

Hazardous Combustion Products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn. Container may rupture from gas generation in a fire situation.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep upwind of spill. Ventilate area of leak or spill. Refer to Section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

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7. Handling and Storage

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Handling

General Handling: Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Storage

Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Nitrapyrin	ACGIH	TWA	10 mg/m3
	ACGIH	STEL	20 mg/m3
	OSHA Table Z-1	PEL Respirable fraction.	5 mg/m3
	OSHA Table Z-1	PEL Total dust.	15 mg/m3
Propylene glycol	WEEL	TWA Aerosol.	10 mg/m3
Naphthalene	ACGIH	TWA	10 ppm SKIN
	ACGIH	STEL	15 ppm SKIN
	OSHA Table Z-1	PEL	50 mg/m3 10 ppm

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.
A "skin" notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.
It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

Personal Protection

Eye/Face Protection: Use chemical goggles.
Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Styrene/butadiene rubber. Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

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Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

9. Physical and Chemical Properties

Appearance	
Physical State	Liquid.
Color	Tan
Odor	Mild
Odor Threshold	No test data available
pH	8 (@ 1 %) *pH Electrode*
Melting Point	Not applicable
Freezing Point	No test data available
Boiling Point (760 mmHg)	No test data available.
Flash Point - Closed Cup	> 100 °C (> 212 °F) *Pensky-Martens Closed Cup ASTM D 93*
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammable Limits In Air	**Lower**: No test data available **Upper**: No test data available
Vapor Pressure	No test data available
Vapor Density (air = 1)	No test data available
Specific Gravity (H2O = 1)	No test data available
Solubility in water (by weight)	No test data available
Partition coefficient, n-octanol/water (log Pow)	No data available for this product. See Section 12 for individual component data.
Autoignition Temperature	No test data available
Decomposition Temperature	No test data available
Dynamic Viscosity	103 mPa.s @ 40 °C *OECD 114*
Explosive properties	no data available
Oxidizing properties	no data available
Liquid Density	1.12 g/ml @ 20 °C *Digital density meter*

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10. Stability and Reactivity

Reactivity

No dangerous reaction known under conditions of normal use.

Chemical stability

Unstable at elevated temperatures.

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Possibility of hazardous reactions

Polymerization will not occur.

Conditions to Avoid: Some components of this product can decompose at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials: Avoid contact with: Acids. Oxidizers. Avoid contact with metals such as: Aluminum. Aluminum alloys. Magnesium. Magnesium alloys.

Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Hydrogen chloride. Nitrogen oxides. Toxic gases are released during decomposition.

11. Toxicological Information

Acute Toxicity

Ingestion
As product: Single dose oral LD50 has not been determined.
For similar material(s): Estimated. LD50, > 5,000 mg/kg

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Dermal
As product: The dermal LD50 has not been determined.
For similar material(s): Estimated. LD50, > 5,000 mg/kg

Inhalation
As product: The LC50 has not been determined.
For similar material(s): LC50, 4 h, Aerosol, rat, male and female > 3.51 mg/l
Maximum attainable concentration. No deaths occurred at this concentration.

Eye damage/eye irritation
May cause moderate eye irritation. Corneal injury is unlikely.

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Skin corrosion/irritation
Brief contact may cause moderate skin irritation with local redness.

Sensitization

Skin
For similar material(s): Did not demonstrate the potential for contact allergy in mice.

Respiratory
No relevant data found.

Repeated Dose Toxicity
For the active ingredient(s): In animals, effects have been reported on the following organs: Blood. Kidney. Liver. Female reproductive organs. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use. Based on information for component(s): In animals, effects have been reported on the following organs: Lung. Gastrointestinal tract. Thyroid. Urinary tract. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use. In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

Chronic Toxicity and Carcinogenicity
For the active ingredient(s): Kidney effects and/or tumors have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans. For the minor component(s): Has caused cancer in some laboratory animals. In humans, there is limited evidence of cancer in workers involved in naphthalene production. Limited oral studies in rats were negative.

Carcinogenicity Classifications:

Component	List	Classification
Naphthalene	IARC	Possibly carcinogenic to humans.; 2B
	NTP	Anticipated carcinogen.

Developmental Toxicity
For the active ingredient(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

Reproductive Toxicity
For the active ingredient(s): In animal studies, did not interfere with reproduction.

Genetic Toxicology
For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. Ecological Information

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Toxicity

Data for Component: **Nitrapyrin**

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested). Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg). Material is slightly toxic to birds on a dietary basis (LC50 between 1001 and 5000 ppm).

Fish Acute & Prolonged Toxicity
LC50, Lepomis macrochirus (Bluegill sunfish), static test, 96 h: 3.4 - 7.9 mg/l
LC50, rainbow trout (Oncorhynchus mykiss), static test, 96 h: 4 mg/l
Aquatic Invertebrate Acute Toxicity
EC50, eastern oyster (Crassostrea virginica), flow-through test, 96 h, shell growth inhibition: 1.8 mg/l
LC50, Daphnia magna (Water flea), flow-through test, 48 h, mortality: 2.2 mg/l
Aquatic Plant Toxicity
ErC50, Pseudokirchneriella subcapitata (green algae), Growth rate inhibition, 72 h: 1.7 mg/l
Fish Chronic Toxicity Value (ChV)
fathead minnow (Pimephales promelas), 34 d, NOEC:2.87 mg/l
Toxicity to Above Ground Organisms
oral LD50, Anas platyrhynchos (Mallard duck): 2708 mg/kg bodyweight.
dietary LC50, Anas platyrhynchos (Mallard duck): 1466 mg/kg diet.
dietary LC50, Coturnix japonica (Japanese quail): 820 mg/kg diet.
Toxicity to Soil Dwelling Organisms
LC50, Eisenia fetida (earthworms), 15 d: 209 mg/kg

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Data for Component: **Solvent naphtha (petroleum), heavy aromatic**

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested). Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm). Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

Fish Acute & Prolonged Toxicity
LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 h: 2.34 mg/l
Aquatic Invertebrate Acute Toxicity
EC50, Daphnia magna (Water flea), semi-static test, 48 h, immobilization: 0.95 mg/l
Aquatic Invertebrates Chronic Toxicity Value
Daphnia pulex (Water flea), 21 d, mortality, NOEC: 5.2 mg/l
Toxicity to Above Ground Organisms
dietary LC50, Colinus virginianus (Bobwhite quail): > 6500 mg/kg diet.
oral LD50, Colinus virginianus (Bobwhite quail): > 2250 mg/kg bodyweight.

Data for Component: **Propylene glycol**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity
LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 h: 40,613 mg/l
Aquatic Invertebrate Acute Toxicity
LC50, Ceriodaphnia Dubia (water flea), static test, 48 h: 18,340 mg/l
Aquatic Plant Toxicity
ErC50, Pseudokirchneriella subcapitata (green algae), Growth rate inhibition, 96 h: 19,000 mg/l
Toxicity to Micro-organisms
EC50, activated sludge test (OECD 209), Respiration inhibition, 3 h: > 1,000 mg/l
Aquatic Invertebrates Chronic Toxicity Value
Ceriodaphnia Dubia (water flea), semi-static test, 7 d, number of offspring, NOEC: 13020 mg/l

Data for Component: **Naphthalene**

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity
LC50, Oncorhynchus mykiss (rainbow trout), 96 h: 0.11 mg/l
Aquatic Invertebrate Acute Toxicity
EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: 1.6 - 24.1 mg/l
Fish Chronic Toxicity Value (ChV)
Other, flow-through test, 40 d, mortality, NOEC, NOEC:0.37 mg/l

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Data for Component: **Balance**

No relevant data found.

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Persistence and Degradability

Data for Component: **Nitrapyrin**

Chemical degradation (hydrolysis) is expected in the environment within days to weeks.
Degradation is expected in the soil environment within days to weeks.

Stability in Water (1/2-life):

186 h; 25 °C; pH 5;hydrolysis
173 - 233 h; 25 °C; pH 7;hydrolysis
129 h; 25 °C; pH 9;hydrolysis

Theoretical Oxygen Demand: 0.97 mg/mg

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Data for Component: **Solvent naphtha (petroleum), heavy aromatic**

Biodegradation may occur under aerobic conditions (in the presence of oxygen). Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
30 - 41 %	28 d	OECD 301D Test	fail

Data for Component: **Propylene glycol**

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
81 %	28 d	OECD 301F Test	pass
96 %	64 d	OECD 306 Test	Not applicable

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
1.28E-11 cm3/s	10 h	Estimated.

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
69.0 %	70.0 %	86.0 %	

Chemical Oxygen Demand: 1.53 mg/mg
Theoretical Oxygen Demand: 1.68 mg/mg

Data for Component: **Naphthalene**

Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%).

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
2.16E-11 cm3/s	5.9 h	Estimated.

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
57.000 %	71.000 %	71.000 %	

Theoretical Oxygen Demand: 3.00 mg/mg

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Data for Component: **Balance**

No relevant data found.

Bioaccumulative potential

Data for Component: **Nitrapyrin**

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient, n-octanol/water (log Pow): 3.324 Measured
Bioconcentration Factor (BCF): < 85; Lepomis macrochirus (Bluegill sunfish); Measured

Data for Component: **Solvent naphtha (petroleum), heavy aromatic**
Bioaccumulation: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).
Partition coefficient, n-octanol/water (log Pow): 2.9 - 6.1 Measured
Bioconcentration Factor (BCF): 61 - 159; Fish

Data for Component: **Propylene glycol**
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient, n-octanol/water (log Pow): -1.07 Measured
Bioconcentration Factor (BCF): 0.09; Estimated.

Data for Component: **Naphthalene**
Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient, n-octanol/water (log Pow): 3.3 Measured
Bioconcentration Factor (BCF): 40 - 300; Fish; Measured

Data for Component: **Balance**
Bioaccumulation: No relevant data found.

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Mobility in soil

Data for Component: **Nitrapyrin**
Mobility in soil: Potential for mobility in soil is medium (Koc between 150 and 500).
Partition coefficient, soil organic carbon/water (Koc): 321 Measured
Henry's Law Constant (H): 1.4E-05 Pa*m3/mole.

Data for Component: **Solvent naphtha (petroleum), heavy aromatic**
Mobility in soil: No data available.

Data for Component: **Propylene glycol**
Mobility in soil: Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process., Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient, soil organic carbon/water (Koc): < 1 Estimated.
Henry's Law Constant (H): 1.2E-08 atm*m3/mole Measured

Data for Component: **Naphthalene**
Mobility in soil: Potential for mobility in soil is medium (Koc between 150 and 500).
Partition coefficient, soil organic carbon/water (Koc): 240 - 1,300 Measured
Henry's Law Constant (H): 2.92E-04 - 5.53E-04 atm*m3/mole; 25 °C Measured
Distribution in Environment: Mackay Level 1 Fugacity Model:

Air	Water.	Biota	Soil	Sediment
74 %	8.5 %	< 0.01 %	18 %	0.39 %

Data for Component: **Balance**
Mobility in soil: No relevant data found.

13. Disposal Considerations

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

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14. Transport Information

DOT Non-Bulk
NOT REGULATED

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DOT Bulk
NOT REGULATED

IMDG
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name: Nitrapyrin
Hazard Class: 9 **ID Number:** UN3082 **Packing Group:** PG III
EMS Number: F-A,S-F
Marine pollutant.: Yes

ICAO/IATA
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name: Nitrapyrin
Hazard Class: 9 **ID Number:** UN3082 **Packing Group:** PG III
Cargo Packing Instruction: 964
Passenger Packing Instruction: 964
Additional Information

MARINE POLLUTANT

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	Yes
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

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Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS #	Amount
Nitrapyrin	1929-82-4	17.67%
Naphthalene	91-20-3	0.1%

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:
The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Nitrapyrin	1929-82-4	17.67%
Propylene glycol	57-55-6	8.0%
Solvent naphtha (petroleum), heavy aromatic	64742-94-5	18.8%

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103
This product contains the following substances which are subject to CERCLA Section 103 reporting requirements and which are listed in 40 CFR 302.4.

Component	CAS #	Amount
Naphthalene	91-20-3	0.1%

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California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
WARNING: This product contains a chemical(s) known to the State of California to cause cancer.
California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

Toxic Substances Control Act (TSCA)
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

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16. Other Information

Hazard Rating System

NFPA	Health	Fire	Reactivity
	1	1	0

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Revision
RSSDS Status: New

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

Dow AgroSciences LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no

warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

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FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 4. TEST SUBSTANCE RECORDS

B. USE LOG

*INSTRUCTIONS: Complete a separate form for **each different** container of test substance used. Insert records on form or provide equivalent information. Indicate use of the stated container of the test substance by recording the dates that test substance was removed, the amount of test substance removed on each date, the purpose of the use **(include trial ID# for all uses on IR-4 studies)**, and the initials of the individual responsible for the removal.*

CHEMICAL NAME TSN 305177

BATCH/LOT NUMBER ENBK-137873-005 CONTAINER ID #1

DESCRIPTION OF TEST SUBSTANCE Tan liquid
(e.g. brown liquid, white powder. Note any unusual characteristics or changes here.)

ABOVE DATA ENTERED BY: Lori Skiles *DATE:* 4/4/14

DATE REMOVED	AMOUNT (*UNITS*) REMOVED	PURPOSE (include trial ID#) *[e.g. apply treatments, used in other research, etc.]*	INITIALS/DATE
4/4/14	101.1 mls	App 1 / A2659.14-CA01	VB 4/4/14
4/17/14	100.8 mls	App 2 / A2659.14-CA01	VB 4/17/14
		VB 4/17/14	

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE _____

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 4. TEST SUBSTANCE RECORDS

C. DISPOSITION OF TEST SUBSTANCE CONTAINERS

INSTRUCTIONS: Complete the appropriate part (PART 1, PART 2 or PART 3) that best explains the disposition of the test substance containers after the completion of applications for the trial or provide equivalent information. Line-out the parts that do not apply to this trial.

PLEASE NOTE: **Test substance containers may not be discarded without prior approval from the Study Director or confirmation that the study has been completed (final report signed by the Study Director) or cancelled. Field Research Directors may contact the Study Director or their Regional Field Coordinator to determine if a waiver from EPA permits proper test substance container disposal, or regarding completion of the final study report (study completion confirmation can also be determined from an IR-4 database search using the "Test Substance Container Disposal Approval" link). Alternatively, some registrants will archive the test substance container(s).**

PART 1

If the container(s) were shipped and are no longer in the Field Research Director's possession, indicate where the containers were shipped (include address and to whose attention), date of shipment, carrier, bill of lading number and the name of the individual responsible for shipment. ***A chain of custody form should be included in the shipment. The Field Research Director may use a form on the letterhead of his/her facility, or the form on the IR-4 website: ir4.rutgers.edu/FoodUse/FieldBook/TSCOC***

SHIPPED ~~CONTAINERS~~ TO _____

_____ KS 6/3/14

DATE SHIPPED _____ CARRIER _____ BILL OF LADING NO. _____

SHIPPED BY _____

PART 2

If the containers will remain in the possession of the Field Research Director, indicate location where the containers are stored.

STORING CONTAINERS AT:

LICKLE Bldg 117 Room 11 IR-4 Locker KS 6/3/14

PART 3

If containers were not handled by any of the above methods briefly explain how they were handled.

_____

_____ KS 6/3/14

_____

_____

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 6/3/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE _____

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IR-4 FIELD DATA BOOK

PART 4. TEST SUBSTANCE RECORDS

D. IDENTIFICATION AND RECEIPT OF SPRAY ADDITIVES

NOTE: The use of spray additives with the test substance must be approved in the protocol or in a protocol amendment. Spray additives are <u>not</u> considered test substances, thus no statement of GLP compliance or non-compliance is required.

INSTRUCTIONS: Complete one section of the form for each spray additive used in the trial.
<u>Also</u>, place a copy of the label after this page.

NAME OF THE SPRAY ADDITIVE ON CONTAINER LABEL UAN-32

ACTIVE INGREDIENT(S) See following page

TYPE OF SPRAY ADDITIVE: NONIONIC SURFACTANT (NON-SILICONE) ___

SILICONE SURFACTANT ___ CROP OIL CONCENTRATE ___ VEGETABLE OIL ___

METHYLATED SEED OIL ___ METHYLATED SPRAY OIL ___

OTHER: liquid fertilizer

DATE OF RECEIPT 4/4/14 RECEIVED BY Keri Skites

BATCH/LOT NO. [If this information is not available, check here: ✓]

EXPIRATION DATE [If this information is not available, check here: ✓]

AMOUNT RECEIVED Not known - UCKARE farm operations tank

CONTAINER DESCRIPTION *(e.g. glass bottles)* large plastic bulk container

CONDITION ON ARRIVAL *(e.g. good, bags broken, etc.)* Good

ABOVE DATA ENTERED BY: Keri Skites *DATE:* 4/4/14

NAME OF THE SPRAY ADDITIVE ON CONTAINER LABEL

ACTIVE INGREDIENT(S)

TYPE OF SPRAY ADDITIVE: NONIONIC SURFACTANT (NON-SILICONE) ___

SILICONE SURFACTANT ___ CROP OIL CONCENTRATE ___ VEGETABLE OIL ___

METHYLATED SEED OIL ___ METHYLATED SPRAY OIL ___

OTHER: VOID 4/22/14

DATE OF RECEIPT RECEIVED BY

BATCH/LOT NO. [If this information is not available, check here: ___]

EXPIRATION DATE [If this information is not available, check here: ___]

AMOUNT RECEIVED

CONTAINER DESCRIPTION *(e.g. glass bottles)*

CONDITION ON ARRIVAL *(e.g. good, bags broken, etc.)*

ABOVE DATA ENTERED BY: *DATE:*

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE _____

Simplot

PRODUCT DATA SHEET

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

UAN-32

Urea Ammonium Nitrate Solution

32-0-0

KB 4/4/14

GUARANTEED ANALYSIS:

TOTAL NITROGEN (N).....32.00%

7.75% Ammoniacal Nitrogen
7.75% Nitrate Nitrogen
16.50% Urea Nitrogen

Derived from Ammonium Nitrate and Urea.

Warning: This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986, requires notification of potential exposure to substances identified by the State of California as causing cancer, birth defects or other reproductive harm

Information regarding the contents and levels of metals in this product is available on the Internet at http://www.regulatory-info-jr.com

PHYSICAL CHARACTERISTICS

Specific Gravity @ 68°F:	1.327
Weight (lbs./gal.) @ 68°F:	11.06
Total Nitrogen (lbs./gal.):	3.54
Ammonic Nitrogen	0.86
Nitrate Nitrogen	0.86
Urea Nitrogen	1.82
Salting Out Temperature:	32°F
Solution pH:	6.8
Free Ammonia:	0.01%

CONSTRUCTION OF STORAGE & TRANSFER EQUIPMENT

1. Mild steel, stainless steel, aluminum and certain fiberglass materials are suitable. Copper and alloys containing copper (brass) should not be used.

COMPATIBILITY

1. Compatible with ammonium phosphate solutions such as 10-34-0, 11-37-0, 9-30-0, etc.
2. Compatible with potash solutions and combinations of potash and ammonium phosphate solutions.
3. Compatible with many herbicides. NOTE: Consult pesticide label or manufacturer before mixing UAN-32 with pesticide chemicals.

USES

1. A nonpressure solution–is well adapted for a wide range of application practices. Direct application in preplant plow-down programs, injecting or banding in the soil, or applied through various irrigation systems–sprinkler, drip, flood or furrow.
2. Is the preferred source of nitrogen in liquid blending plants and in combination with herbicides for "weed and feed" programs.

ADVANTAGES

1. Provides both fast acting and long lasting plant food from its three forms of nitrogen. Quick response from nitrate, longer lasting from ammonic and sustained feeding from the water soluble organic nitrogen in urea.
2. Enjoys great compatibility with other fertilizers and many chemicals. Makes possible two or more jobs in one trip over the field. Saves time, labor and money.
3. Is easy to store, handle and calibrate for accurate application in the field.
4. Is safe–being a nonpressure neutral solution, eliminates safety hazards associated with corrosive materials and high pressure systems.

SAFETY

Not generally considered toxic. Avoid contact with eyes and skin. In case of contact, thoroughly flush eyes and skin with water. 32-0-0 is not regulated by DOT.

PRECAUTIONS

1. Do NOT spray UAN-32 full strength on crops other than pastures.
2. Do NOT mix with aqua ammonia as the blend is very corrosive.

Part 4
Page: 25

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
FIELD ID NO: _____ Skiles

IR-4 FIELD DATA BOOK

PART 4. TEST SUBSTANCE RECORDS

E. CHEMICAL STORAGE BUILDING TEMPERATURE LOG

INSTRUCTIONS: Use this (or an equivalent) form when chemical storage building temperatures are taken manually. For each day that temperatures are taken, directly record the date, the minimum and maximum air temperature, the degree units (°F or °C) and provide the initials of the person entering the data. When temperature records are monitored automatically, the original or certified true copy of the output (data logger disk, computer printout, etc.) must be placed in the Field Data Book.

UNIQUE IDENTIFIER FOR TEMPERATURE RECORDER: HOBO ID: Chemical-2
Enter Temperature Recorder ID—may be make/model/serial# or assigned identifier. Chemical Backup-5

DATE	TEMP MIN/MAX	INITIALS	DATE	TEMP. MIN/MAX	INITIALS	DATE	TEMP MIN/MAX	INITIALS
			Refer to following Pages					

Please enter the overall minimum and maximum storage temperatures below, even if temperature printouts are inserted. The overall min/max temperatures should not include temperatures during transportation between storage and field. If there are two or more test substances (or separate shipments of test substance), then enter separate min/max temperatures below for each one, depending on the dates of receipt and application.

Test Substance 1: TSN 305177 (Nitrapyrin)	
Minimum test substance storage temperature between receipt and last application in this trial:	63
Maximum test substance storage temperature between receipt and last application in this trial:	75
~~Test Substance 2:~~	
Minimum test substance storage temperature between ~~receipt~~ and last application in this trial:	
Maximum test substance storage temperature between receipt and last application in this trial:	6/3/14

Unless otherwise noted above, all temperature units are in (Check one): °C____ °F X

Above data entered by: Keri Skiles *Date* 6/3/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
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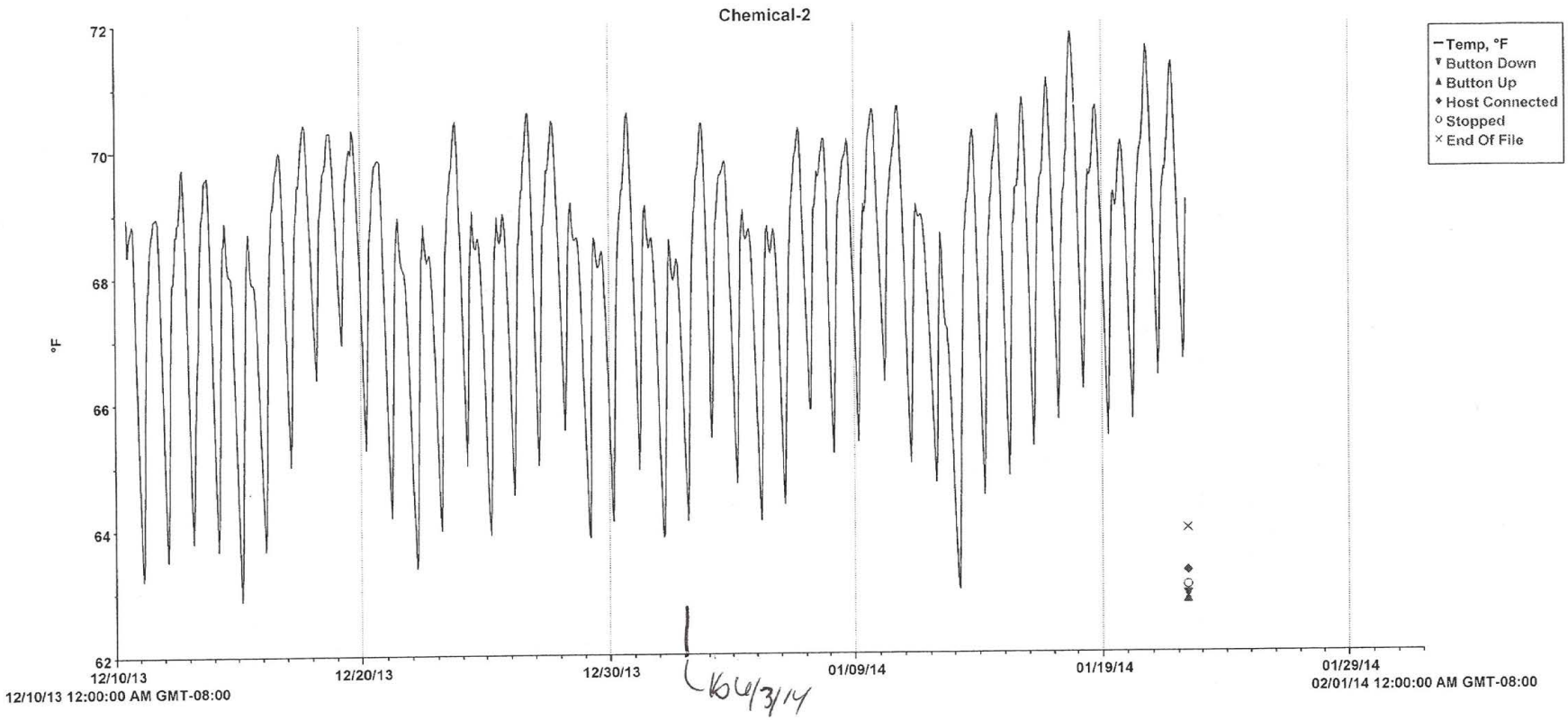


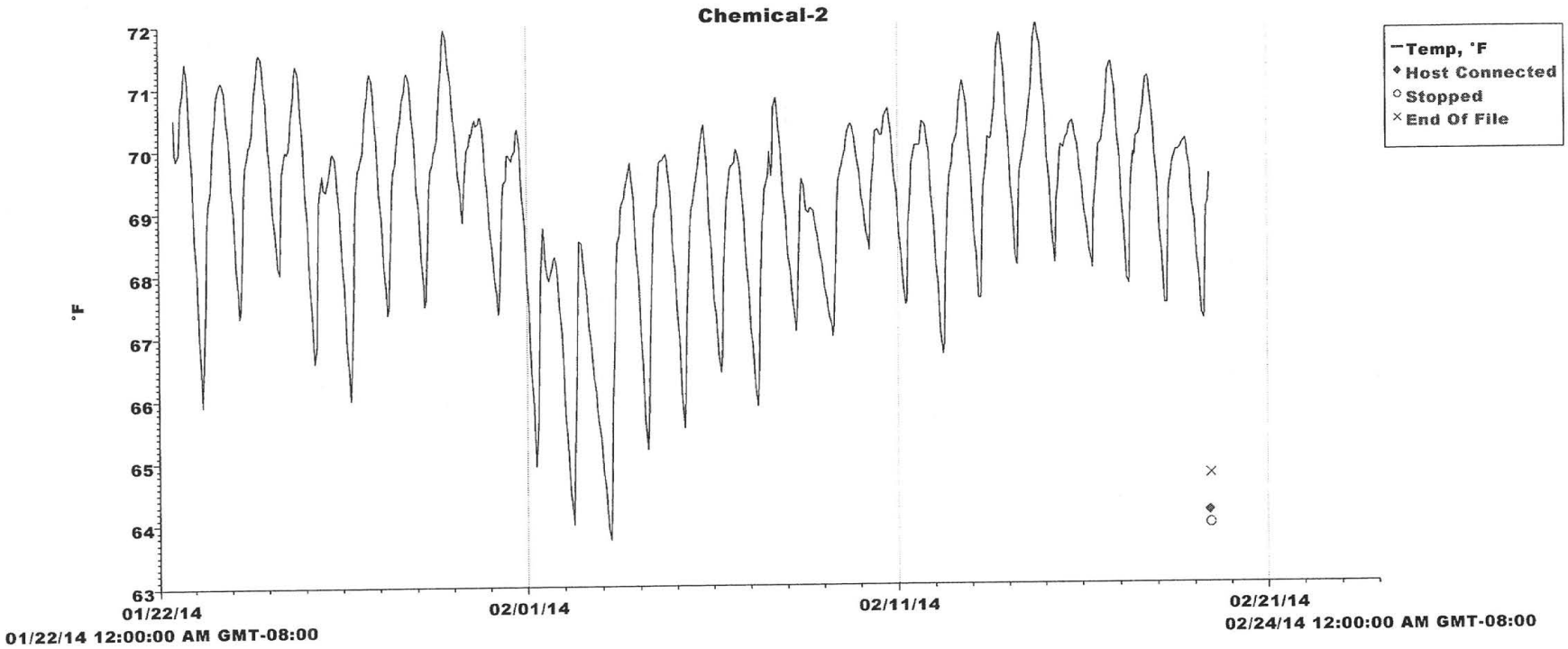
Part 4
Page: 27

Chemical Storage
original Data
12/10/13 to 1/22/14
VB 1/22/14

This is an exact copy of the original
Original in UCKARE records
Initials: VB Date: 6/3/14

Storage Date: 1/22/14 to 4/17/14
Temp (°F): Min: 63 Max: 75
Initials: VB Date: 6/3/14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

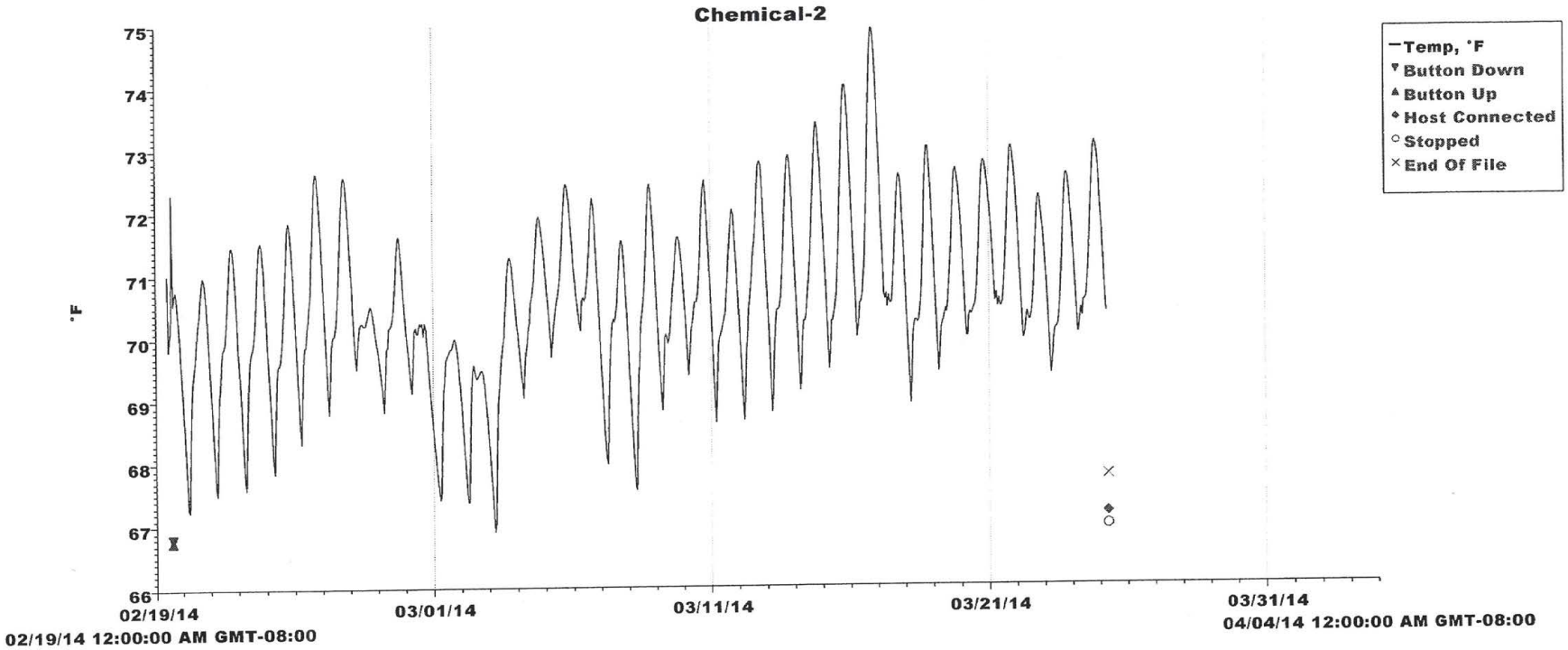


Chemical Storage
original data

1-22-14 to 2-19-14

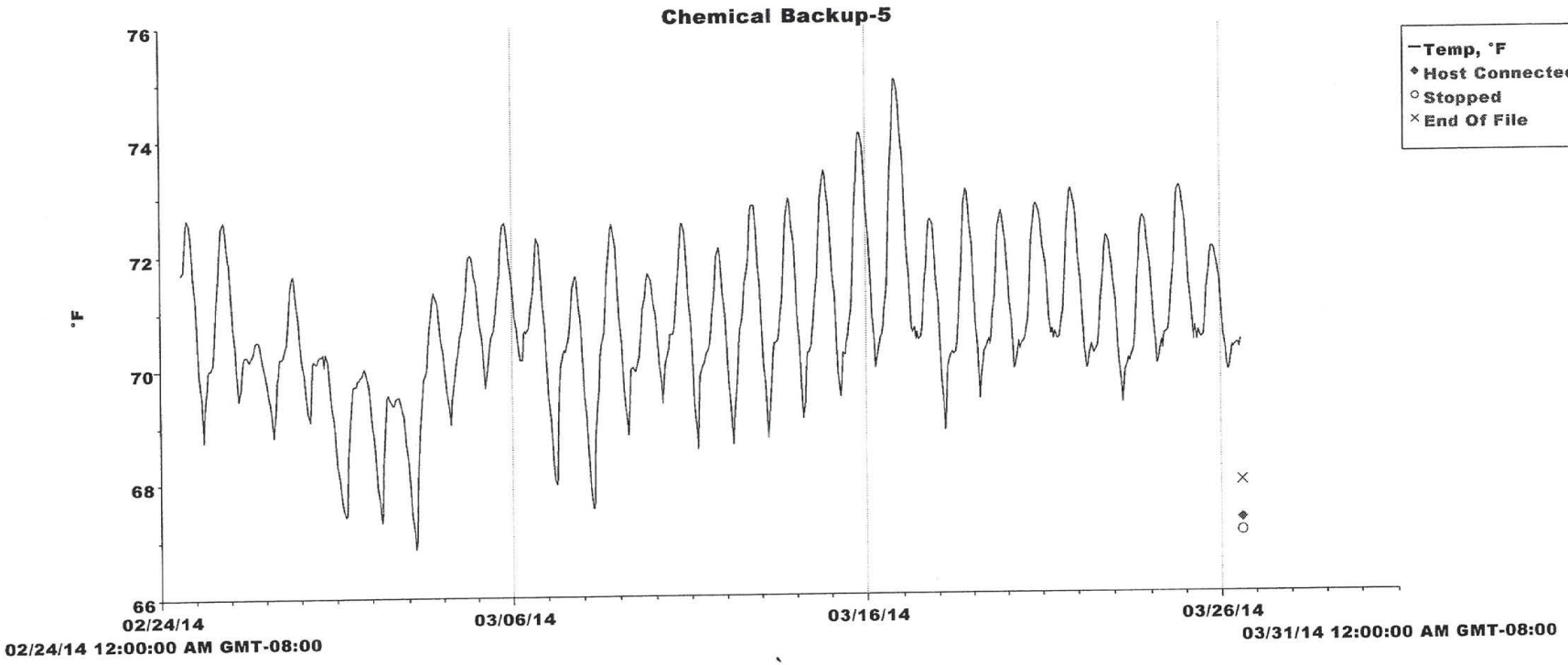
Ok 2-19-14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles



Chemical storage
original data
2-19-14 to 3-25-14
Ok 3-25-14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles



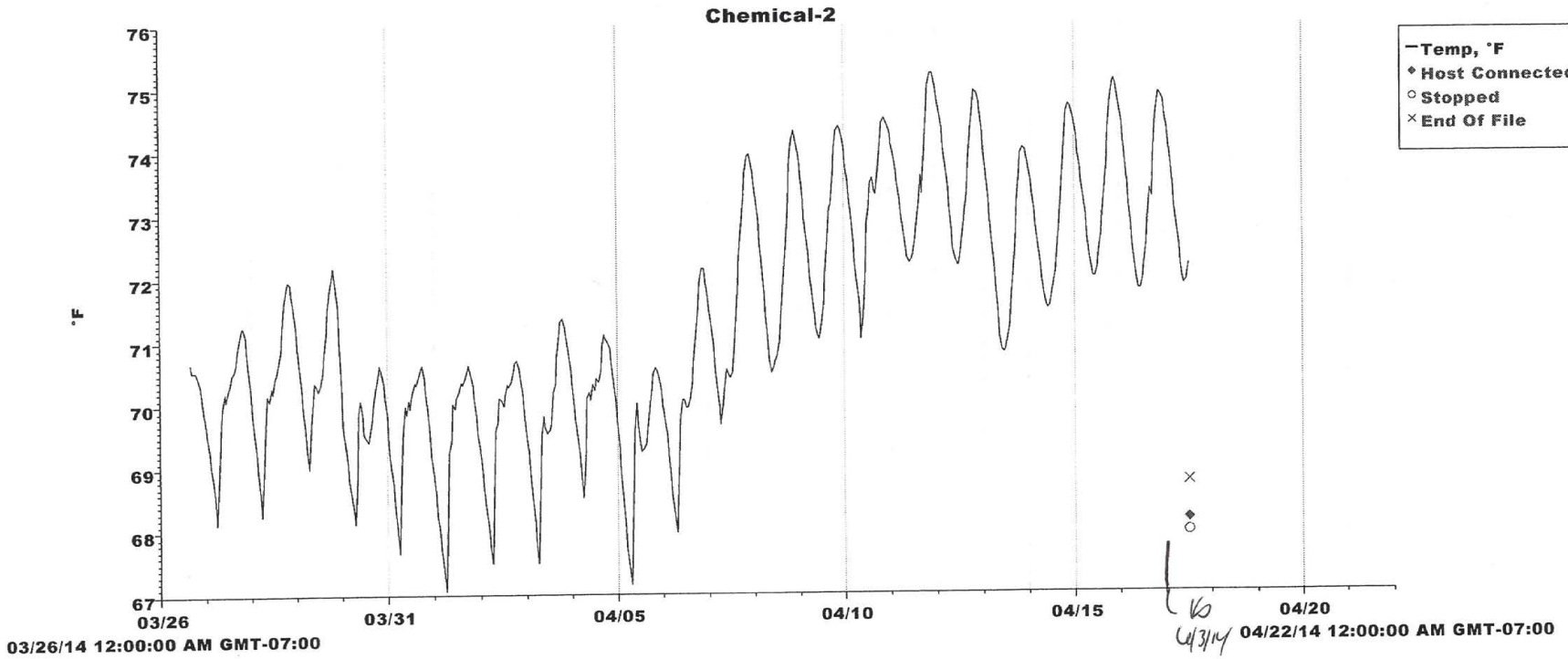
Chemical backup data used to cover the time period of 3-25-14 to 3-26-14 when Chemical-2 hobo datalogger had the calibration verified OK 3-26-14

Chemical storage original data 2-24-14 to 3-26-14 OK 3-26-14

Part 14
Page: 30

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

This is an exact copy of the original
Original in UCKARE records
Initials: KD Date: 6/3/14



Chemical storage
original data

3-26-14 to 4-17-14

OK 4-17-14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

IR-4 FIELD DATA BOOK

PART 4. TEST SUBSTANCE RECORDS

F. BALANCE CALIBRATION CHECK

INSTRUCTIONS: Complete this form or provide equivalent information when the test substance is a dry formulation. Check balance calibration by weighing standard weights that bracket the desired measurement. Record: date(s) that the balance calibration was checked, the standard weights, and the results. In addition, provide dates and a brief description of maintenance and repair work completed on the balance relevant to the trial. Be sure to initial all entries.

MAKE, MODEL, SERIAL NUMBER OR ASSIGNED IDENTIFIER: _____

Date	Stated Wt.	Recorded Wt.	Stated Wt.	Recorded Wt.	Initials
	No Scale Used				
	KS 6/3/14				

Stated Wt. = Stated mass of the standard weight(s) used in the calibration check
If more than one weight is used to attain the standard weight, indicate on the lines below the individual weights.
Recorded Wt. = Actual recorded mass of the standard weight(s)

RECORD DATES AND BRIEF DESCRIPTION OF ANY CALIBRATION, MAINTENANCE AND REPAIR WORK DONE ON BALANCE

_____
_____
_____
_____
_____
_____
_____
_____
_____

ABOVE DATA ENTERED BY: _____ *DATE:* _____

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Trial Site

Part 5

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _

IR-4 FIELD DATA BOOK

PART 5. TRIAL SITE INFORMATION:

A. DIRECTIONS TO TEST SITE

INSTRUCTIONS: Indicate the name and location (street, town, state) of the test site (e.g. Banana Research Center, Rt. 3, Nenana, AK), the county (e.g. Denali), and provide directions from the nearest city or town ***or*** *provide a map to the test site. The map can be sketched here; otherwise attach a clear photocopy or computer printout of the appropriate section of a state or county map with the test site location marked and the highways, nearest city or town identified.*

NAME AND LOCATION UC Kearney Agricultural Research and Extension Center
9240 S Riverbend Ave, Parlier CA 93648

COUNTY Fresno

DIRECTIONS FROM NEAREST CITY OR TOWN TO THE TEST SITE

Refer to following Pages KS 3/19/14

Refer to following Pages
KS 3/19/14

ABOVE DATA ENTERED BY: Keri Skiles DATE: 3/19/14

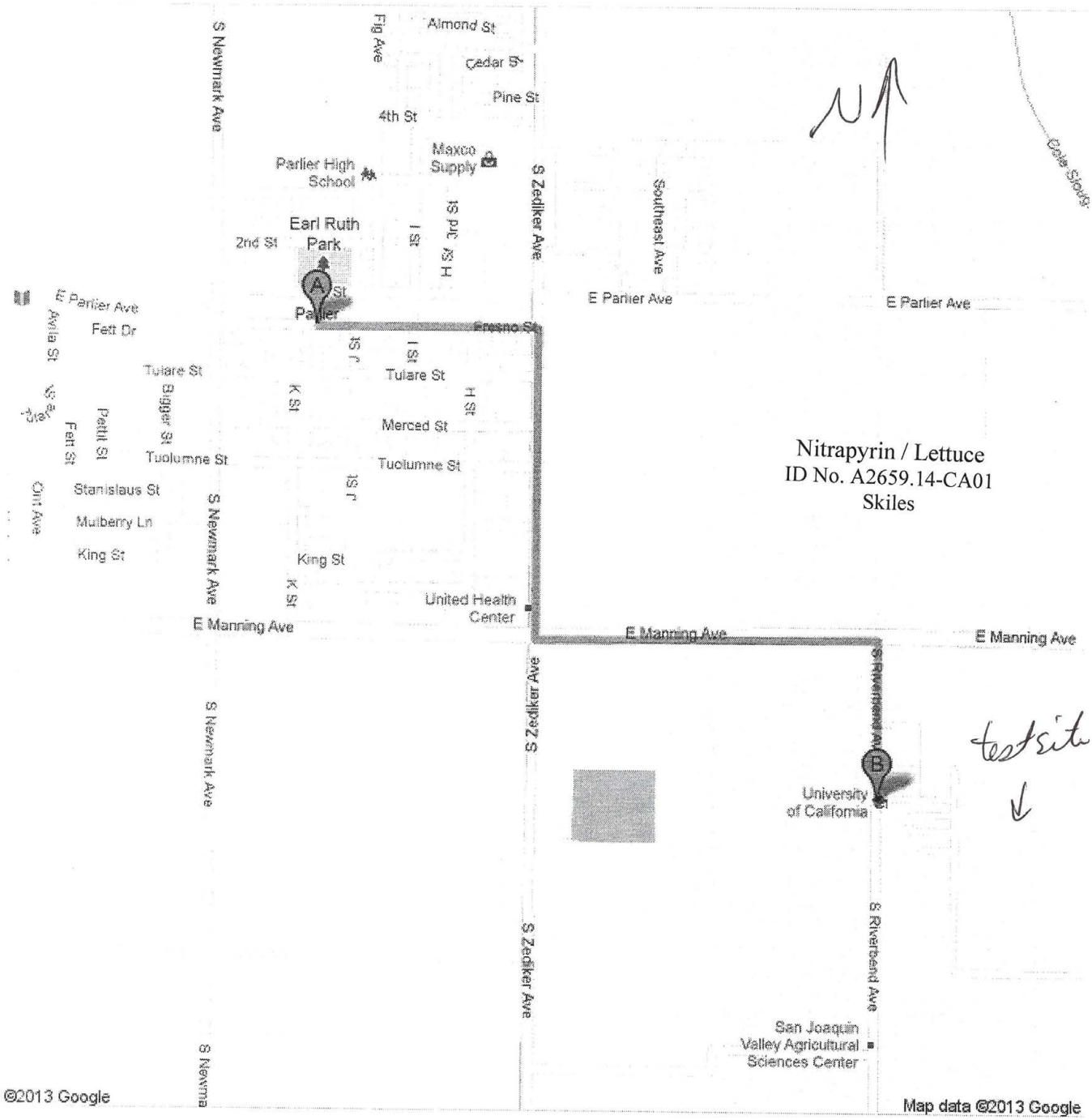
Total number of pages in this section at initial pagination: 30

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"

THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE_____

Google

Directions to 9240 S Riverbend Ave, Parlier, CA 93648
1.6 mi – about **5 mins**



Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

testsite

16 3/19/14

Keri Skiles 3/19/14

Part 5
Page: 2

A Parlier, CA

1.	Head **east** on **Fresno St** toward **J St** About 1 min	go 0.3 mi total 0.3 mi
2.	Turn right onto **S Zediker Ave** About 1 min	go 0.5 mi total 0.8 mi
3.	Take the 1st left onto **E Manning Ave** About 1 min	go 0.5 mi total 1.3 mi
4.	Take the 1st right onto **S Riverbend Ave** Destination will be on the left About 49 secs	go 0.2 mi total 1.6 mi

B 9240 S Riverbend Ave, Parlier, CA 93648

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Directions weren't right? Please find your route on maps.google.com and click "Report a problem" at the bottom left.

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
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VG 3/19/14

Part 5
Page: 3

IR-4 FIELD DATA BOOK

PART 5. TRIAL SITE INFORMATION:

B. DIRECTIONS TO TEST PLOT AREA

INSTRUCTIONS: Provide the general direction with distances from the entrance of test site to test plot area (indicate North direction) ***or*** *provide a map containing this information. (The entrance must be clearly indicated on the map.) Also indicate the irrigation source location and location of meteorological equipment if they are on site.*

Refer to following page.
VS 3/19/14

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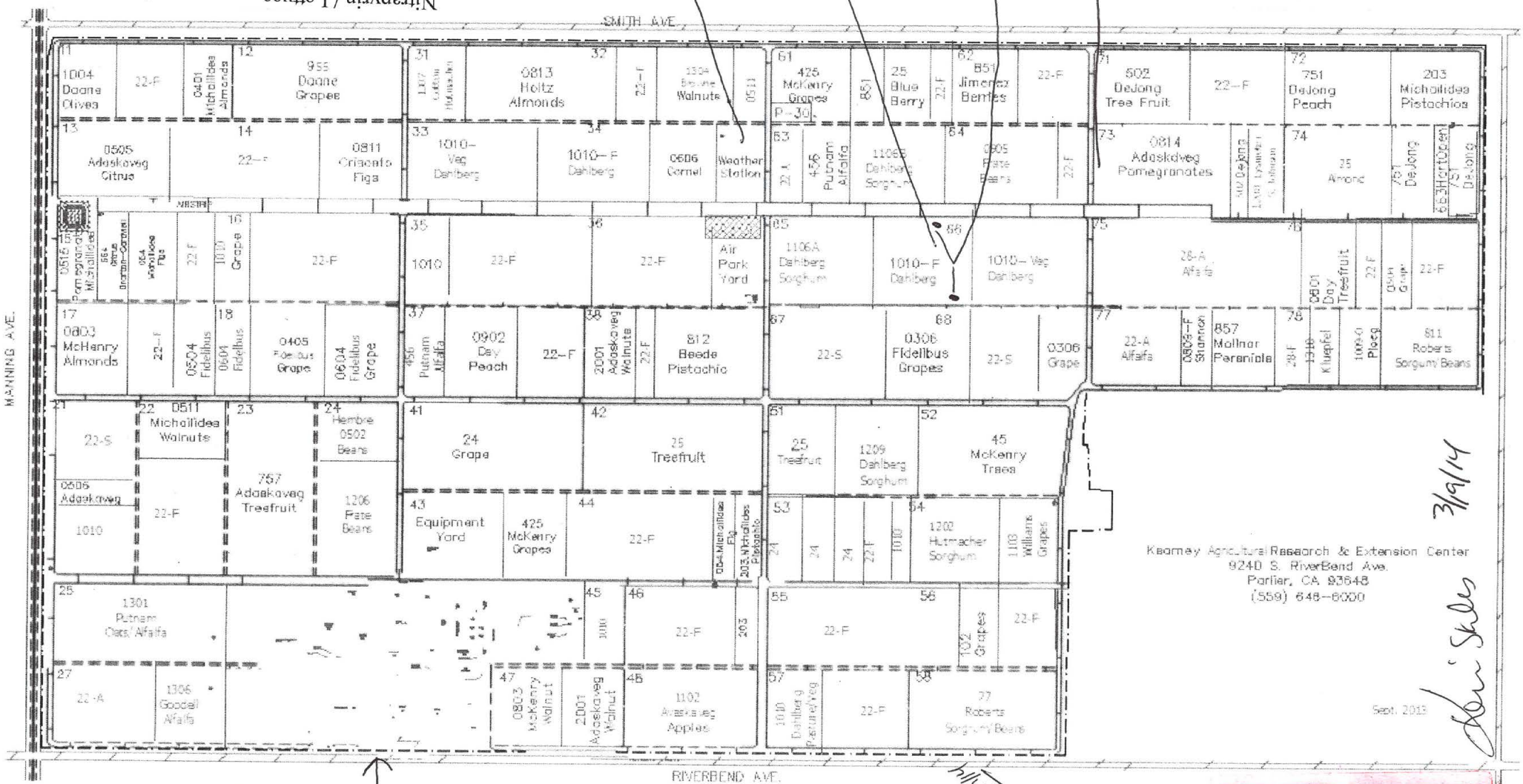

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ID No. A2659.14-CA01
Skiles

Page: 5

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Original in UCKARE records
Initials: VL Date: 3/19/14

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Original in UCKARE records
Date: 3/19/14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
FIELD ID NO: Skiles

IR-4 FIELD DATA BOOK

PART 5. TRIAL SITE INFORMATION:

C.1. PLOT PLAN

INSTRUCTIONS: Legibly sketch on the next page the actual plot plan. Computer-generated plans are acceptable. ***Check off the required items in the table below to confirm that they have been included in the plot plan:***

Required items in the plot plan	√
The dimensions and locations of treated and untreated plots*	✓
Dimensions and locations of buffer zones	✓
Distances to permanent landmarks from at least two plot corners per plot (Optionally from two plot centers per plot for perennial crops)	✓
Distance between the untreated plot and all treated plots in this study	✓
The north direction	✓
Slope direction with an arrow pointing down slope	✓
The number of rows* and/or beds and their direction	✓
Label plot replicates (if applicable)	N/A
Distances and relative locations of <u>immediately</u> adjacent plots treated with test chemicals that are not part of the trial covered by this Field Data Book. *(Adjacent plots more distant than 50 feet/15 meters for row crops, or 100 feet/30 meters for tree fruits and nuts, from the plots in this trial do not need to be included.)*	✓
<u>Identity of the test chemical(s) used on the adjacent plots</u> *Exception: Proprietary compounds that cannot be identified because of a secrecy agreement may be labeled as "experimental compound" in this Field Data Book.*	✓
It is acceptable to have the information for the adjacent plots on a separate map that is inserted in this section behind the plot plan. In that case the plot plan would only have the items indicated for the trial plots. The information for the adjacent plots may alternatively be listed in a table beneath the plot plan; see "Part-5C alternate" on the IR-4 website.	
Initials and date of the person who checked off items above:	KD 5/19/14

**Items marked with an asterisk are also required in 5F; <u>please enter on both pages for clarity</u>.*

Global Position System readings are acceptable for permanent reference points only if SOP's kept at the testing facility cover their use, accuracy, and precision. Also provide the date the test plots were measured and staked, the initials of the individual responsible for laying out the plots and the SOPs (include revision number) used in laying out the plots.

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

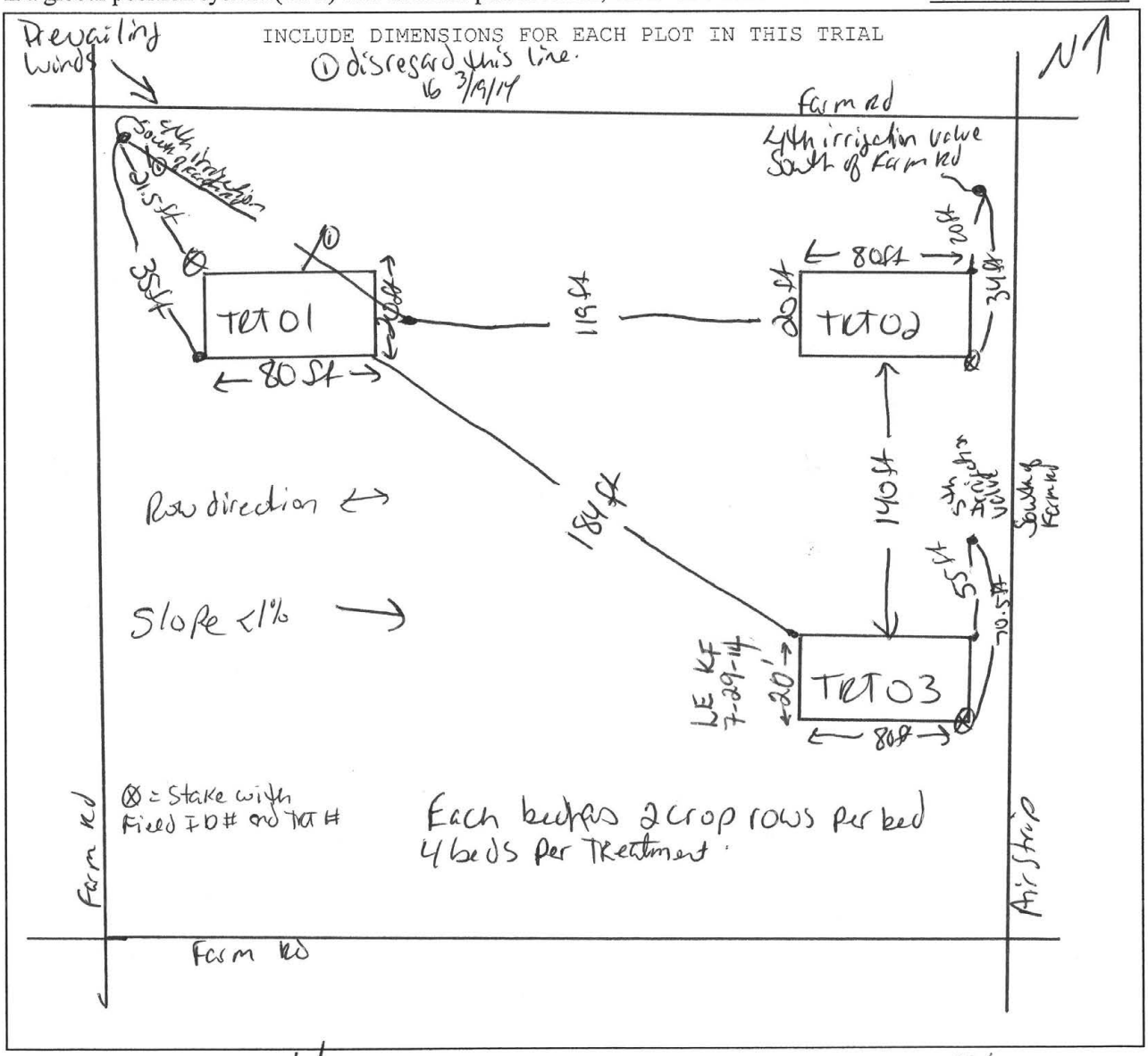
PART 5. TRIAL SITE INFORMATION:

C.2. PLOT PLAN

DATE OF PLOT LAYOUT 3/19/14 PERFORMED BY KB DJE SOP UTILIZED LICKARE 30-2.2

Are there adjacent plots treated with test substances as described in part 5.C.1? YES X NO _____

If a global position system (GPS) was used for plot location, enter GPS-related SOP utilized KB 3/19/14



ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 3/19/14

PART 5 PAGE 7 Trial Year 2014

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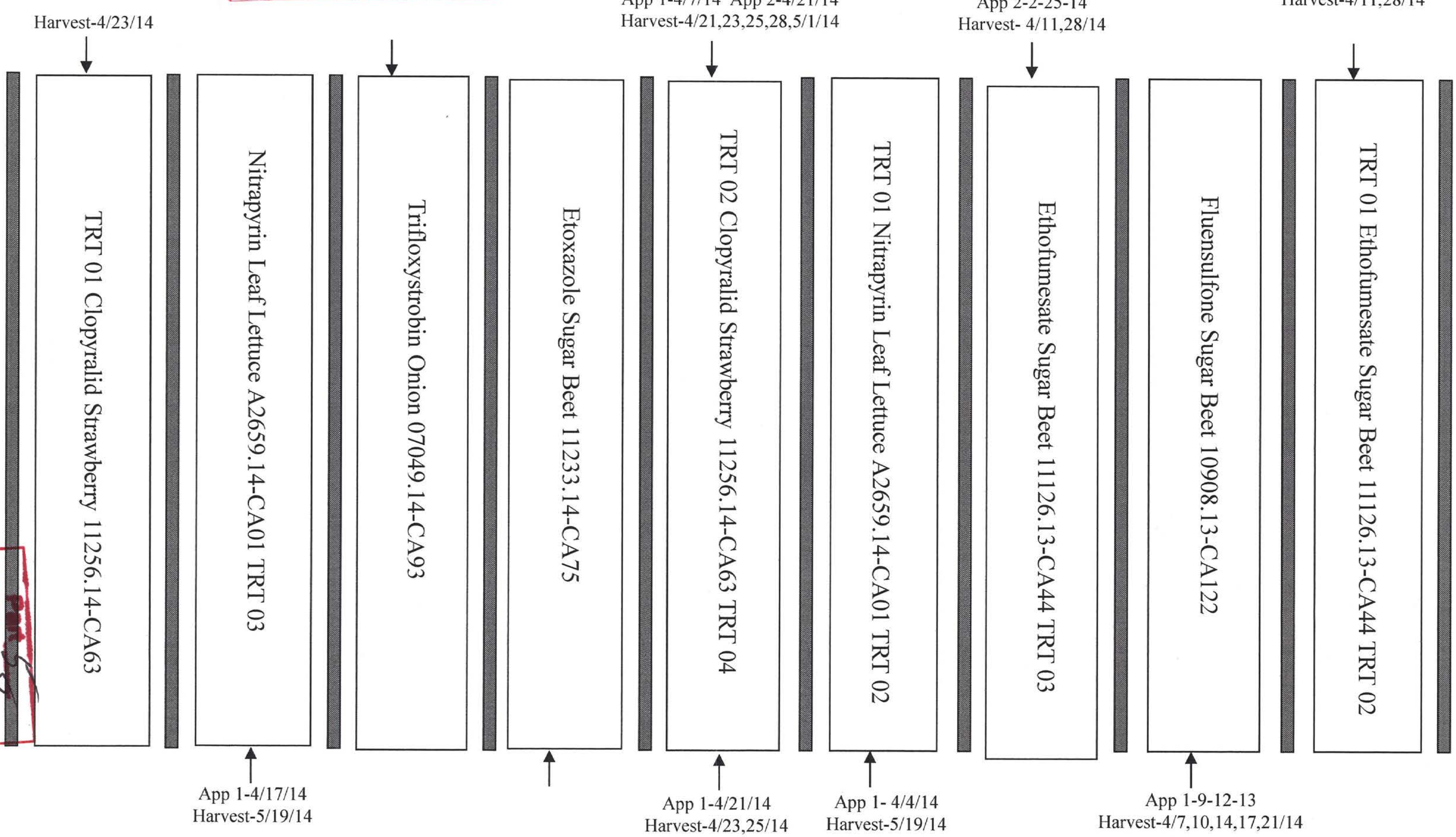
Plot Map Field # 66-2014

UTC plots are on the west side of field and TRT plots are on the east side of field except as noted

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

N →

▮ = **20 ft Buffer area**



Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 5. TRIAL SITE INFORMATION:

D. SITE AND SOIL INFORMATION CHARACTERISTICS

INSTRUCTIONS: Furnish soil description and classification information for the plot area. This information shall be transcribed from USDA Soil Conservation Service soil maps containing description of the soil series, land class capabilities, and soil characteristics or via soil sampling and laboratory analysis of the soil. ***All supporting information shall be placed in the IR-4 Field Data Book directly following this page.***

SITE IDENTIFIER	UCKAC Field 66						
ESTIMATE OF SLOPE PERCENTAGE IN PLOT	< 1%						
TAXONOMIC NAME OF SOIL IN PLOT	Hanford sandy loam Hanford Sandy Loam, Hard Substratum						
SOIL TEXTURE/TYPE (e.g., sandy loam)	Sandy Loam						
SOIL TEXTURE PERCENTAGES		SAND	68.0	SILT	19.5	CLAY	12.5
ORGANIC MATTER %	0.75	pH	6.7	CATION EXCHANGE CAPACITY (CEC) in meq/100 g		7.5	

IS THIS A GREENHOUSE TRIAL USING SOIL-LESS MEDIA? YES____ NO X

IF YES, INCLUDE A LIST OF INGREDIENTS (copy may be inserted): _____

VS 4/22/14

IF SOIL ANALYSIS IS PERFORMED, COMPLETE THE FOLLOWING AND INSERT THE ORIGINAL OR CERTIFIED TRUE COPY OF THE SOIL CHARACTERIZATION REPORT DIRECTLY FOLLOWING THIS PAGE.

SOIL SAMPLE DATE_____ PERFORMED BY_____ SOP UTILIZED_____

WAS SOIL SAMPLING REPRESENTATIVE OF SITE? *(Check one)* YES____ NO____

IF NO IS CHECKED, EXPLAIN: _____

VS 4/22/14

DATE SOIL SAMPLE SHIPPED TO LABORATORY FOR ANALYSIS _____

NAME AND ADDRESS OF LABORATORY _____

ABOVE DATA ENTERED BY: Dawn Skiles *DATE:* 4/22/14

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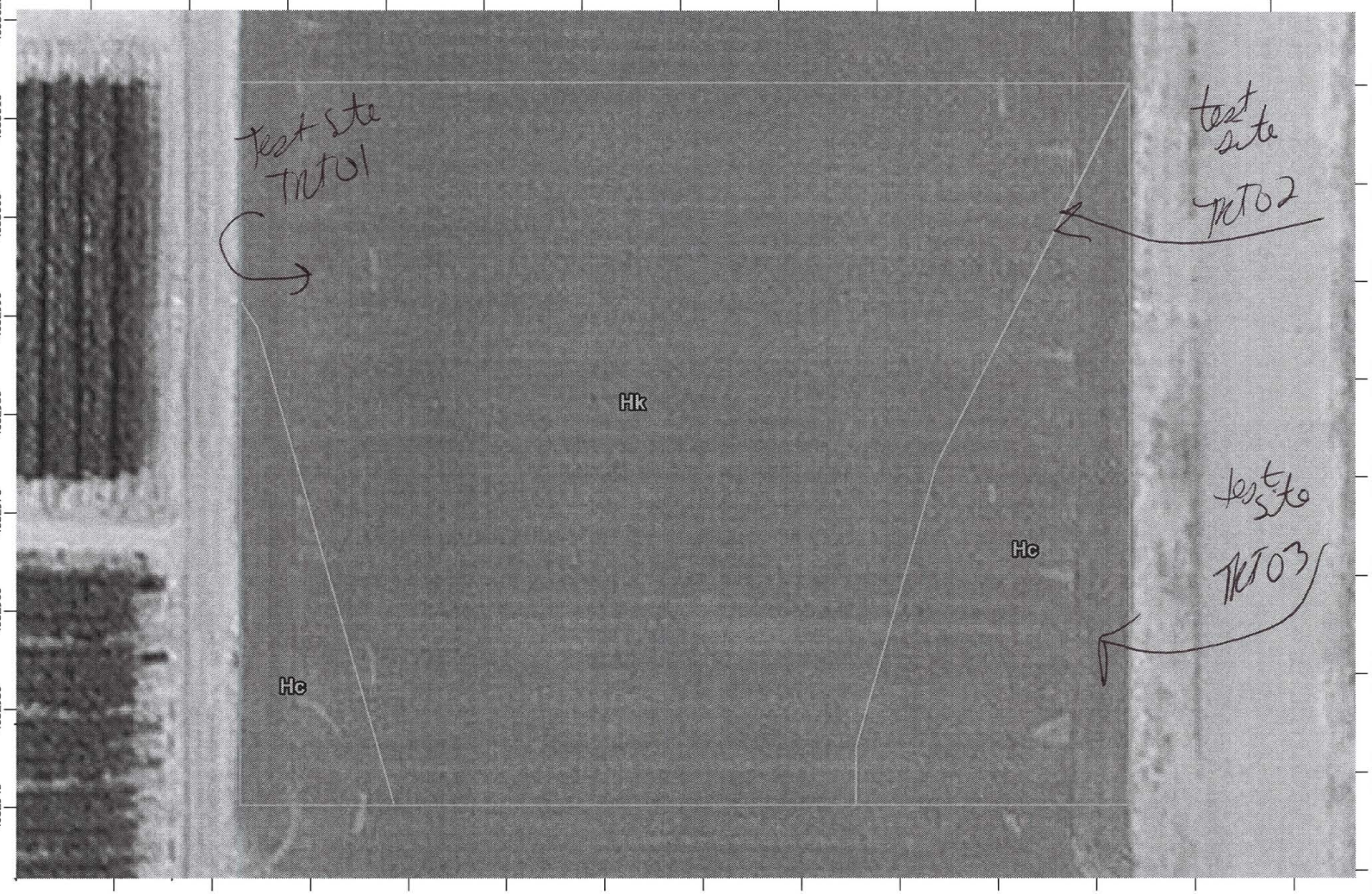
Soil Map—Eastern Fresno Area, California
(UCKARE Field 66)



Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Part
Page: 3 of 10

Map Scale: 1:623 if printed on A landscape (11" x 8.5") sheet.
Meters 0 5 10 20 30
Feet 0 30 60 120 180
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

Keri Skiles 4/22/14

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eastern Fresno Area, California
Survey Area Data: Version 6, Dec 11, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 27, 2010—Jul 3, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Eastern Fresno Area, California (CA654)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
Hc	Hanford sandy loam	0.4	24.8%
Hk	Hanford sandy loam, hard substratum	1.2	75.2%
Totals for Area of Interest		**1.6**	**100.0%**

V 4/22/14

Part 5
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Eastern Fresno Area, California

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Hc—Hanford sandy loam

Map Unit Setting

Elevation: 200 to 500 feet
Mean annual precipitation: 8 to 15 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 275 days

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent

V5 4/22/14

Description of Hanford

Setting

Landform: Alluvial fans, flood plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Granitic alluvium

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.8 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2s
Land capability (nonirrigated): 4s
Hydrologic Soil Group: A

Typical profile

0 to 16 inches: Sandy loam
16 to 72 inches: Sandy loam

Minor Components

Unnamed

Percent of map unit: 10 percent
Landform: Alluvial fans, flood plains

Part 5
Page: 13

Unnamed, channeled

Percent of map unit: 5 percent

Landform: Channels on alluvial fans

Data Source Information

Soil Survey Area: Eastern Fresno Area, California
Survey Area Data: Version 6, Dec 11, 2013

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

4/22/14

Part 5
Page: 5.9

Eastern Fresno Area, California

Hk—Hanford sandy loam, hard substratum

Map Unit Setting

Elevation: 200 to 500 feet
Mean annual precipitation: 8 to 15 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 275 days

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Description of Hanford

Setting

Landform: Alluvial fans, flood plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Granitic alluvium

16 4/22/14

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.7 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance
Land capability classification (irrigated): 3s
Land capability (nonirrigated): 4s
Hydrologic Soil Group: B

Typical profile

0 to 16 inches: Sandy loam
16 to 36 inches: Sandy loam
36 to 46 inches: Cemented

Minor Components

Unnamed, shallow compact subsoil

Percent of map unit: 10 percent
Landform: Alluvial fans, flood plains

Part 5
Page: 15

Unnamed, clay substratum
Percent of map unit: 5 percent
Landform: Alluvial fans, flood plains

Data Source Information

Soil Survey Area: Eastern Fresno Area, California
Survey Area Data: Version 6, Dec 11, 2013

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
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VS 4/22/14

Part 5
Page: 16

Percent Sand

Percent Sand— Summary by Map Unit — Eastern Fresno Area, California (CA654)				
Map unit symbol	**Map unit name**	**Rating (percent)**	**Acres in AOI**	**Percent of AOI**
Hc	Hanford sandy loam	68.0	0.4	24.8%
Hk	Hanford sandy loam, hard substratum	68.0	1.2	75.2%
Totals for Area of Interest			**1.6**	**100.0%**

Rating Options

Units of Measure: percent

Aggregation Method: Dominant Component

Component Percent Cutoff: *None Specified*

VS 4/22/14

Tie-break Rule: Higher

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 12

Units of Measure: Inches

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

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Page: 17

Percent Silt

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Percent Silt— Summary by Map Unit — Eastern Fresno Area, California (CA654)				
Map unit symbol	**Map unit name**	**Rating (percent)**	**Acres in AOI**	**Percent of AOI**
Hc	Hanford sandy loam	19.5	0.4	24.8%
Hk	Hanford sandy loam, hard substratum	19.5	1.2	75.2%
Totals for Area of Interest			**1.6**	**100.0%**

Rating Options

Units of Measure: percent

VO 4/22/14

Aggregation Method: Dominant Component

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 12

Units of Measure: Inches

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Percent Clay

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Percent Clay— Summary by Map Unit — Eastern Fresno Area, California (CA654)				
Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
Hc	Hanford sandy loam	12.5	0.4	24.8%
Hk	Hanford sandy loam, hard substratum	12.5	1.2	75.2%
Totals for Area of Interest			**1.6**	**100.0%**

Rating Options

Units of Measure: percent

VS 4/22/14

Aggregation Method: Dominant Component

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 12

Units of Measure: Inches

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Organic Matter

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Organic Matter— Summary by Map Unit — Eastern Fresno Area, California (CA654)				
Map unit symbol	**Map unit name**	**Rating (percent)**	**Acres in AOI**	**Percent of AOI**
Hc	Hanford sandy loam	0.75	0.4	24.8%
Hk	Hanford sandy loam, hard substratum	0.75	1.2	75.2%
Totals for Area of Interest			**1.6**	**100.0%**

Rating Options

Units of Measure: percent

Aggregation Method: Dominant Component

4/22/14

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 12

Units of Measure: Inches

Part 5
Page: 20

pH (1 to 1 Water)

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

pH (1 to 1 Water)— Summary by Map Unit — Eastern Fresno Area, California (CA654)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
Hc	Hanford sandy loam	6.7	0.4	24.8%
Hk	Hanford sandy loam, hard substratum	6.7	1.2	75.2%
Totals for Area of Interest			**1.6**	**100.0%**

Rating Options

Aggregation Method: Dominant Component

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

6/22/14

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 12

Units of Measure: Inches

Part 5
Page: 57

Cation-Exchange Capacity (CEC-7)

Cation-Exchange Capacity (CEC-7)— Summary by Map Unit — Eastern Fresno Area, California (CA654)				
Map unit symbol	**Map unit name**	**Rating (milliequivalents per 100 grams)**	**Acres in AOI**	**Percent of AOI**
Hc	Hanford sandy loam	7.5	0.4	24.8%
Hk	Hanford sandy loam, hard substratum	7.5	1.2	75.2%
Totals for Area of Interest			**1.6**	**100.0%**

Rating Options

Units of Measure: milliequivalents per 100 grams

Aggregation Method: Dominant Component

Component Percent Cutoff: *None Specified*

VG 4/22/14

Tie-break Rule: Higher

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 12

Units of Measure: Inches

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Page: 22

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 5. TRIAL SITE INFORMATION

E. TEST SITE HISTORY FORM

*INSTRUCTIONS: Complete this form **or** provide equivalent information. Enter all pesticide and fertilizer applications for the time period specified in the protocol. Note the active ingredient applied, along with the trade name (e.g. carbaryl/SEVIN 80 S), the rate of chemical and the units measured (e.g. lbs active ingredient {ai} per acre or pints {pts} product per acre), the approximate date (at minimum season and year) the pesticide/fertilizer was applied and the crop growing on the plot.*

Active Ingredient	TRADE NAME	RATE *(units)*	Date or season applied	CROP
			2013	Vetch mix
		There were no Pesticides or		
		fertilizers applied in		2013
		KD 5/8/14		

APPLICABLE TREATMENT(S) All

If the treated and untreated plots have different histories, then provide the name of the treatment that this form covers. When the histories are the same, enter " ALL" .

SOURCE OF DATA Verbal from grower
(E.g. Facility logbook, farmer's records)

TEST SITE HISTORY DATA ARE (*Check one*): TRUE COPY___ TRANSCRIBED X

IF TEST SITE HISTORY DATA ARE TRANSCRIBED, CHECK APPROPRIATE LINE BELOW

_____DATA WERE VERIFIED BY _____
(Print name above of someone other than transcriber and Quality Assurance)

X DATA WERE OBTAINED VERBALLY FROM GROWER (THEREFORE, DATA WERE NOT VERIFIED)
Please document this communication in Part 3 of this Field Data Book. No records provided

_____DATA WERE TRANSCRIBED FROM WRITTEN RECORDS, BUT WERE NOT VERIFIED

ABOVE DATA ENTERED BY: Dani Stiles *DATE:* 5/8/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE_____

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 5. TRIAL SITE INFORMATION:

F. TEST CROP RECORDS

CROP	Leaf Lettuce	VARIETY	Waldmann's Green
FIELD (TEST PLOT) PLANTING DATE or AGE OF ESTABLISHED CROP	3/10/14 2/5/14 ①	PLANT SPACING *Indicate the distance (with units) between the plants within the row*	1-2 inches
IF THE NUMBER OF ROWS PER BED = 1 (OR IF BEDS ARE NOT USED), THEN ENTER:			
ROW OR BED WIDTH *Distance (with units) between the centers of the crop row*		~~NUMBER OF ROWS PER PLOT~~ *Each treatment (Untreated, TRT 02, etc.) consists of one plot*	Vb 2/5/14
IF NUMBER OF ROWS/BED > 1, THEN ENTER: ***Rows/Bed must be 2 or more;*** *otherwise enter data above.*		NUMBER OF ROWS/BED ***Do not enter '1' in this space.***	2
BED WIDTH *Distance (with units) between the centers of the bed*	60 inches	NUMBER OF BEDS PER PLOT *Each treatment (Untreated, TRT 02, etc.) consists of one plot*	4
TRT 01 (UNTREATED) PLOT DIMENSIONS		20ft x 80ft	
TRT 02 (TREATED) PLOT DIMENSIONS		20 ft x 80 ft	
TRT 03 (TREATED) PLOT DIMENSIONS		20 ft x 80 ft	
Indicate the dimensions (with units) of each plot (e.g. 6' x 50' or 2m x 15m)			
SOURCE OF SEED/TRANSPLANTS		Lockhart Seed Inc.	
DATE SEEDS/TRANSPLANTS RECEIVED		8/26/13	
LOT NO. OF SEED		12572	
PLANTING METHOD *(Check One)*		SEEDED X TRANSPLANTED____ ESTABLISHED CROP____	
TYPE OF PLANTER OR TRANSPLANTER		Planet Jr mechanical Planter	
IF THIS IS A TREE FRUIT OR NUT TRIAL:		NUMBER OF TREES PER PLOT	Vb 2/5/14
IF THIS IS A FRUIT, NUT, OR ARTICHOKE TRIAL:		ESTIMATED BUSH/TREE HEIGHT	
IS THIS IS A GREENHOUSE TRIAL? *(check one)*		YES ____ NO X	

Responses that do not fit above (e.g. Trt 04 plot dimensions or differing numbers of rows per plot) may be entered here:
① Replanted on 3/10/14 ~~and~~ ② due to poor emergence. All planting information is the same. Vb 3/10/14.
② Entry error. Vb 3/10/14

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 2/5/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
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Nitrapyrin / Lettuce
ID No. A2659.14-CA01

FIELD ID NO: Skiles

IR-4 FIELD DATA BOOK

PART 5. TRIAL SITE INFORMATION:

G. CULTURAL PRACTICES LOG

INSTRUCTIONS: List all soil preparation and crop maintenance activities (e.g., cultivation, pruning) performed on test site from the harvest of the previous crop until the residue samples are collected. If no crop was grown on the test site, collect data for a period of one year prior to the first test substance application. Include the activity (operation), dates performed, source of information (e.g., farmer), equipment used, and if appropriate, the depth into soil which the practice was performed (e.g., roto-tiller mixed soil to 6 inches) and initials/date of the individual responsible for collecting information.

OPERATION	DATE	INFO SOURCE	EQUIPMENT	INITIALS/DATE
The test plots area disced ~ 6 inches depth	1-6-14	Verbal from Grower	Tractor and Disc	KS 5/8/14
Test plot area rototilled ~ 6 in depth and shaped beds ~ 6 in depth	↓	↓	Tractor, rototiller and bed shaper	↓
		KS 5/8/14		

Cultural Practices Data Are (*Check all that apply*): ORIGINAL DATA___ TRUE COPY___ TRANSCRIBED X

IF CULTURAL PRACTICES DATA ARE TRANSCRIBED, CHECK APPROPRIATE LINE BELOW

_____DATA WERE VERIFIED BY _____
(Print name above of someone other than transcriber and Quality Assurance)

X DATA WERE OBTAINED VERBALLY FROM GROWER (THEREFORE, DATA WERE NOT VERIFIED)
Please document this communication in Part 3 of this Field Data Book. No records provided. KS 5/8/14

_____DATA WERE TRANSCRIBED FROM WRITTEN RECORDS, BUT WERE NOT VERIFIED

ABOVE DATA ENTERED BY: Keri Stiles *DATE:* 5/8/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
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Nitrapyrin / Lettuce
ID No. A2659.14-CA01
FIELD ID NO: Skiles

IR-4 FIELD DATA BOOK

PART 5. TRIAL SITE INFORMATION:

G. CULTURAL PRACTICES LOG

INSTRUCTIONS: List all soil preparation and crop maintenance activities (e.g., cultivation, pruning) performed on test site from the harvest of the previous crop until the residue samples are collected. If no crop was grown on the test site, collect data for a period of one year prior to the first test substance application. Include the activity (operation), dates performed, source of information (e.g., farmer), equipment used, and if appropriate, the depth into soil which the practice was performed (e.g., roto-tiller mixed soil to 6 inches) and initials/date of the individual responsible for collecting information.

OPERATION	DATE	INFO SOURCE	EQUIPMENT	INITIALS/DATE
Cultivated test plots ~6"	4/3/14	Direct entry	Tractor, Cultivator	VS 4/3/14
All plots weeded ~2-4"	4/14/14	Direct entry	Hand Hoe	VS 4/14/14
		VS 6/5/14		

Cultural Practices Data Are (*Check all that apply*): ORIGINAL DATA X TRUE COPY___ TRANSCRIBED___

IF CULTURAL PRACTICES DATA ARE TRANSCRIBED, CHECK APPROPRIATE LINE BELOW

VS 6/5/14
____DATA WERE VERIFIED BY_____
(Print name above of someone other than transcriber and Quality Assurance)

____DATA WERE OBTAINED VERBALLY FROM GROWER (THEREFORE, DATA WERE NOT VERIFIED)
Please document this communication in Part 3 of this Field Data Book.

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ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 6/5/14

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Nitrapyrin / Lettuce
ID No. A2659.14-CA01

FIELD ID NO: Skiles

IR-4 FIELD DATA BOOK

PART 5. TRIAL SITE INFORMATION:

H. MAINTENANCE FERTILIZERS AND PESTICIDES (INCLUDE ADJUVANTS)

INSTRUCTIONS: Enter all maintenance pesticide and fertilizer applications during the trial. Note the date the chemical was applied, the ***active ingredient*** *applied, along with the trade name (****e.g. carbaryl/SEVIN 80 S****), the application rate of chemical and the units measured (i.e. lbs active ingredient per acre or pints product per acre), the purpose of the chemical (e.g., fertilizer, weeds, insects) and initials of the person responsible for direct supervision of the application with date of data entry. If two or more chemicals were tank mixed, list them together and bracket the tank mix on the form. If the crop was established from transplants, include all maintenance chemicals applied to the plants prior to transplanting. If treated seed was used, list treatment chemical (Date Applied would be "NA").*

If a facility or grower's list of all maintenance chemical applications is inserted here, the applications to the plots in this trial must be notated in some way to distinguish them from applications made to other areas of the farm or research facility.

DATE APPLIED	Active Ingredient	TRADE NAME	RATE *(units)*	PURPOSE	INITIALS/DATE
1-6-14	N-P-K	15-15-15	500 lbs/A	Fertilizer	VB 5/8/14
		VB 5/8/14			

MAINTENANCE FERTILIZERS AND PESTICIDES DATA ARE (*Check all that apply*):

ORIGINAL DATA____ TRUE COPY____ TRANSCRIBED X

IF MAINTENANCE FERTILIZERS AND PESTICIDE DATA ARE TRANSCRIBED, check appropriate line below

____DATA WERE VERIFIED BY_____
(Print name above of someone other than transcriber and Quality Assurance)

X DATA WERE OBTAINED VERBALLY FROM GROWER (THEREFORE, DATA WERE NOT VERIFIED)
Please document this communication in Part 3 of this Field Data Book. No records provided

____DATA WERE TRANSCRIBED FROM WRITTEN RECORDS, BUT WERE NOT VERIFIED VB 5/8/14

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 5/8/14

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Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 5. TRIAL SITE INFORMATION:

H. MAINTENANCE FERTILIZERS AND PESTICIDES (INCLUDE ADJUVANTS)

INSTRUCTIONS: Enter all maintenance pesticide and fertilizer applications during the trial. Note the date the chemical was applied, the ***active ingredient*** *applied, along with the trade name* ***(e.g. carbaryl/SEVIN 80 S)****, the application rate of chemical and the units measured (i.e. lbs active ingredient per acre or pints product per acre), the purpose of the chemical (e.g., fertilizer, weeds, insects) and initials of the person responsible for direct supervision of the application with date of data entry. If two or more chemicals were tank mixed, list them together and bracket the tank mix on the form. If the crop was established from transplants, include all maintenance chemicals applied to the plants prior to transplanting. If treated seed was used, list treatment chemical (Date Applied would be "NA").*

If a facility or grower's list of all maintenance chemical applications is inserted here, the applications to the plots in this trial must be notated in some way to distinguish them from applications made to other areas of the farm or research facility.

DATE APPLIED	Active Ingredient	TRADE NAME	RATE *(units)*	PURPOSE	INITIALS/DATE
2/25/14	Glyphosate	Round up	1% solution	Weed control	KB 2/25/14
4/8/14	Urea	Ur32	40lbs N/A	Fertilizer	KB 4/8/14
		KB 6/5/14			

MAINTENANCE FERTILIZERS AND PESTICIDES DATA ARE (*Check all that apply*):

ORIGINAL DATA X TRUE COPY____ TRANSCRIBED____

IF MAINTENANCE FERTILIZERS AND PESTICIDE DATA ARE TRANSCRIBED, check appropriate line below

KB 6/5/14
____DATA WERE VERIFIED BY _____
(Print name above of someone other than transcriber and Quality Assurance)

____DATA WERE OBTAINED VERBALLY FROM GROWER (THEREFORE, DATA WERE NOT VERIFIED)
Please document this communication in Part 3 of this Field Data Book.

____DATA WERE TRANSCRIBED FROM WRITTEN RECORDS, BUT WERE NOT VERIFIED

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 6/5/14

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Nitrapyrin / Lettuce
ID No. A2659.14-CA01

FIELD ID NO: Skiles

IR-4 FIELD DATA BOOK

PART 5. TRIAL SITE INFORMATION:

I. CROP DESTRUCTION

INSTRUCTIONS: Describe how the remaining crop (after the completion of this field trial) has been destroyed or handled in such a way that it is not consumed as a human food or animal feed. Include the date(s) of destruction or handling activities. If the (leftover) treated crop was not destroyed because the pesticide use in this trial is registered in your state or territory or province, then that should be indicated here:

The remaining treated crop was disced into the ground with a tractor and disc on 5/29/14

5/29/14

SOURCE OF DATA: Direct entry
(Facility records, grower's records, etc.)

DATA WERE OBTAINED VERBALLY FROM GROWER: YES_____ NO ✓

Please document this communication in Part 3 of this Field Data Book.

ABOVE DATA ENTERED BY: Kari Skiles *DATE* 5-29-14

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University of California Kearney Agricultural Research Extension (UCKARE)
IR-4 Program

Crop Destruct Information

Crop destruct conducted within test plot:

Access to test plots at the UCKARE facility is forbidden unless accompanied by authorized research personnel. The facility is fenced on all sides and gates are locked after business hours. Plots are secure before, during, and after trials, including through time of crop destruct.

Crop destruct conducted at the designated UCKARE Crop Destruct area:

The designated Crop Destruct area at UCKARE is also secured within the perimeter of the fence, with access forbidden unless accompanied by authorized research personnel. It is clearly posted with signs at both field access points indicating Danger, Crop Destruct, do not take, do not eat. Qualified UCKARE Farming Operations personnel disc all crop destruct material in that area into the ground in a timely manner, according to demand.

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Page: 30

Signature David Emmes Date 6-13-11

Authentic Copy-Original in UCKARE Records VB 5/29/14 FIELD ID NO:

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Application

Part 6

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

A. EQUIPMENT

*INSTRUCTIONS: Complete a separate form for **each piece** of test substance application equipment used in the trial.*

EQUIPMENT USED FOR **APPLICATION NUMBER(S)** 1 TRT02 1 TRT03- 6 4/17/14 (CE) 4/4/14

EQUIPMENT IDENTIFIER[1] R+D Backpack Sprayer Regulator #X2

[1]*Each test substance application equipment must have a unique identifying name or code*

APPLICATION EQUIPMENT TYPE *(Check one)* TRACTOR X (CE) 4/4/14 BACKPACK X GRANULAR ___ 4/4/14

OTHER ___ *(Describe)* ___

PROPELLANT *(Check one)* CO_2 X COMPRESSED AIR ___ PUMP ___ 4/4/14

OTHER ___ *(Describe)* ___

TYPE OF APPLICATION *(Check all that apply)*

1) FOLIAR ___ TO THE GROUND X

2) BROADCAST ___ BANDED X DIRECTED ___ IN-FURROW ___ 4/4/14

3) OTHER ___ *(Describe)* ___

NUMBER OF PASSES THAT ARE NEEDED TO TREAT THE PLOT 8

NUMBER OF NOZZLES OR HOPPER OUTLETS USED		1	
MESH SIZE USED IN THE STRAINERS	100	SPACING BETWEEN NOZZLES OR HOPPER OUTLETS	none
NOZZLE BRAND/TYPE/SIZE *(e.g. T-JET 8004, even flat fan)*:		T-Jet 8001 EVS Flat Fan	

TREATED AREA[2] 0.5 ft band x 8 passes x 80 ft length of plot Sprayed = 320 ft^2

[2]*Calculated width of nozzle discharge pattern (CWNDP) at proper boom height X length of plot sprayed or treated. For a broadcast application, CWNDP = (# of nozzles X nozzle spacing). For a banded application, CWNDP = # of nozzles X swath per nozzle. If application is foliar or soil directed enter row width X # of rows X length of plot sprayed or treated; treated row width may differ from actual row width when the actual row width is wider or narrower than local commercial practices. In this circumstance, the application rate should be calculated using a local commercial row width, and an explanation should be included on this page or inserted behind this page. Contact the Study Director if guidance is needed.*

DOES TREATED AREA = PLOT AREA (from Parts 5C and 5F)? YES ___ NO ✓

IF NO, PLEASE EXPLAIN: The treated area is 320 ft but the actual plot area is 20 ft x 80 ft = 1600 ft^2

4/4/14

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 4/4/14

Total number of pages in this section at initial pagination: 29

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Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

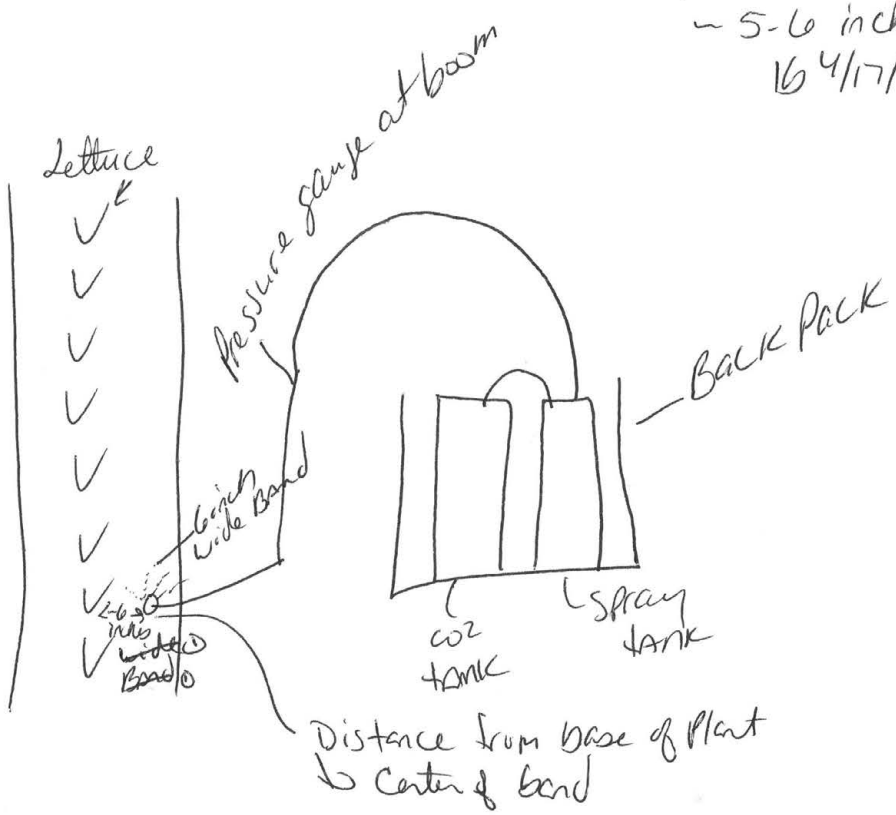
B. DIAGRAM OF APPLICATION EQUIPMENT

EQUIPMENT USED FOR **APPLICATION NUMBER(S)** 1 TKT02 1 TKT03 -6 4/17/14

*INSTRUCTIONS: Complete a separate form for **each piece** of test substance application equipment used in the trial. Sketch a diagram and/or provide clear photograph of application equipment. Include the relative location and size of the target crop and the nozzle/hopper outlet placement and application pattern in relation to crop, in the sketch or photograph. In addition, on the sketch or photograph assign each nozzle or hopper outlet a unique number.*

Cwpht TKT02
~ 1 inch

TKT03
~ 5-6 inches
16 4/17/14



① Entry error. 16 4/4/14

ABOVE DATA ENTERED BY: Lori Skiles *DATE:* 4/4/14

PART 6 PAGE 2 Trial Year 2014

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Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

C. DISCHARGE CALIBRATION FOR **APPLICATION NUMBER** 1 TRT02

INSTRUCTIONS: Complete a copy of this form (PHOTOCOPY IF NECESSARY) for additional times when a complete calibration or calibration-recheck of application equipment is required.

EQUIPMENT IDENTIFIER R+O Back pack Sprayer Regulator #2 LE KF 7-29-14

DISCHARGE CALIBRATION DATE 4/4/14 PERFORMED BY KO OK *(INITIALS)*

APPROXIMATE TIME OF DAY THAT THE CALIBRATION WAS PERFORMED 8:55 Am

PRESSURE OR OTHER STANDARD SETTING UTILIZED IN CALIBRATION 30 PSI

DISCHARGE UNITS MEASURED *(e.g. ml, oz., grams)* mls

INSTRUMENT USED TO MEASURE WATER *(e.g. 100 ml graduated cylinder)* 250 ml graduated cylinder

BRIEFLY DESCRIBE PROCEDURE USED TO CHECK DISCHARGE CALIBRATION 2ml increments The spray nozzle was caught three times into a 250 ml graduated cylinder. KO 4/4/14

DISCHARGE CALIBRATION *Record time applicator is allowed to discharge. Collect output from each nozzle or hopper. Record this value in "RUN" Row 1 under the appropriate outlet. Calculate the total and average discharge for all the nozzles/hoppers. Entry prompts have been provided for 3 discharge calibration runs. Calculate sums and averages of each nozzle/hopper outlet AND whether the results are within 5% (if applicable). Show all calculations.*

RUN	TIME (sec)	Nozzle/hopper Outlet Number Along Boom (see equipment diagram for nozzle numbers)													
		1	2	3	4	5	6	7	8	9	10	11	Total	Output/ Nozzle	Output/ Second
1	30.28	150													
2	30.31	152													
3	30.19	152													
Total (required)	90.78	454													
Average (optional)															

KO 4/4/14

CALCULATIONS:

Total Boom Output 454 mls ÷ Total Catch Time 90.78 Sec = 5.00 mls/sec

Calibrated with undiluted Un-32

Was this a recheck of discharge calibration or a target output? *(Check one)* YES_____ NO ✓

If yes, were results within 5% of original calibration or target output? *(Check one)* YES_____ NO_____

If this is a 3-discharge calibration run, are the averages (last column on the right) of the second and third runs within 5% of the first run? *(Check one)* YES ✓ NO_____ KO 4/4/14

An output consisting of an average of three runs or a target output may be used when calculating the sprayer output and amount of test substance to use. If this is a recheck (one run) then the results of the original calibration must be used. If the output result of the recheck is more than 5% different than the original calibration result, then two more runs are needed to produce a new, full calibration. The original calibration data, or a true copy, must be in this field data book.

ABOVE DATA ENTERED BY: Keri Skiles DATE: 4/4/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE_____

FIELD ID NO: _ Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

D. SPEED CALIBRATION FOR **APPLICATION NUMBER(S)** 1 TRT 02

INSTRUCTIONS: Complete a separate form for additional times when a complete calibration or calibration- recheck of application equipment is required.

EQUIPMENT IDENTIFIER R+D Backpack sprayer Regulator # 2

SPEED CALIBRATION DATE 4/4/14 PERFORMED BY KS *(INITIALS)*

TERRAIN OF CALIBRATION TRACK *(e.g. tilled field)* Dirt Road

BRIEFLY DESCRIBE PROCEDURE USED FOR SPEED CALIBRATION The back pack and spray boom were walked three times over a distance of 100 ft. The time required to walk 100ft was measured with a Stop watch.

SPEED CALIBRATION: *Calculate the speed of the application equipment. If appropriate, note the gear setting and /or RPM setting used in the speed calibration. Indicate the distance (in feet) of the track on which the application equipment was tested to determine speed (e.g. speed of application equipment tested for 100 ft.). The speed is calculated by dividing the length of test track (in feet or meters) by the time needed to cover that length (in seconds). Entry prompts have been provided for 2 additional runs. If this is a recheck, calculate the result is within 5% of the original calibration. Show all calculations.* ***For studies beginning in 2011 or later, a speed recheck (one run) is required whenever an output recheck is performed.***

RUN	GEAR	RPM	Length of test track	TIME (sec)	CALCULATED SPEED (include units)
1	Walk		100ft	34.93	2.86 ft/sec
2	↓		↓	35.36	2.83 ft/sec
3	↓		↓	34.23	2.92 ft/sec
Total of test run times (sec)		104.52	Average time (sec)	34.84	Average speed 2.87 ft/sec

CALCULATIONS:
100 ft ÷ 34.93 seconds = 2.86 ft/sec
100 ft ÷ 35.36 seconds = 2.83 ft/sec
100 ft ÷ 34.23 seconds = 2.92 ft/sec

Target Pass Time = 34.84 Seconds x 80 ft / 100 ft = 27.87 Seconds/ 80 ft

WAS THIS A RECHECK OF SPEED CALIBRATION? *(Check one)* YES_____ NO KS 4/4/14
IF YES, WERE RESULTS WITHIN 5% OF ORIGINAL CALIBRATION? *(Check one)* ~~YES~~_____ ~~NO~~ KS 4/4/14
The original calibration data, or a true copy, must be in this field data book.

NOTE: A target speed may be used for application calculations, rather than the mean of three runs, as long as the mean of the three runs in the speed calibration is within 5% of the target speed.
WAS THIS A CHECK OF A TARGET SPEED? *(Check one)* YES_____ NO ✓
IF YES, WERE RESULTS WITHIN 5% OF TARGET SPEED? *(Check one)* ~~YES~~_____ ~~NO~~ KS 4/4/14

ABOVE DATA ENTERED BY: Lori Skiles *DATE:* 4/4/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE_____

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

E. DELIVERY RATE CALIBRATION FOR **APPLICATION NUMBER(S)** 1 TU02

INSTRUCTIONS: Complete a separate form for each application, unless the same parameters are used-- you are using the same equipment, and have performed a recheck to confirm the result of the full calibration. Determine the rate of delivery from the application equipment. Briefly describe the procedure, including formulas used to determine delivery rate calibration. Show all calculations and units. Equations used in electronic (computer software) calculations in this trial must be transcribed or printed out and attached here. Computer-generated values (as opposed to those entered by the field cooperators) must be reviewed and clearly delineated by circling, initialing, and dating.

PROCEDURE/FORMULA:

GPA =

$$\frac{\text{Total Boom Output (mls)}}{\text{Total Catch Time (sec)}} \times \frac{\text{Average seconds to travel 100 ft.}}{\text{Boom Swath Width (.5 ft)} \times \text{Calibrated Distance (100 ft)} = \text{ft}^2} \times \frac{\text{ft}^2}{\text{acre}} \times \frac{\text{1 Gallon}}{\text{3785 ml}} =$$

CALCULATIONS:

$$\frac{454 \text{ mls}}{90.78 \text{ sec.}} \times \frac{34.84 \text{ sec}}{50 \text{ ft}^2} \times \frac{43560 \text{ ft}^2}{\text{Acre}} \times \frac{\text{1 Gallon}}{\text{3785 mls}} = 40.10 \text{ GPA}$$

ABOVE DATA ENTERED BY Keri Skiles *DATE:* 4/4/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE _____

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: __

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

F. VOLUME, MIXING AND DILUTION CALCULATIONS FOR **APPLICATION NUMBER(S)** 1 T702

INSTRUCTIONS: Complete a separate form for each application, unless there are no changes in multiple applications. Show all calculations, formulas, and results below, define units of measure, and cite the initials of the person performing the calculations. Equations used in electronic (computer software) calculations in this trial must be transcribed or printed out and attached here. Computer-generated values (as opposed to those entered by the field cooperators) must be reviewed and clearly delineated by circling, initialing, and dating.

Treated Area = 8 passes (0.5 ft x) ft x 80 ft = 320 ft²

40.10 GPA x $\frac{320 \text{ ft}^2}{43560 \text{ ft}^2}$ x $\frac{3785 \text{ mls}}{\text{Gallon}}$ = 1114.99 mls Required Volume

Overage factor = $\frac{3000 \text{ mls (Total Volume)}}{1114.99 \text{ mls (Required Volume)}}$ = 2.690607091

1114.99 mls x Overage Factor 2.690607091 = 3000 mls Total Volume

Test Substance Rate 0.5 lbs ai/Acre 1.85 lbs ai/Gallon

$\frac{0.5 \text{ lbs ai}}{\text{Acre}}$ x $\frac{1600 \text{ ft}^2}{43560 \text{ ft}^2/\text{Acre}}$ x $\frac{1.0 \text{ gallon}}{1.85 \text{ lb ai}}$ x $\frac{3785 \text{ mls}}{\text{Gallon}}$ = 37.57 mls

37.57 mls x $\frac{2.690607091}{\text{Overage Factor}}$ = 101.1 mls T.S.

DESCRIBE HOLDING AND TRANSPORT OF TEST SUBSTANCE FROM STORAGE AREA TO LOCATION OF TANK MIXING *(E.g.: "Test substance held securely in an insulated cooler during transport to field site in the bed of a pickup truck" or "Tank mix prepared within walking distance of the chemical storage building")*

The test substance was transported ambient in a plastic tray inside a utility box on the back of a pick up truck.

16 4/4/14

ABOVE DATA ENTERED BY: Keri Skiles DATE: 4/4/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
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FIELD ID NO: _ Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

G. APPLICATION INFORMATION FOR **APPLICATION NUMBER** 1 TRT02 APPLICATION DATE 4/4/14

HAS THE APPLICATION EQUIPMENT BEEN USED SINCE THE LAST CALIBRATION/RECHECK WAS PERFORMED? *(Check one)* YES_____ NO X (If YES, then a recheck is needed.)

INSTRUCTIONS: **Complete a separate form for each application date.** *Complete one column for each treated plot* **(use the Treatment Number as indicated in the protocol).** *Provide the name of the test substance (common chemical name or chemical code number); the batch or lot number of the test substance; the approximate time the test substance was mixed with the carrier and the approximate time the mixture was applied to the plots, along with* ***the initials of the person(s) mixing and spraying the tank mix****; the time of additional agitation (if any); the unique name or code for the application equipment used to apply this treatment; the placement of the test substance (e.g. broadcast, in-furrow, directed, knifed-in, banded); the amount of carrier, formulated product and other additives in the mix; the measuring equipment with increments; the distance (include units) of the nozzles above the canopy or ground (indicate which); the pressure in pounds per square inch at the boom; if treatment(s) were incorporated, the method and/or equipment used to incorporate the test substance mix (e.g. disked, rotovator, irrigated, etc.), depth to which the test substance was incorporated* ***or*** *the amount of water used to move the test substance into the soil; the time after treatment the incorporation activity was performed; and the carrier (normally water), its source (e.g. farm pond, city water), pH of the carrier and its temperature, and the equipment used to measure the carrier pH.*

	TRT Number 02	
NUMBER OF DAYS SINCE PREVIOUS APPLICATION	None	TIME OF ADDITIONAL AGITATION/INITIALS (if applicable) e.g. "10:00" or "continuous" or "just prior to application"
TEST SUBSTANCE	TSN 305177	
BATCH/LOT NUMBER	ENBK-137873-005	
TIME MIXED/INITIALS	10:02 Am KS	Just Prior to application
TIME APPLIED/INITIALS	10:10 Am KS	
EQUIPMENT IDENTIFIER	R+D Back Pack Sprayer Regulator #2	
PLACEMENT OF TEST SUBSTANCE	Soil side dress banded	
TANK MIX AMOUNTS		MEASURING EQUIPMENT with INCREMENTS*
CARRIER (starting volume of water)	3000 ml/s	
VOLUME of WATER REMOVED from starting volume (if applicable)	101.1 ml/s	Refer to following page KS 4/4/14
TEST SUBSTANCE (formulated product)	101.1 ml/s	page KS 4/4/14
ADJUVANT OR SURFACTANT	None	
TOTAL VOLUME OF TANK MIX	3000 ml/s	*e.g. 1000 mL grad. cylinder/10 ml incr.
NOZZLE DISTANCE from TARGET	~ 4 inches	ORDER IN WHICH ITEMS WERE ADDED TO SPRAY MIXTURE* W=Water, TS=Test Substance, A=Adjuvant *e.g. 1-W, 2-TS, 3-A, 4-W
PSI AT BOOM	30	
INCORPORATION - Methodology and/or Equipment - DEPTH - TIME	Overhead Sprinkler irrigation Depth not known 11:23 Am to 1:23 Pm	
CARRIER SOURCE/TYPE	UCKAC Well water	
CARRIER pH/TEMPERATURE	6.5 56 °F	
EQUIPMENT used to MEASURE pH	pH Strip	

ABOVE DATA ENTERED BY: Kari Skiles *DATE:* 4/4/14

Description of Equipment Used to Measure Liquid Test Substances, Adjuvant and Carrier Water

FIELD ID No. ___ Nitrapyrin / Lettuce ID No. A2659.14-CA01 Skiles ___ **Application No.** 1 TK102

The pipettes used to measure test substances or adjuvants are 5 ml, 10 ml and 25 ml (TD) plastic pipettes. The 5 ml and 10 ml pipettes measure in 0.1 ml increments and the 25 ml pipette measures in 0.2 ml increments.

Removed Ln-32. no water used

The following pipettes were used in this study:

Equipment used to remove volume of water: 25 ml pipette

Test Substance	Adjuvant	
____ 5 ml	____ 5 ml	X No Surfactant Used
____ 10 ml	4/4/14 Vb ____ 10 ml	____ T.S. Mixed Prior to Surfactant
X 25 ml	____ 25 ml	____ Surfactant Mixed Prior to T.S.

The graduated cylinders used to measure test substance, adjuvant or carrier water are 50,100, 250, 500, 1000 and 4000 mls. The 50 and 100 ml cylinders measure in increments of 1 ml, 250 ml cylinder in 2 ml increments, 500 ml cylinder in 5 ml increments, 1000 ml cylinder in 10 ml increments and the 4000 ml cylinder in 50 ml increments. Carrier water for airblast sprays is measured with a Scienco flow meter which measures water out to hundredths (i.e. 1.00)

The following cylinders or flow meter were used in this study:

Test Substance	Adjuvant	Carrier ~~Water~~ Ln 32 form change Vb 4/4/14
____ 50 ml	____ 50 ml	____ 50 ml
____ 100 ml	____ 100 ml	____ 100 ml
____ 250 ml	4/4/14 Vb ____ 250 ml	____ 250 ml
____ 500 ml	____ 500 ml	____ 500 ml
____ 1000 ml	____ 1000 ml	____ 1000 ml
____ 4000 ml	____ 4000 ml	X 4000 ml
		____ Scienco Flow meter

Signature: Dani Skiles **Date:** 4/4/14

Part 6 Page: 8

Nitrapyrin / Lettuce
FIELD ID NO: ID No. A2659.14-CA01
Skiles

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

H. ADDITIONAL INFORMATION FROM **APPLICATION NUMBER** 1 TRT02

APPLICATION DATE 4/4/14 *(Complete a separate form for each application date)*

PLANT GROWTH & ENVIRONMENTAL DATA AT THE TIME OF APPLICATION	Enter data in this column
CROP HEIGHT *(Measure or estimate crop height, include units of measurements)*	1 inch
CROP GROWTH STAGE *(e.g. seed, vegetative, bud, bloom, fruiting, #true leaves)*	Vegetative
CROP VIGOR *(e.g. poor, fair, good, variable)**	Good
PLANT SURFACE MOISTURE *(Check one)*	**SATURATED**__ **DAMP** X **DRY**__ **NA**__
ESTIMATED % OF SOIL AREA COVERED BY CROP CANOPY	2%
MEASURED AIR TEMPERATURE *(Check F or C)*	76.8 **°F** X **°C**__
MEASURED WIND SPEED *(Check MPH or Km/Hr)*	0.0-0.5 **MPH** X **Km/Hr**__
WIND DIRECTION FROM *(Check one)*	**N**__ **NE**__ **E**__ **SE** X **S**__ **SW**__ **W**__ **NW**__ or **NO WIND**__
ESTIMATED % OF CLOUDS IN THE SKY	40
MEASURED RELATIVE HUMIDITY%	41
DEW *(heavy, light, none, etc.)*	None
DESCRIPTION OF SOIL TILTH *(smooth, firm, packed, cloddy, etc.)*	Smooth
ESTIMATE OF SOIL SURFACE MOISTURE *(wet, moist, dry, etc.)*	Slightly Moist
SOIL TEMPERATURE *(Check F or C)*	54 **°F** X **°C**__
DEPTH OF MEASUREMENT OF SOIL TEMPERATURE *(Check INCHES or cm)*	4 **INCHES** X **cm**__

*IF CROP VIGOR IS POOR OR VARIABLE, EXPLAIN: _____

4/4/14

BRIEFLY DESCRIBE PROCEDURE USED TO CLEAN APPLICATION EQUIPMENT The spray boom and spray equipment was rinsed with water, rinsed with Soap and water, then rinsed with water.

4/4/14

CLEANED BY DK *(Initials)*

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 4/4/14

FIELD ID NO: _

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

I. PASS TIMES FOR **APPLICATION NUMBER** 1 TRT02

APPLICATION DATE 4/4/14 *(COMPLETE A SEPARATE FORM FOR EACH APPLICATION DATE)*

RECORD PASS TIME AND PASS DIRECTION - *Complete the table by providing the time required to make each pass of the application equipment through the plot and direction of that pass (e.g. NE).*

	TREATMENT 02		TREATMENT _		
PASS NUMBER	TIME (sec)	DIRECTION	PASS NUMBER	TIME	DIRECTION
1	28.34	E→W	1		
2	27.22	W→E	2		
3	27.25	E→W	3		
4	27.10	W→E	4		
5	27.84	E→W	5	VB 4/4/14	
6	27.84	W→E	6		
7	27.91	E→W	7		
8	27.89	W→E	8		
9			9		
10	VB 4/4/14		10		
11			11		
12			12		
TOTAL PASS TIME	221.39 Sec				

PROVIDE A BRIEF NARRATIVE SUMMARY OF THE APPLICATION

(E.g. *"Test substance was applied to the treated test plot in two passes; one pass down each side of the row. Each pass was applied to the soil, in a 3 ft. band out from the tree, with the spray boom 24 inches above the soil."*)

Practice Pass time = 28.18 sec / 80ft
The test substance was applied to tet02 test plot in 8 passes, one pass down each crop row on the outside of the row on the bed shoulder. Each pass was applied to the soil in a 6 inch wide band with a single spray nozzle ~ 4 inches above the soil surface.

VB 4/4/14

NARRATIVE ENTERED BY 16 *(Initials)*

ABOVE DATA ENTERED BY: Ken Skiles *DATE:* 4/4/14

FIELD ID NO: Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

J. POST APPLICATION RATE CONFIRMATION FOR **APPLICATION NUMBER** 1 T1T02

APPLICATION DATE 4/4/14 *(COMPLETE A SEPARATE FORM FOR EACH APPLICATION DATE)*

CALCULATION OF ACTUAL APPLICATION RATE - *Using information such as total pass time, plot size, tank mix amounts, and discharge rate (average of 3 outputs) determine the actual amount of formulated test substance applied to treated plots. Even if a target rate was used for the pre-application calculations, the data from the calibration (average of 3 outputs) must be used for calculating the application rate. (If the protocol does not include a rate of formulated product, then the amount of active ingredient should be determined.) Convert this amount to the amount applied per acre (or hectare), and determine deviation from target application in the protocol, rounded to the nearest whole percent. Show all calculations and label all units.* ***It is not sufficient to merely compare the actual pass times to the "practice" pass times.*** *The example formulas listed at the bottom of* 6J *may be used to calculate the application rate.* ***Calculations may be entered on a separate page placed after this one, if there is not enough space below.***

EXAMPLE FORMULAS: The formulas below may be used to calculate the amount of test substance (TS) applied per acre as required in Part 6I. Other formulas may be used instead; however, it is not sufficient to merely compare the actual pass times to the "practice" pass times.

1) Total Pass Time x Discharge Rate/Nozzle x #Nozzles = Volume of Tank Mix applied to Plot

2) Volume of Tank Mix applied to Plot x $\frac{\text{Amount of TS in Tank Mix}}{\text{Total Volume of Tank Mix}}$ = Amount of TS applied to Plot

3) Amount of TS applied to Plot x $\frac{\text{43,560 sq ft per acre}}{\text{Plot area treated in sq ft}}$ = Amount of TS applied per acre

****

DISCHARGE RATE (ml/sec or g/sec): 5.00 ml/sec

ACTUAL AREA TREATED (*swath width or treated row or bed width x # of passes x length of plot*): 20 ft x 80 ft = 1600 ft²

Note: *Use bed width for plots with multi-row beds.*

221.39 seconds (Total Pass Time) x 5.00 mls/sec (Discharge Rate) = 1106.95 mls Carrier Applied to Plot

1106.95 mls (Carrier Applied to Plot) x $\frac{101.1 \text{ mls (T.S. in Tank Mix)}}{3000 \text{ mls (Volume of Tank Mix)}}$ = 37.30 mls T.S. Applied to Plot

37.30 mls (T.S. applied to plot) x $\frac{43560 \text{ ft}^2/\text{A}}{1600 \text{ ft}^2 \text{ (Treated Area) total Plot area}}$ = 1015.49 mls T.S Applied Per Acre

$\frac{1015.49 \text{ mls T.S./Acre (Actual Rate)}}{1023 \text{ mls T.S./Acre (Protocol Rate)}}$ x 100 = 99.27 % of Target rate

−1 % Deviation From Target

WAS ACTUAL APPLICATION RATE WITHIN -5% TO +10% OF PROTOCOL RATE?

(Check one) YES ✓ NO ___ IF NO, **Contact the Study Director immediately.**

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 4/4/14

FIELD ID NO.: Nitrapyrin / Lettuce ID No. A2659.14-CA01 Skiles DATE: 4/4/14

FIELD NOTES FOR: Actual Gallons Per Acre Applied

TRT NO: 02 APPLICATION NO.: 1

22.39 (Total Pass Time (sec)) x 5.00 (Discharge Rate (mls/sec)) = 1106.95 (Carrier Applied to Plot(mls)) / 320 (Treated Area) ft^2

$$\frac{1106.95 \text{ Carrier Applied to Plot(mls)} \times 43560\ ft^2/\text{Acre}}{320\ ft^2 \text{ Treated Area}} = 1506835.7 \text{ mls Applied Per Acre}$$

$$\frac{1506835.7 \text{ mls Applied Per Acre}}{3785 \text{ mls/Gallon}} = 39.81 \text{ GPA}$$

Signature: Kari Skiles

Part C
Page: 12

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

K. POST TREATMENT RECORDS FOR **APPLICATION NUMBER** 1 TRT02

APPLICATION DATE 4/4/14 *(Complete a separate form for each application date)*

Was There Any Visible Phytotoxicity Damage? *(Check one)* YES___ NO X VG 4/11/14 *(Initials/date)*

If YES, then contact the Study Director. If a digital camera is available, email digital photograph(s) to the Study Director along with a detailed explanation of the damage. A written description should also be entered below:

VG 4/11/14

_____ PHYTOTOXICITY DESCRIBED BY: _____ *(Initials/date)*

DATE STUDY DIRECTOR WAS CONTACTED: _____ CONTACTED BY: _____ *(Initials/date)*

Enter the requested information below for both the first rainfall and first irrigation after each application, regardless of whether subsequent applications were made prior to the first rainfall or irrigation. The rainfall/irrigation data entered below should be transcribed from the data included in Part 9 unless otherwise indicated on this page. **If irrigation is required by the protocol to incorporate the test substance, or if the test substance is applied by irrigation, then that event should be recorded below. "NONE BEFORE HARVEST" OR "NONE BEFORE SAMPLING" MAY BE ENTERED, IF APPLICABLE.**

DATE OF FIRST RAIN *(Note the date of first rainfall after this application.)*	4/25/14
TIME AFTER APPLICATION THAT PLOTS WERE EXPOSED TO FIRST RAINFALL *(Check DAYS or HOURS) (Enter #hours if first rainfall was on the date of application.)*	21 **DAYS** X **HOURS** ___
AMOUNT OF WATER *(Check INCHES or mm)*	0.60 **INCHES** X **mm** ___
RAIN INFORMATION RECORDED BY *(Initials/date)*	VG 6/4/14
TYPE OF IRRIGATION *(e.g. overhead, trickle, flood)*	Sprinkler
DATE OF FIRST IRRIGATION *(Note the date of first irrigation after this application.)*	4/4/14
TIME AFTER APPLICATION THAT PLOTS WERE EXPOSED TO FIRST IRRIGATION *(Check DAYS or HOURS) (Enter #hours if first irrigation was on the date of application.)*	1 hr 13 min **DAYS** ___ **HOURS** ___ VG 4/4/14
AMOUNT OF WATER *(Check INCHES, mm, or mL)*	~0.54 **INCHES** X **mm** ___ **mL** ___
IRRIGATION INFORMATION RECORDED BY *(Initials/date)*	VG 4/4/11

If the data entered above differ from the rainfall/irrigation data included in Part 9, explain: _____

VG 6/4/14

_____ *Initials/date:* VG 6/4/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN FIELD DATA BOOK NO. _____ INITIALS _____ DATE _____

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

C. DISCHARGE CALIBRATION FOR **APPLICATION NUMBER** 1 TRT03

INSTRUCTIONS: Complete a copy of this form (PHOTOCOPY IF NECESSARY) for additional times when a complete calibration or calibration-recheck of application equipment is required.

EQUIPMENT IDENTIFIER R+D Backpack Sprayer Regulator #1

DISCHARGE CALIBRATION DATE 4/17/14 PERFORMED BY VD DK *(INITIALS)*

APPROXIMATE TIME OF DAY THAT THE CALIBRATION WAS PERFORMED 8:00 AM

PRESSURE OR OTHER STANDARD SETTING UTILIZED IN CALIBRATION 30 PSI

DISCHARGE UNITS MEASURED *(e.g. ml, oz., grams)* mls

INSTRUMENT USED TO MEASURE WATER *(e.g. 100 ml graduated cylinder)* 250 ml graduated cylinder 2ml increments

BRIEFLY DESCRIBE PROCEDURE USED TO CHECK DISCHARGE CALIBRATION Followed the same procedure as used on Part 6C dated 4/4/14 VD 4/17/14

DISCHARGE CALIBRATION *Record time applicator is allowed to discharge. Collect output from each nozzle or hopper. Record this value in "RUN" Row 1 under the appropriate outlet. Calculate the total and average discharge for all the nozzles/hoppers. Entry prompts have been provided for 3 discharge calibration runs. Calculate sums and averages of each nozzle/hopper outlet AND whether the results are within 5% (if applicable). Show all calculations.*

RUN	TIME (sec)	Nozzle/hopper Outlet Number Along Boom (see equipment diagram for nozzle numbers)													
		1	2	3	4	5	6	7	8	9	10	11	Total	Output/ Nozzle	Output/ Second
1	30.28	154							4	VD 4/17/14					
2	30.35	154						VD 4/17/14							
3	30.32	154													
Total (required)	90.95	462													
Average (optional)								VD							

CALCULATIONS:

Total Boom Output 462 mls ÷ Total Catch Time 90.95 Sec = 5.08 mls/sec

Calibrated with calculated Cm-3d

Was this a recheck of discharge calibration or a target output? *(Check one)* YES_____ NO ✓

If yes, were results within 5% of original calibration or target output? *(Check one)* YES_____ NO_____

If this is a 3-discharge calibration run, are the averages (last column on the right) of the second and third runs within 5% of the first run? *(Check one)* YES VD 4/17/14 NO_____

An output consisting of an average of three runs or a target output may be used when calculating the sprayer output and amount of test substance to use. If this is a recheck (one run) then the results of the original calibration must be used. If the output result of the recheck is more than 5% different than the original calibration result, then two more runs are needed to produce a new, full calibration. The original calibration data, or a true copy, must be in this field data book.

ABOVE DATA ENTERED BY: Keri Skiles DATE: 4/17/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE_____

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO:

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

D. SPEED CALIBRATION FOR **APPLICATION NUMBER(S)** 1 TRT03

INSTRUCTIONS: Complete a separate form for additional times when a complete calibration or calibration- recheck of application equipment is required.

EQUIPMENT IDENTIFIER R + D Back pack Sprayer Regulator #1

SPEED CALIBRATION DATE 4/17/14 PERFORMED BY KS KR *(INITIALS)*

TERRAIN OF CALIBRATION TRACK *(e.g. tilled field)* Dirt Road

BRIEFLY DESCRIBE PROCEDURE USED FOR SPEED CALIBRATION Followed the same procedure as used on Part 6 dated 4/4/14.

KS 4/17/14

SPEED CALIBRATION: *Calculate the speed of the application equipment. If appropriate, note the gear setting and /or RPM setting used in the speed calibration. Indicate the distance (in feet) of the track on which the application equipment was tested to determine speed (e.g. speed of application equipment tested for 100 ft.). The speed is calculated by dividing the length of test track (in feet or meters) by the time needed to cover that length (in seconds). Entry prompts have been provided for 2 additional runs. If this is a recheck, calculate the result is within 5% of the original calibration. Show all calculations.* ***For studies beginning in 2011 or later, a speed recheck (one run) is required whenever an output recheck is performed.***

RUN	GEAR	RPM	Length of test track	TIME (sec)	CALCULATED SPEED (include units)
1	Walk		100 ft	34.00	2.94 ft/sec
2	↓		↓	34.66	2.89 ft/sec
3	↓		↓	34.51	2.90 ft/sec
Total of test run times (sec)		103.17	Average time (sec)	34.39	Average speed 2.91 ft/sec

CALCULATIONS:
100 ft ÷ 34.00 seconds = 2.94 ft/sec
100 ft ÷ 34.66 seconds = 2.89 ft/sec
100 ft ÷ 34.51 seconds = 2.90 ft/sec

Target Pass Time = 34.39 Seconds x 80 ft / 100 ft = 27.51 Seconds/ 80 ft

WAS THIS A RECHECK OF SPEED CALIBRATION? *(Check one)* YES_____ NO ✓
IF YES, WERE RESULTS WITHIN 5% OF ORIGINAL CALIBRATION? *(Check one)* ~~YES~~_____ NO KS 4/17/14
The original calibration data, or a true copy, must be in this field data book.

NOTE: A target speed may be used for application calculations, rather than the mean of three runs, as long as the mean of the three runs in the speed calibration is within 5% of the target speed.
WAS THIS A CHECK OF A TARGET SPEED? *(Check one)* YES_____ NO ✓
IF YES, WERE RESULTS WITHIN 5% OF TARGET SPEED? *(Check one)* ~~YES~~_____ NO KS 4/17/14

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 4/17/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE_____

Nitrapyrin / Lettuce
ID No. A2659.14-CA01

FIELD ID NO: _____ Skiles

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

E. DELIVERY RATE CALIBRATION FOR **APPLICATION NUMBER(S)** 1 TRT03

INSTRUCTIONS: Complete a separate form for each application, unless the same parameters are used-- you are using the same equipment, and have performed a recheck to confirm the result of the full calibration. Determine the rate of delivery from the application equipment. Briefly describe the procedure, including formulas used to determine delivery rate calibration. Show all calculations and units. Equations used in electronic (computer software) calculations in this trial must be transcribed or printed out and attached here. Computer-generated values (as opposed to those entered by the field cooperators) must be reviewed and clearly delineated by circling, initialing, and dating.

PROCEDURE/FORMULA:

GPA =

Total Boom Output (mls) / Total Catch Time (sec) x Average seconds to travel 100 ft. / Boom Swath Width (2.5 ft) x Calibrated Distance (100 ft) = ft^2 x ft^2 / acre x 1 Gallon / 3785 ml =

CALCULATIONS:

462 / 90.95 mls / sec. x 34.39 / 50 sec / ft^2 x 43560 ft^2 / Acre x 1 Gallon / 3785 mls = 40.21 GPA

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 4/17/14

PART 6 PAGE 16 Trial Year 2014

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE _____

FIELD ID NO: _ Nitrapyrin / Lettuce ID No. A2659.14-CA01 Skiles

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

F. VOLUME, MIXING AND DILUTION CALCULATIONS FOR **APPLICATION NUMBER(S)** 17803

INSTRUCTIONS: Complete a separate form for each application, unless there are no changes in multiple applications. Show all calculations, formulas, and results below, define units of measure, and cite the initials of the person performing the calculations. Equations used in electronic (computer software) calculations in this trial must be transcribed or printed out and attached here. Computer-generated values (as opposed to those entered by the field cooperators) must be reviewed and clearly delineated by circling, initialing, and dating.

Treated Area = 0.5 ft x 8 passes ft x 80 ft = 320 ft^2

40.21 GPA x $\frac{320\ ft^2}{43560\ ft^2}$ x $\frac{3785\ mls}{Gallon}$ = 1118.05 mls Required Volume

Overage factor = $\frac{3000\ mls\ (Total\ Volume)}{1118.05\ mls\ (Required\ Volume)}$ = 2.683243147

1118.05 mls x Overage Factor 2.683243147 = 3000 mls Total Volume

Test Substance Rate 0.5 lbs ai/Acre 1.85 lbs ai/Gallon

$\frac{0.5\ lbs\ ai}{Acre}$ x $\frac{11600\ ft^2}{43560\ ft^2/Acre}$ x $\frac{1.0\ gallon}{1.85\ lb\ ai}$ x $\frac{3785\ mls}{Gallon}$ = 37.57 ml

37.57 mls x $\frac{2.683243147}{Overage\ Factor}$ = 100.8 mls T.S.

DESCRIBE HOLDING AND TRANSPORT OF TEST SUBSTANCE FROM STORAGE AREA TO LOCATION OF TANK MIXING *(E.g.: "Test substance held securely in an insulated cooler during transport to field site in the bed of a pickup truck" or "Tank mix prepared within walking distance of the chemical storage building")*

Followed the same procedure as used on Part 6F dated 4/4/14

4/17/14

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 4/17/14

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THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE _____

FIELD ID NO: _ Skiles

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

G. APPLICATION INFORMATION FOR **APPLICATION NUMBER** 1 TRT03 APPLICATION DATE 4/17/14

HAS THE APPLICATION EQUIPMENT BEEN USED SINCE THE LAST CALIBRATION/RECHECK WAS PERFORMED? *(Check one)* YES_____ NO X (If YES, then a recheck is needed.)

INSTRUCTIONS: **Complete a separate form for each application date.** *Complete one column for each treated plot* **(use the Treatment Number as indicated in the protocol).** *Provide the name of the test substance (common chemical name or chemical code number); the batch or lot number of the test substance; the approximate time the test substance was mixed with the carrier and the approximate time the mixture was applied to the plots, along with* ***the initials of the person(s) mixing and spraying the tank mix****; the time of additional agitation (if any); the unique name or code for the application equipment used to apply this treatment; the placement of the test substance (e.g. broadcast, in-furrow, directed, knifed-in, banded); the amount of carrier, formulated product and other additives in the mix; the measuring equipment with increments; the distance (include units) of the nozzles above the canopy or ground (indicate which); the pressure in pounds per square inch at the boom; if treatment(s) were incorporated, the method and/or equipment used to incorporate the test substance mix (e.g. disked, rotovator, irrigated, etc.), depth to which the test substance was incorporated* ***or*** *the amount of water used to move the test substance into the soil; the time after treatment the incorporation activity was performed; and the carrier (normally water), its source (e.g. farm pond, city water), pH of the carrier and its temperature, and the equipment used to measure the carrier pH.*

	TRT Number 03	
NUMBER OF DAYS SINCE PREVIOUS APPLICATION	None	TIME OF ADDITIONAL AGITATION/INITIALS (if applicable) e.g. "10:00" or "continuous" or "just prior to application"
TEST SUBSTANCE	TSN 305177	
BATCH/LOT NUMBER	ENBK-137873-005	
TIME MIXED/INITIALS	8:43 AM KS	8:47 AM
TIME APPLIED/INITIALS	8:47 AM KS	
EQUIPMENT IDENTIFIER	R+D Backpack Sprayer Regulator #1	
PLACEMENT OF TEST SUBSTANCE	Soil side dress banded	
TANK MIX AMOUNTS		MEASURING EQUIPMENT with INCREMENTS*
CARRIER (starting volume of water)	3000 mls	
VOLUME of WATER REMOVED from starting volume (if applicable)	100.8 mls	Refer to following pages
TEST SUBSTANCE (formulated product)	100.8 mls	KS 4/17/14
ADJUVANT OR SURFACTANT	None	
TOTAL VOLUME OF TANK MIX	3000 mls	*e.g. 1000 mL grad. cylinder/10 ml incr.
NOZZLE DISTANCE from TARGET	~ 4 inches	ORDER IN WHICH ITEMS WERE ADDED TO SPRAY MIXTURE* W=Water, TS=Test Substance, A=Adjuvant *e.g. 1-W, 2-TS, 3-A, 4-W
PSI AT BOOM	30	
INCORPORATION - Methodology and/or Equipment - DEPTH - TIME	Overhead Sprinkler Irrigation Depth not known 11:00 AM - 1:00 PM	
CARRIER SOURCE/TYPE	LICKANE Well water	
CARRIER pH/TEMPERATURE	6.5 66°F	
EQUIPMENT used to MEASURE pH	pH Strip	

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 4/17/14

Description of Equipment Used to Measure Liquid Test Substances, Adjuvant and Carrier Water

FIELD ID No. ___ Nitrapyrin / Lettuce ID No. A2659.14-CA01 Skiles ___ **Application No.** 1 TRT03

The pipettes used to measure test substances or adjuvants are 5 ml, 10 ml and 25 ml (TD) plastic pipettes. The 5 ml and 10 ml pipettes measure in 0.1 ml increments and the 25 ml pipette measures in 0.2 ml increments. Removed on-32. No water used

The following pipettes were used in this study:

Test Substance	Adjuvant	Equipment used to remove volume of water: 25 ml pipette
____ 5 ml	____ 5 ml	X No Surfactant Used
____ 10 ml	____ 10 ml	____ T.S. Mixed Prior to Surfactant
X 25 ml	____ 25 ml	____ Surfactant Mixed Prior to T.S.

The graduated cylinders used to measure test substance, adjuvant or carrier water are 50,100, 250, 500, 1000 and 4000 mls. The 50 and 100 ml cylinders measure in increments of 1 ml, 250 ml cylinder in 2 ml increments, 500 ml cylinder in 5 ml increments, 1000 ml cylinder in 10 ml increments and the 4000 ml cylinder in 50 ml increments. Carrier water for airblast sprays is measured with a Scienco flow meter which measures water out to hundredths (i.e. 1.00)

The following cylinders or flow meter were used in this study:

Test Substance	Adjuvant	Carrier ~~Water~~ on 32 Form Change KS 4/17/14
____ 50 ml	____ 50 ml	____ 50 ml
____ 100 ml	____ 100 ml	____ 100 ml
____ 250 ml	____ 250 ml	____ 250 ml
____ 500 ml	____ 500 ml	____ 500 ml
____ 1000 ml	____ 1000 ml	____ 1000 ml
____ 4000 ml	____ 4000 ml	X 4000 ml
		____ Scienco Flow meter

KS 4/17/14

Signature: Keri Skiles **Date:** 4/17/14

Part 4 Page: 79

FIELD ID NO: _ Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

H. ADDITIONAL INFORMATION FROM **APPLICATION NUMBER** 1 TRT03

APPLICATION DATE 4/17/14 *(Complete a separate form for each application date)*

PLANT GROWTH & ENVIRONMENTAL DATA AT THE TIME OF APPLICATION	Enter data in this column
CROP HEIGHT *(Measure or estimate crop height, include units of measurements)*	5-6 in DK 4-17-14
CROP GROWTH STAGE *(e.g. seed, vegetative, bud, bloom, fruiting, #true leaves)*	vegetative
CROP VIGOR *(e.g. poor, fair, good, variable)**	Good
PLANT SURFACE MOISTURE *(Check one)*	**SATURATED**___ **DAMP**___ **DRY** X **NA**___
ESTIMATED % OF SOIL AREA COVERED BY CROP CANOPY	20
MEASURED AIR TEMPERATURE *(Check F or C)*	71.2 **°F** X **°C**___
MEASURED WIND SPEED *(Check MPH or Km/Hr)*	0.5-2.0 **MPH** X **Km/Hr**___
WIND DIRECTION FROM *(Check one)*	**N**___ **NE**___ **E**___ **SE** X **S**___ **SW**___ **W**___ **NW**___ or **NO WIND**___
ESTIMATED % OF CLOUDS IN THE SKY	30
MEASURED RELATIVE HUMIDITY%	41
DEW *(heavy, light, none, etc.)*	None
DESCRIPTION OF SOIL TILTH *(smooth, firm, packed, cloddy, etc.)*	Smooth
ESTIMATE OF SOIL SURFACE MOISTURE *(wet, moist, dry, etc.)*	Slightly moist
SOIL TEMPERATURE *(Check F or C)*	60 **°F** X **°C**___
DEPTH OF MEASUREMENT OF SOIL TEMPERATURE *(Check INCHES or cm)*	4 **INCHES** X **cm**___

*IF CROP VIGOR IS POOR OR VARIABLE, EXPLAIN: _____

KB 4/17/14

BRIEFLY DESCRIBE PROCEDURE USED TO CLEAN APPLICATION EQUIPMENT Followed the same procedure used on Part 6H dated 4/4/14

KB 4/17/14

CLEANED BY KB *(Initials)*

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 4/17/14

FIELD ID NO: Skiles

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

I. PASS TIMES FOR **APPLICATION NUMBER** 1 TRT03

APPLICATION DATE 4/17/14 *(COMPLETE A SEPARATE FORM FOR EACH APPLICATION DATE)*

RECORD PASS TIME AND PASS DIRECTION - *Complete the table by providing the time required to make each pass of the application equipment through the plot and direction of that pass (e.g. NE).*

	TREATMENT 03		TREATMENT __		
PASS NUMBER	TIME (Sec)	DIRECTION	PASS NUMBER	TIME	DIRECTION
1	27.75	E→W	1		
2	27.59	W→E	2		
3	28.03	E→W	3		
4	27.94	W→E	4	VB 4/17/14	
5	27.28	E→W	5		
6	27.21	W→E	6		
7	27.44	E→W	7		
8	27.66	W→E	8		
9			9		
10	VB 4/17/14		10		
11			11		
12			12		
TOTAL PASS TIME	220.90 Sec				

PROVIDE A BRIEF NARRATIVE SUMMARY OF THE APPLICATION

(E.g. *"Test substance was applied to the treated test plot in two passes; one pass down each side of the row. Each pass was applied to the soil, in a 3 ft. band out from the tree, with the spray boom 24 inches above the soil."*)

Practice Pass time = 27.85 Sec/80 ft
Followed the same procedure as used on Part 6 I dated 4/4/14
only on TRT03 not TRT02 - VB 4/17/14

VB 4/17/14

NARRATIVE ENTERED BY VB *(Initials)*

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 4/17/14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

J. POST APPLICATION RATE CONFIRMATION FOR **APPLICATION NUMBER** 1 TRT03

APPLICATION DATE 4/17/14 *(COMPLETE A SEPARATE FORM FOR EACH APPLICATION DATE)*

CALCULATION OF ACTUAL APPLICATION RATE - *Using information such as total pass time, plot size, tank mix amounts, and discharge rate (average of 3 outputs) determine the actual amount of formulated test substance applied to treated plots. Even if a target rate was used for the pre-application calculations, the data from the calibration (average of 3 outputs) must be used for calculating the application rate. (If the protocol does not include a rate of formulated product, then the amount of active ingredient should be determined.) Convert this amount to the amount applied per acre (or hectare), and determine deviation from target application in the protocol, rounded to the nearest whole percent. Show all calculations and label all units.* ***It is not sufficient to merely compare the actual pass times to the "practice" pass times.*** *The example formulas listed at the bottom of* 6J *may be used to calculate the application rate.* ***Calculations may be entered on a separate page placed after this one, if there is not enough space below.***

EXAMPLE FORMULAS: The formulas below may be used to calculate the amount of test substance (TS) applied per acre as required in Part 6I. Other formulas may be used instead; however, it is not sufficient to merely compare the actual pass times to the "practice" pass times.

1) Total Pass Time x Discharge Rate/Nozzle x #Nozzles = Volume of Tank Mix applied to Plot

2) Volume of Tank Mix applied to Plot x $\frac{\text{Amount of TS in Tank Mix}}{\text{Total Volume of Tank Mix}}$ = Amount of TS applied to Plot

3) Amount of TS applied to Plot x $\frac{\text{43,560 sq ft per acre}}{\text{Plot area treated in sq ft}}$ = Amount of TS applied per acre

****

DISCHARGE RATE (ml/sec or g/sec): 5.08 ml/sec

ACTUAL AREA TREATED (*swath width or treated row or bed width x # of passes x length of plot*): 20ft x 80ft = 1600 ft²

Note: *Use bed width for plots with multi-row beds.*

220.90 seconds (Total Pass Time) x 5.08 mls/sec (Discharge Rate) = 1122.17 mls Carrier Applied to Plot

1122.17 mls (Carrier Applied to Plot) x $\frac{100.8 \text{ mls (T.S. in Tank Mix)}}{300 \text{ mls (Volume of Tank Mix)}}$ = 37.70 mls T.S. Applied to Plot

37.70 mls (T.S. applied to plot) x $\frac{43560 \text{ ft}^2/\text{A}}{1600 \text{ ft}^2 \text{ (Treated Area)}}$ = 1026.38 mls T.S Applied Per Acre

$\frac{1026.38 \text{ mls T.S./Acre (Actual Rate)}}{1023 \text{ mls T.S./Acre (Protocol Rate)}}$ x 100 = 100.33 % of Target rate

0 % Deviation From Target

WAS ACTUAL APPLICATION RATE WITHIN -5% TO +10% OF PROTOCOL RATE?

(Check one) YES X NO ___ IF NO, **Contact the Study Director immediately.**

ABOVE DATA ENTERED BY: Kari Skiles *DATE:* 4/17/14

FIELD ID NO.: _ Nitrapyrin / Lettuce ID No. A2659.14-CA01 Skiles __ DATE: 4/17/14

FIELD NOTES FOR: Actual Gallons Per Acre Applied

TRT NO: 03 APPLICATION NO.: 1

220.90 (Total Pass Time (sec)) x 5.08 (Discharge Rate (mls/sec)) = 1122.17 (Carrier Applied to Plot(mls)) / 320 (Treated Area) ft^2

$$\frac{1122.17 \text{ Carrier Applied to Plot(mls)} \times 43560 \text{ ft}^2/\text{Acre}}{320 \text{ ft}^2 \text{ Treated Area}} = 152755.39 \text{ mls Applied Per Acre}$$

$$\frac{152755.39 \text{ mls Applied Per Acre}}{3785 \text{ mls/Gallon}} = 40.36 \text{ GPA}$$

Signature: Keri Skiles

Part 9
Page: 23

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

K. POST TREATMENT RECORDS FOR **APPLICATION NUMBER** 1 T0103

APPLICATION DATE 4/17/14 *(Complete a separate form for each application date)*

Was There Any Visible Phytotoxicity Damage? *(Check one)* YES___ NO X 4/24/14 VG *(Initials/date)*

If YES, then contact the Study Director. If a digital camera is available, email digital photograph(s) to the Study Director along with a detailed explanation of the damage. A written description should also be entered below:

VG 4/24/14

PHYTOTOXICITY DESCRIBED BY: _____ *(Initials/date)*

DATE STUDY DIRECTOR WAS CONTACTED: _____ CONTACTED BY: _____ *(Initials/date)*

Enter the requested information below for both the first rainfall and first irrigation after each application, regardless of whether subsequent applications were made prior to the first rainfall or irrigation. The rainfall/irrigation data entered below should be transcribed from the data included in Part 9 unless otherwise indicated on this page. **If irrigation is required by the protocol to incorporate the test substance, or if the test substance is applied by irrigation, then that event should be recorded below. "NONE BEFORE HARVEST" OR "NONE BEFORE SAMPLING" MAY BE ENTERED, IF APPLICABLE.**

DATE OF FIRST RAIN *(Note the date of first rainfall after this application.)*	4/25/14
TIME AFTER APPLICATION THAT PLOTS WERE EXPOSED TO FIRST RAINFALL (*Check DAYS or HOURS*) (*Enter #hours if first rainfall was on the date of application.*)	8 **DAYS** X **HOURS** ___
AMOUNT OF WATER (*Check INCHES or mm*)	0.60 **INCHES** X **mm** ___
RAIN INFORMATION RECORDED BY *(Initials/date)*	VG 6/4/14
TYPE OF IRRIGATION *(e.g. overhead, trickle, flood)*	Sprinkler
DATE OF FIRST IRRIGATION *(Note the date of first irrigation after this application.)*	4/17/14
TIME AFTER APPLICATION THAT PLOTS WERE EXPOSED TO FIRST IRRIGATION (*Check DAYS or HOURS*) (*Enter #hours if first irrigation was on the date of application.*)	2Hrs 13min **DAYS** ___ **HOURS** VG 4/17/14
AMOUNT OF WATER (*Check INCHES, mm, or mL*)	~0.54 **INCHES** X **mm** ___ **mL** ___
IRRIGATION INFORMATION RECORDED BY *(Initials/date)*	VG 4/17/14

If the data entered above differ from the rainfall/irrigation data included in Part 9, explain: _____

1 VG 6/4/14 *Initials/date:* VG 6/4/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN FIELD DATA BOOK NO. _____ INITIALS _____ DATE _____

FIELD ID NO: _

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

L.1. DIFFERENTIATION OF MULTIPLE TRIALS CONDUCTED IN CLOSE PROXIMITY*

ARE YOU CONDUCTING MORE THAN ONE TRIAL IN THIS STUDY? YES___ NO X

IS ANOTHER FIELD RESEARCH DIRECTOR IN THIS STUDY CONDUCTING A TRIAL WITHIN 20 MILES OF YOUR TRIAL(S)? YES X NO___

If "NO" is checked twice, then no other input is needed except for signing and dating at the bottom of each page.

If "YES" is checked at least once, then an independently prepared tank-mix must be used in each trial, except in studies in which this is not applicable such as studies with granular formulations.

In order to differentiate these trials, select one option from Set 1 OR two options from Set 2.

If 3 or more trials in this study cannot be differentiated by the same options, then you should check all options that have been used, and explain below which options are differentiating between which trials.

If different crop varieties are being used as a differentiation option, then enter below information that explains why these varieties were chosen. Examples: Variety A produces large fruit, whereas Variety B produces small fruit. Variety A produces fruit with a smooth skin, whereas Variety B produces fruit with a rough skin. Varieties A and B are the two most commonly grown cultivars in this state.

If options are used that are listed in the protocol but are not listed in the table in Part 6.L.2, then enter descriptions of those options below.

Enter below any additional information that will improve the understanding of the options that have been chosen.

*Trials conducted in different calendar years are exempt from these requirements. (If separate trials by the same person or within 20 miles are conducted in late fall/early winter, then the differentiation options should be used to reduce the possibility of data rejection by a regulatory agency.)

Trial IDs of other trials in this study to which these options are being applied:

A2659.14-CA496

Additional information:

Vb 6/4/14

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 6/4/14

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FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

L.2. DIFFERENTIATION OF MULTIPLE TRIALS (IF YOU CHECKED "YES" ON THE PREVIOUS PAGE)

Check the options (in the third column) used to differentiate the trials that you are conducting in this study:

Set	Option	√	Description
1	A		Trial sites must be separated by at least 20 miles (32 km)
	B	✓	First application or planting date (for annual crops) in each trial is separated by at least 30 days
	C		Different crop variety (different size or shape at maturity, rough vs. smooth surface, different amount of foliage shielding the commodity, different rate of growth, or representative of the major varieties grown within the region)—confirm with Study Director if this option will be chosen
2	A		Spray volume must vary by at least 25% of the lower volume (minimum 10 GPA difference) Example 1, Trial A has a volume of 20 GPA and Trial B has a volume ≥ 30 GPA Example 2, Trial A has a volume of 60 GPA and Trial B has a volume ≥ 75 GPA The trial with the lowest spray volume for the first application must remain the lowest for each application; the trial with the highest must remain the highest for each, and so on
	B		Use of an adjuvant (of any suitable type) in the tank mix for one trial vs. no adjuvant in the tank mix for another trial
	C		Different foliar application type: foliar directed or foliar broadcast (Do not use this option if the label instructions for this commodity will specify one type or the other)
	D		Different granular application type: broadcast or banded (only if label supports both types)
	E		Different types of application equipment be used in each trial (for example, tractor-pulled boom sprayer, tractor-pulled spreader, airblast sprayer, axial fan orchard sprayer, proptec sprayer, cannon mist sprayer, tower sprayer, over-row sprayer, tunnel sprayer, backpack sprayer, waist pack sprayer, hand gun, hand-held spreader, or shaker can)
	F		Different spray droplet size (fine, medium, coarse, very coarse, or extra coarse) This may be accomplished by changing nozzles and/or by changing spray pressure Document in the Field Data Book the droplet size that results from the pressure and nozzles used in the trial (nozzle catalog may be used as a reference) Coarse, very course, and extra course are appropriate for herbicides only
	G		Different incorporation method for soil-applied test substance: mechanical or irrigation
	H		Different band width for soil applications: band width must vary by at least 50% of the lower width
	I		Different irrigation type (drip or furrow or sprinkler/over-the-top) (Irrigation must be applied at least once after each application, but over-the-top irrigation must not be applied within one hour of an application, and irrigation is not needed following the last application if samples are to be collected on the same day)
	J		For test substances that must be applied through drip irrigation: surface drip line or buried drip line
	K		Different planting arrangement for annual crops: single row beds or multi-row beds (two or more rows on each bed)
	L		One trial shall have trellised plants and the other shall not
	M		Different training system for fruit trees (for example, central leader or open center)
	N		Different maturity of trees or bushes in fruit and nut studies—young trees or bushes in one trial and mature trees or bushes in the other (minimum 5 year age difference); all trees/bushes must be commercially productive
	O		Different soil series, type, or texture (only in trials in which applications are made to the soil)
	P		Different formulations of the test substance (within the types generally considered equivalent) (This option may be used only if the alternate formulation is included in Section 13 of this protocol or is added by protocol amendment)

ABOVE DATA ENTERED BY: Kyni Skiles *DATE:* 6/4/14

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FIELD ID NO: Skiles

IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS

M. APPLICATION EQUIPMENT MAINTENANCE AND REPAIR LOG

INSTRUCTIONS: Complete this form or provide equivalent information. Provide dates and a brief description of maintenance and repair work completed on the application equipment relevant to this trial. Be sure to date and initial all entries.

APPLICATION EQUIPMENT IDENTIFIER Tractor mounted R+D Backpack Sprayer Regulator #1 → #2

EQUIPMENT USED FOR **APPLICATION NUMBERS** TE102 App 1 of 1 TE103 App 1 of 1

INITIALS/DATE VD 5/28/14

RECORD DATES AND BRIEF DESCRIPTION OF ANY CALIBRATION, MAINTENANCE AND REPAIR WORK DONE ON THE APPLICATION EQUIPMENT, OR ATTACH TRUE COPIES OF THE LOGS.
ALSO RECORD SOP# FOLLOWED, IF APPLICABLE.

Initials and Date	Was Maintenance or Repair routine? (Check one) Yes	No	SOP#	Description
				Refer to following pages. VD 5/28/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
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EQUIPMENT NAME: R&D Model T Backpack Sprayer

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

CALIBRATION AND USE LOG

Date of Use	Initials	(b) Study No.	(a) Equipment Inspected	(a) Properly Calibrated	(a) Cleaned Per SOP	(a) Followed UCKARE SOP 60-4.4	Comments
2/11/14	VB	11079.14-CA114	Y	Y	Y	Y	App 1 of 4 Regulator #2
① ~~2/18/14~~	VB	~~11126.13-CA~~					
3/31/14	VB	10909.14-CA137	Y	Y	Y	Y	App 1 of 2 Regulator #1
4/4/14	VB	A2659.14-CA01	Y	Y	Y	Y	App 1 of 1 TRT02 Regulator #2
4-7-14	DF	11256.14-CA63	Y	Y	Y	Y	App 1 of 2 TRT02 only Regulator #1
4-16-14	DF	11315.14-CA36	Y	Y	Y	Y	App 1 of 2 TRT02 only
4-17-14	VB	A2659.14-CA01	Y	Y	Y	Y	App 1 of 1 TRT03 Regulator #1
4-21-14	DF	11256.14-CA63	Y	Y	Y	Y	App 2 of 2 TRT02 Regulator App 1 of 1 TRT04 ② #2
4/29/14	VB	11079.14-CA114	Y	Y	Y	Y	App 2 of 4 Regulator #2
5-12-14	VB	11118.14-CA77	Y	Y	Y	Y	App 1 of 2 TRT03 Regulator #2
5-16-14	DF	11315.14-CA36	Y	Y	Y	Y	App 2 of 2 TRT02 App 1 of 1 TRT03,04 Regulator #1
5-19-14	VB	11079.14-CA114	Y	Y	Y	Y	App 3 of 4 Regulator #1
5-19-14	VB	09934.14-CA48	Y	Y	Y	Y	App 1 of 2 Regulator #2
5-23-14	DF	09872.14-CA73	Y	Y	Y	Y	App 1 of 5 Regulator #1
5-27-14	VB	11118.14-CA77	Y	Y	Y	Y	App 2 of 3 TRT03 only Regulator #1 VB 5/28/14

(a) Y = yes; N = no; (b) Refer to study records for complete description of calibration procedures ① Entry error. VB 2/18/14

② EE DF 4-21-14

Part Page: 2 of 10

EQUIPMENT NAME: **R&D Model T Backpack Sprayer**

MAINTENANCE & REPAIR LOG

Date:	Initials:
Description of Routine Maintenance or Repair:	Nitrapyrin / Lettuce ID No. A2659.14-CA01 Skiles
Performed By:	Date Performed:
Were SOPs Followed:	SOP No.

IF NON-ROUTINE REPAIR:

1. Date mal-function discovered:
2. How was mal-function discovered:
3. Remedial action taken: No maintenance + repair done from 4/1/14 to 5/28/14

Date:	Initials:
Description of Routine Maintenance or Repair: KD 5/28/14	
Performed By:	Date Performed:
Were SOPs Followed:	SOP No.

IF NON-ROUTINE REPAIR:

1. Date mal-function discovered:
2. How was mal-function discovered:
3. Remedial action taken:

Date:	Initials:
Description of Routine Maintenance or Repair:	
Performed By:	Date Performed:
Were SOPs Followed:	SOP No.

IF NON-ROUTINE REPAIR:

1. Date mal-function discovered:
2. How was mal-function discovered:
3. Remedial action taken:

Sample Collection

Part 7

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 7. SAMPLE COLLECTION AND STORAGE

A.1. GENERAL HARVESTING INFORMATION *INSTRUCTIONS: Complete a separate form for each sampling date.*

HARVEST DATE[1] 5-19-14 **SAMPLING DATE**[2] 5-19-14 **PHI**[3] TRT02 45 TRT03-32

[1]*Record the date of crop harvest (harvest defined as crop digging, crop cutting, picking, etc.)*
[2]*Enter the date the sampled crop items were placed in sample bags (i.e. sample collection)*
[3]*Record the number of days from last application to harvest (PHI)*

IF THE PHI IS 0 DAYS, WAS THE SPRAY DRY BEFORE THE CROP WAS HARVESTED? YES___ NO___ NA X
(Check NA if PHI>0 days or if the test substance was not sprayed, e.g. a granular application.)

DESCRIPTION OF HARVESTED CROP STAGE
(E.g. commercially mature lettuce heads, blueberries mature in size (mostly blue in color), mature plums for drying)
Commercially mature leaf lettuce

Number of (check one) **Plants** X **Trees**____ **Bushes**____ **Areas** X **of the Plot from Which Each Sample was Collected**	12
Number and Location of Rows from Which Each Sample Was Collected *Examples: "6 middle rows" "All 3 rows" "1" (for single-row plot)*	6 middle rows
Minimum Number of (check one) **Fruit**____ **Heads**____ **Roots**____ **Plants** X **Other**____ (describe) **Actually Collected per Sample**	12 *(If a minimum is required by the protocol)*
Number of (check one) **Plants**____ **Trees**____ **Bushes** X **at Each End, or** (check) **Length of Row Ends**____, **That Were Not Sampled**	~5 ft
Was Less Than 50% of the Harvestable Crop Sampled? (May be determined by visual estimation)	**YES** X **NO**____ *If* **no** *is checked, contact the Study Director*
Was Each Sample Collected in a Separate Run Through the Entire Plot?	**YES** X **NO**____ *If* **no** *is checked, contact the Study Director*

HARVESTING EQUIPMENT *(Provide a brief description of harvesting equipment, including make and model numbers, if appropriate. **Do not include gloves, sample bags, coolers, or scales.**)*

Lettuce Knives

ORDER OF SAMPLE COLLECTION TRT01 Sample A, B TRT02 Sample C, D TRT03 Sample E, F

BRIEFLY DESCRIBE PROCEDURES UTILIZED TO HARVEST CROP. Provide enough details in addition to data entered above to ensure that protocol requirements have been met and to inform a data reviewer exactly how this crop was harvested. *Examples: "Hand-picked berries from one side of the row, then the other. Collected fruit from high and low, exposed and shielded areas." "Barley was cut 3-4 inches above the ground with a scythe and left on the ground to dry for hay samples. Each entire plot was cut."* ATTACH A SEPARATE SHEET IF NECESSARY.

The lettuce plants were cut with a lettuce knive just above the soil surface. As the lettuce plants were collected any dead or senesced leaves were removed ad any loose soil was brushed off with a gloved hand.

Were harvested crop items collected directly into residue sample bags? **YES** X **NO**___

IF NO, PLEASE EXPLAIN _____

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 5/19/14 5/19/14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 7. SAMPLE COLLECTION AND STORAGE

A.2. GENERAL SAMPLING INFORMATION--*Complete a separate form for each sampling date.*

DESCRIPTION OF SAMPLED CROP STAGE *(if different from harvested crop, such as dried plums, mint oil)*

Same as previous page

IF THE SAMPLING OCCURRED AFTER THE HARVEST DATE, DESCRIBE SAMPLE COLLECTION. ALSO, DESCRIBE ANY MODIFICATIONS TO THE HARVESTED CROP SUCH AS TRIMMING, CLEANING, CUTTING, DRYING AND/OR COMPOSITING SAMPLES. IF THE MODIFICATIONS ARE TOO COMPLEX TO BE DESCRIBED BELOW, ATTACH A SEPARATE SHEET THAT CLEARLY DESCRIBES THE MODIFICATION PROCEDURES

Include a description of equipment, duration of procedure(s), temperatures, estimated moisture content, etc., as appropriate.

5/19/14

CHECK ALL PROCEDURES USED TO PREVENT CONTAMINATION OF RESIDUE SAMPLES

- X UNCONTAMINATED GLOVES WORN AND CHANGED BETWEEN SAMPLES
- ___ TREATMENTS WERE SAMPLED BY DIFFERENT PEOPLE
- X PHYSICALLY SEPARATED TREATED AND UNTREATED SAMPLES
- ___ CLEANED SAMPLING EQUIPMENT BETWEEN COLLECTIONS OF EACH TREATMENT
- X OTHER, EXPLAIN: The knives were cleaned with soap + water prior to sampling, between samples and after sampling

DESCRIBE HOLDING AND TRANSPORT OF SAMPLES FROM FIELD TO FREEZER

(E.g. Sample bags placed in cooler with blue ice, then transported by pickup truck to research center for pitting. Following pit removal, sample bags were hand-carried to freezer.)

The samples were transported ambient in separate coolers in the back of a pick up truck to the freezer room and placed into IR-4 chest freezers.

ABOVE DATA ENTERED BY: Jeri Skiles *DATE:* 5/19/14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 7. SAMPLE COLLECTION AND STORAGE

B. SPECIFIC SAMPLE INFORMATION AND INVENTORY

INSTRUCTIONS: Complete this form ***or*** *provide equivalent information.* **USE A SEPARATE PAGE FOR EACH SAMPLE DATE.** *Enter the date the individual samples were collected (***do not enter the harvest date when this date is different from sample date***), the sample ID (see protocol Section 18 for Sample ID code), a brief description of the crop part sampled (e.g. turnip roots, turnip tops, tomato fruit, corn forage etc.,), the weight of the sample, the approximate time of day of* **completion of each sample collection–i.e., sample placed in sample bag following any modifications** *(e.g., 10:15 a.m.), the approximate time of day that each sample was placed in a freezer, the approximate time interval between completion of collection of each sample (***placement of the sample in sample bag***) and the placement of the sample in freezer (e.g., 45 minutes), the identification code of the freezer where the samples are stored, and the initials of the person providing the above information and the date it is entered on this form.*

SAMPLE COLLECTION DATE: 5/19/14

SAMPLE ID*	CROP FRACTION	WEIGHT (INCLUDE UNITS) (lbs)	APPROXIMATE TIME OF DAY OF COMPLETION OF SAMPLE COLLECTION	APPROXIMATE TIME OF DAY THAT SAMPLE WAS PLACED IN FREEZER	APPROXIMATE ELAPSED TIME TO FREEZER FROM SAMPLE COLLECTION	FREEZER ID	INITIALS & DATE
A	Plant w/o roots	2.56	11:23 AM	11:50 AM	27 min	UC Chest Freezer	DS 5/19/14
B	↓	3.30	11:27 AM	↓	23 min	↓	↓
C	↓	2.86	11:34 AM	↓	16 min	↓	↓
D	↓	3.00	11:37 AM	↓	13 min	↓	↓
E	↓	3.54	11:40 AM	↓	8 min	↓	↓
F	↓	3.08	11:46 AM	↓	4 min	↓	↓
			DS 5/19/14				

* See Protocol Section 18 for assigned Sample ID code

Was a GLP-maintained scale used to determine weight of residue samples? YES____ NO X

CROP DESTRUCT: Please describe in Part 5I of this Field Data Book how the (leftover) treated crop has been destroyed or handled in such a way that it cannot be consumed as a human food or animal feed.

ABOVE DATA ENTERED BY: Dori Skiles *DATE:* 5/19/14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _

IR-4 FIELD DATA BOOK

PART 7. SAMPLE COLLECTION AND STORAGE

C. FREEZER TEMPERATURE LOG

INSTRUCTIONS: Use this (or an equivalent) form when freezer temperatures are taken manually. For each day that temperatures are taken, directly record the date, the minimum and maximum temperature, the degree units (°F or °C), and provide the initials of the person entering the data. Photocopy this form if space for more freezer records is needed. When temperature records are monitored automatically, the original or certified true copy of the output (disk from data logger, computer printout, etc.) must be placed in this Field Data Book.

UNIQUE IDENTIFIER FOR FREEZER: IR-4 Chest Freezers: UTC & TRT
Enter Freezer ID—may be make/model/serial# or assigned identifier. UTC: HOBO #D UTC Freezer-3

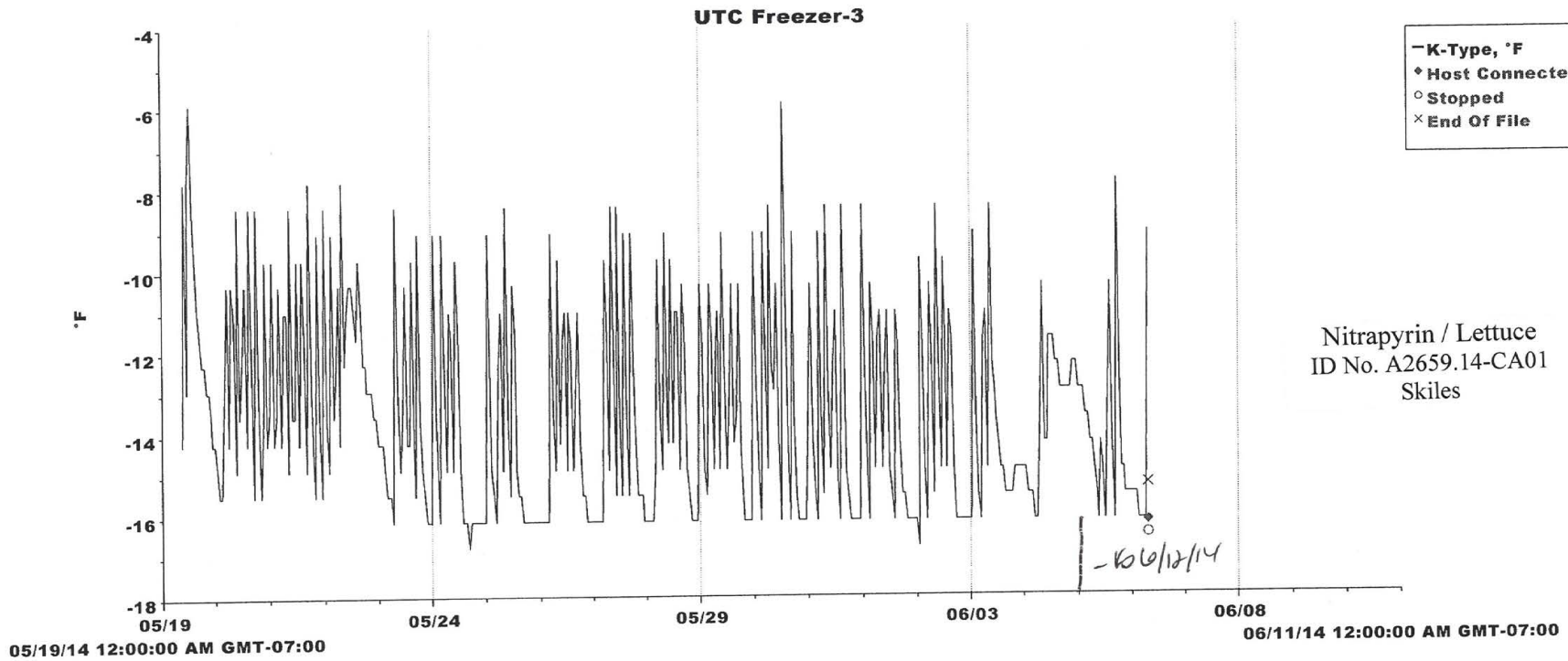
UNIQUE IDENTIFIER FOR FREEZER TEMPERATURE RECORDER: TRT: HOBO #D TRT Freezer-3
Enter Freezer Temperature Recorder ID—may be make/model/serial# or assigned identifier.

DATE	TEMP MIN/MAX	INITIALS	DATE	TEMP. MIN/MAX	INITIALS	DATE	TEMP MIN/MAX	INITIALS
			Refer to following Pages.					
			VS 6/12/14					

Unless otherwise noted in the table above, all temperature units are in (*Check one*):

°C___ °F X VS (Initials) 6/12/14 (Date)

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE_____



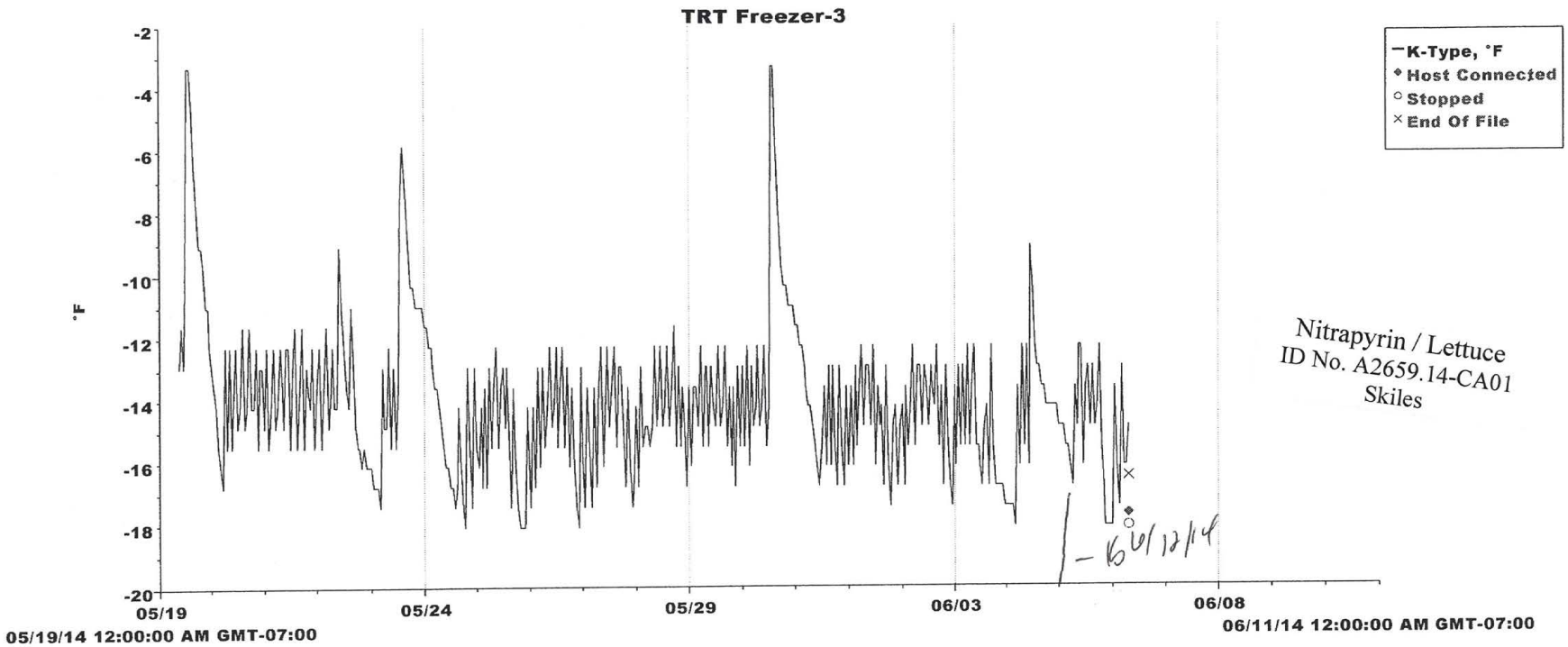
Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Untreated freezer storage
original data
5-19-14 to 6-6-14
(EE)
OR 6-6-14
OR
6-12-14

Storage Date: 5/19/14 to 6/5/14
Temp (°F): Min: -17 Max: -6
Initials: KS Date: 6/12/14

Part
Page:

This is an exact copy of the original
Original in UCKARE records
Initials: KS Date: 6/12/14



Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Treated freezer storage
original data
5-19-14 to 6-6-14
EE
OK OK 6-6-14
6-12-14

Storage Date: 5/19/14 to 6/5/14
Temp (°F): Min: -18 Max: -3
Initials: LG Date: 6/12/14

Part 7
Page: 9

This is an exact copy of the original
Original in UCKARE records
Initials: LG Date: 6/12/14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 7. SAMPLE COLLECTION AND STORAGE

D. FREEZER CONTENTS LOG

INSTRUCTIONS: Use this (or an equivalent) form to record the movement of residue samples in and out of the freezer. Note the trial ID # (e.g., 06788.99-CA45), "contents" (e.g. treated peppers), the day and time it entered the freezer and the initials of the person putting the samples into the freezer. Also note the date and time the same samples are removed from the freezer and the initials of the person removing the samples from the freezer.

UNIQUE IDENTIFIER FOR FREEZER: IR-4 Chest Freezer UTC + TRT VS 6/12/14
Enter Freezer ID—may be make/model/serial# or assigned identifier.

TRIAL ID#	CONTENTS	DAY/TIME IN	INITIALS	DAY/TIME OUT	INITIALS
	Refer to follow pages. VS			6/12/14	

PART 7 PAGE 7 Trial Year 2014

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE_____

RESIDUE SAMPLE FROZEN STORAGE LOG
Chest Freezer (TRT)
Model #: 253.16582103

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

LOCATION: Kearney Agricultural Research and Extension

Part ___ Page: ___

Date/Time Stored	Study No.	Sample Type	Sampling Interval	No. of Bags/ Sample ID	Stored By	Date/Time Removed	Removed By
4-21-14 12:09 pm	11256.14-CA63	Strawberry Fruit	0 DALA	2 O, P (TRT02)	OK	5-5-14 9:50 AM	OK
4-23-14 8:48 AM	11256.14-CA63	Strawberry fruit	2 DALA	4 G, H (C, D)	OK		
4-25-14 7:24 AM	11256.14-CA63	Strawberry Fruit	4 DALA	4 M, N (I, J)	OK		
4-28-14 7:36 AM	11256.14-CA63	Strawberry Fruit	7 DALA	2 Q, R	OK		
5-1-14 8:33 AM	11256.14-CA63	Strawberry Fruit	10 DALA	2 S, T	OK		
5-19-14 11:50 AM	A2659.14-CA01	Leaf Lettuce	45 DALA TRT02 30 DALA TRT03	4 E, F (C, D)	VB	6-5-14 9:30 AM	VB
5-22-14 9:25 AM	11311.14-CA108	Cherry Fruit	43 DALA	2 C, D	OK		
5-22-14 9:25 AM	11311.14-CA109	Cherry Fruit	43 DALA	2 C, D	OK		
5-23-14 12:18 pm	11315.14-CA36	orange fruit	7 DALA	2 G, H	OK	VB 6/12/14	
5-30-14 12:04 PM	11315.14-CA36	orange Fruit	14 DALA	2 I, J	OK		
① ~~6/1~~ 3/14 9:58 AM	09934.14-CA44	Blackberries	1 DALA	2 C, D	VB	6-5-14 9:30 AM	VB
6/4/14 13:10 AM	11304.14-CA111	Peach	1 DALA	2 E, F	VB		
6/6/14 8:18 AM	11304.14-CA111	Peach	3 DALA	2 C, D	VB	VB 6/12/14	
6-6-14 11:06 AM	11315.14-CA36	orange fruit	21 DALA	2 K, L	OK		
6/9/14 10:47 AM	11079.14-CA114	Blackberries	0 DALA ②	2 C, D	VB		

① Write over. VB 6/3/14 ② Entry error. VB 6/9/14

This is an exact copy of the original
Original in UCKARE records
Initials: VB Date: 6/19/14

(cc) VB 6/12/14

RESIDUE SAMPLE FROZEN STORAGE LOG
Chest Freezer (UTC)
Model #: 253.13009100

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

LOCATION: Kearney Agricultural Research and Extension

Date/Time Stored	Study No.	Sample Type	Sampling Interval	No. of Bags/Sample ID	Stored By	Date/Time Removed	Removed By
4-23-14 8:48 AM	11256.14-CA63	Strawberry Fruit	2 DALA	2 A,B	OK	5-5-14 9:50 AM	OK
5/19/14 11:50 AM	A2659.14-CA01	Leaf Lettuce	32 DALA	2 A,B	VS	6-5-14 9:30 AM	VS
5-22-14 9:25 AM	11311.14-CA108	Cherry Fruit	43 DALA	2 A,B	OK		
5-22-14 9:25 AM	11311.14-CA109	Cherry Fruit	43 DALA	2 A,B	OK		
6-3-14 9:58 AM	09934.14-CA44	Blackberries	1 DALA	2 A,B	VS		
6-4-14 9:47 AM	11304.14-CA111	Peach	1 DALA	2 A,B	VS	①	①
② ~~6-6-14 8:18 AM~~	~~11304.14-CA111~~	~~Peach~~	~~3 DALA~~	~~2~~			
6-9-14 10:47 AM	11029.14-CA114	Blackberries	0 DALA	2 A,B	VS	VS 6/12/14	
6-11-14 9:40 AM	10909.14-CA137	Blackberries	11 DALA	2 A,B	VS		

VS 6/12/14

This is an exact copy of the original
Original in UCKARE records
Initials: VS Date: 6/12/14

Part Page: 1 of 2

① Entry error. VS 6-6-14 ② Entry error. VS 6/6/14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 7. SAMPLE COLLECTION AND STORAGE

E. FREEZER MAINTENANCE AND REPAIR LOG

INSTRUCTIONS: Complete this form or provide equivalent information. Provide dates and a brief description of maintenance and repair work completed on the freezers relevant to this trial. Be sure to date and initial all entries.

UNIQUE IDENTIFIER FOR FREEZER: IR-4 Chest Freezer HTC + TKT KS 6/12/14
Enter Freezer ID—may be make/model/serial# or assigned identifier.

RECORD DATES AND BRIEF DESCRIPTION OF ANY CALIBRATION, MAINTENANCE AND REPAIR WORK DONE ON FREEZER.

ALSO RECORD SOP# FOLLOWED, IF APPLICABLE: SOP# UCDAVIS SOP KS 6/12/14 60-2.34

Initials and Date	Was Maintenance or Repair routine? (Check one) Routine	Non-Routine	Description
			Refer to following Pages. KS 6/12/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE_____

EQUIPMENT NAME: **IR-4 Chest Freezer (UTC)**
Model #: 253.13009100

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

MAINTENANCE & REPAIR LOG

Date: 1/22/14	Initials: KB
Description of Routine Maintenance or Repair: The freezer was shut off for deicing so the freezer could be cleaned.	
Performed By: KB	Date Performed: 1/22/14
Were SOPs Followed: Yes	SOP No. 60-2.3

~~**IF NON-ROUTINE REPAIR:**~~

1. Date mal-function discovered: KB 1/22/14
2. How was mal-function discovered:
3. Remedial action taken:

Date: 1/23/14	Initials: KB
Description of Routine Maintenance or Repair: The freezer interior and exterior was cleaned with soap and water after draining water from freezer. After cleaning the freezer was turned back on.	
Performed By: KB	Date Performed: 1/23/14
Were SOPs Followed: Yes	SOP No. 60-2.3

~~**IF NON-ROUTINE REPAIR:**~~

1. Date mal-function discovered: KB 1/23/14
2. How was mal-function discovered:
3. Remedial action taken:

Date:	Initials:
Description of Routine Maintenance or Repair: KB 6/12/14	
Performed By:	Date Performed:
Were SOPs Followed:	SOP No.

~~**IF NON-ROUTINE REPAIR:**~~

1. Date mal-function discovered:
2. How was mal-function discovered:
3. Remedial action taken:

EQUIPMENT NAME: **IR-4 Chest Freezer (TRT)**
Model #: 253.16582103

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

MAINTENANCE & REPAIR LOG

Date: 1/22/14	Initials: KB
Description of Routine Maintenance or Repair: The freezer was shut off for deicing so the freezer could be cleaned.	
Performed By: KB	Date Performed: 1/22/14
Were SOPs Followed: yes	SOP No. 60-2.3

IF ~~NON-ROUTINE~~ REPAIR:

1. Date mal-function discovered: KB 1/22/14
2. How was mal-function discovered:
3. Remedial action taken:

Date: 1/23/14	Initials: KB
Description of Routine Maintenance or Repair: The freezer interior and exterior was cleaned with soap and water after draining water from freezer. After cleaning the freezer was turned back on.	
Performed By: KB	Date Performed:
Were SOPs Followed: yes	SOP No. 60-2.3

IF ~~NON-ROUTINE~~ REPAIR:

1. Date mal-function discovered: KB 1/23/14
2. How was mal-function discovered:
3. Remedial action taken:

Date:	Initials:
Description of Routine Maintenance or Repair: KB 6/12/14	
Performed By:	Date Performed:
Were SOPs Followed:	SOP No.

IF NON-ROUTINE REPAIR:

1. Date mal-function discovered:
2. How was mal-function discovered:
3. Remedial action taken:

Sample Shipping

Part 8

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

① SP KF 7-29-14
LE KF 7-29-14

PART 8. RESIDUE SAMPLE SHIPPING

A. RESIDUE SAMPLE SHIPPING INFORMATION

INSTRUCTIONS: Complete this form for each sample shipment. ***Fax, mail, or email a true copy to the Study Director and to your Regional Field Coordinator (along with 8B).*** *Retain the original in the Field Data Book.*

WERE SAMPLES KEPT FROZEN[1] FROM SAMPLE COLLECTION DATE TO SHIPMENT? *(Check one)* YES X NO____

[1] *"Kept frozen" indicates storage at temperatures generally <0 °F (-18 °C).*

IF NO, PLEASE EXPLAIN: VS 6/5/14

DATE RESIDUE SAMPLES PACKAGED: 6-5-14 TIME: 9:30 AM X PM___ *(Check one)*

DESCRIBE PROCEDURES UTILIZED TO PACKAGE SAMPLES:
Sample A+B were placed into box 1 of 3, Samples C+D were placed into Box 2 of 3 and Samples E+F were placed into box 3 of 3 all boxes were then taped shut with clear shipping tape.
VS 6/5/14

METHOD OF SHIPMENT *(Check one)* OVERNIGHT AIR EXPRESS____ FREEZER TRUCK X

~~OTHER~~ ~~*(Describe):*~~ VS 6/5/14

DATE SAMPLES GIVEN TO CARRIER: 6-5-14 TIME: 9:50 AM X PM___ *(Check one)*

NAME OF CARRIER ACDS

Were the Chain of Custody Form (8B) and the Sample Arrival Check Sheet (8C) sent with the samples? YES X NO___

INSERT THE ORIGINAL OR VERIFIED TRUE COPY OF THE BILL OF LADING (WAY BILL) INTO THIS FIELD DATA BOOK AFTER THIS PAGE

SHIPPING ADDRESS (include the name of the person to whom the samples are being sent):
Bronson Hung
3752 Old Davis Road
Davis CA 95616-8615
Univ. of Calif.

NAME OF PERSON CONTACTED AT LAB REGARDING SHIPMENT: Bronson Hung

DATE OF CONTACT: 6/5/14 TIME: 10:21 AM X PM___ *(Check one)*

METHOD OF CONTACT (*e.g., telephone*): Fax

ABOVE DATA ENTERED BY: Dori Skiles *DATE:* 6/5/14

Total number of pages in this section at initial pagination: 10

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE_____

STRAIGHT BILL OF LADING - SHORT FORM - ORIGINAL - NOT NEGOTIABLE

THIS MEMORANDUM is an acknowledgement that a Bill of lading has been issued and is not the original Bill of Lading nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

RECEIVED, subject to the classifications and tariffs in effect on the date of of receipt by the carrier of the property described in the Original Bill of Lading.

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown) marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof if this is a rail or a rail-water shipment or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading set forth in the classification or tariff which governs the transportation of the shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

From: Ken Skiles UCKAFE Phone: 559-646-6061

Address: 9240 S. Riverbend Ave Bill To: * Becky Sisco IR-4 Project

City: Parlier State CA Date: 10-5-14

Carrier: **Agricultural Chemicals Development Services, Inc. (A.C.D.S., Inc.)**

Carrier's Pro No. _____

Shipper's Bill of Lading No. 137660

Consignee's Reference/PO No. _____

Carrier's Code (SCAC) **AGCM**

Consigned to Bronson Hung 418 CHE Phone: 530-752-4742

Destination Street 3752 old Davis Road City: Davis State: CA

Delivering Carrier **Agri. Chem. Dev. Serv., Inc. (A.C.D.S., Inc.) (Phone: 315-548-8612)** Truck/Trailer No. 503A

Additional Shipment Information **(Best Way)**

BOX NO.	DESCRIPTION / CONTENTS	WEIGHT (Subject to Corrections)	FREIGHT CHARGE**
1 of 3	Samples A + B	10 lbs	
2 of 3	Samples C + D	10 lbs	
3 of 3	Samples E + F	11 lbs	
	3		
TOTAL PIECES 3			

Project No. _____

ACDS Transfers To: ___

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Date: _____, _____, _____, _____

By: _____, _____, _____, _____

Delivery Date: _____ Received By: _____

Part 8
Page: 8

** Freight charge to be billed after delivery as per carrier's published and/or amended rates.

Notify if problem enroute or at delivery _____ (for Informational purpose only)
Name Fax No. Tel No.

* Send Freight Bill To: _____
Company Name Street City State Zip

Shipper Ken Skiles Per Carrier Ron Zodegraff Per 10/5/14 Date

THIS SHIPMENT IS CORRECTLY DESCRIBED CORRECT WEIGHT IS _____ LBS.

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

PART 8. RESIDUE SAMPLE SHIPPING

B. RESIDUE SAMPLE CHAIN OF CUSTODY FORM

INSTRUCTIONS: Complete this form for each sample shipment. ***Use separate forms if different samples from the same trial are going to different destinations.*** ***Place a true copy within each shipping container and fax, mail, or email a true copy to the Study Director and to your Regional Field Coordinator.*** *Retain the original in the Field Data Book.*

TEST SUBSTANCE Nitrapyrin

CROP Leaf Lettuce

Include protocol-specified information such as sour or sweet, small-fruited or large-fruited, processing variety, if applicable.

FIELD RESEARCH DIRECTOR Keri Skiles

PHONE# 559-646-6061 FAX# 559-646-6015

TRIAL LOCATION ~~646-6061 (559)~~ EG 6/5/14 Lickare Parlier CA

NUMBER OF BOXES SHIPPED 3 TOTAL NUMBER OF SAMPLES SHIPPED 6

DESTINATION (do not enter more than one destination) Brown Hall 3792 Old Davis Rd Davis CA 95616

CARRIER ACOS #1371660

Sample ID[1]	Treatment/Rate[2]	No. of Applics.	Date of Last Application	Date Harvested	Date Sampled	Crop Fraction[3]	LAB ID (Lab Use only)
A	TRT01/UTC	0	none	5/19/14	5/19/14	Plants w/o roots	
B	↓	↓	↓				
C	TRT02/0.56 ai/A	1	4/4/14				6/6/14
D	↓	↓	4/10/14				
E	TRT03/0.56 ai/A	1	4/17/14				
F	↓	↓	↓	↓	↓	↓	
		6 6/5/14					

[1] *See protocol for assigned ID code under Section 18, Sample ID column*

[2] *Use the rate of the last application if different applications had different rates assigned by the protocol. If there are two active ingredients (a.i.) in the test substance, enter the rate of the a.i. that is to be analyzed for that sample.*

[3] *E.g. fruit, straw, processed apple juice*

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 6/5/14

Entry error: 6 6/5/14

****

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE _____

IR-4 PROJECT	PART 8C: SAMPLE ARRIVAL CHECK SHEET

Note to Field or Processing Personnel: Place a copy of this blank form inside each of the sample boxes before shipment. If a copy of the completed form is received back from the laboratory prior to completion of the Field Data Book, then insert the form in the appropriate area of Part 8.

This form should be completed by the Laboratory Personnel, unless a similar form kept at the laboratory is used instead. Complete all blanks in this form that apply to these samples. Keep this form and any accompanying shipping forms, such as Federal Express receipts and field cooperator's residue sample shipping forms, in the raw data file for this study. ***Mail, fax, or e-mail a copy to the Field Research Director, the Regional Field Coordinator and the Study Director.*** If multiple boxes from one trial are received, each with a copy of this form, then it is only necessary to complete one form for all of the samples.

Laboratory ID# (from Protocol Part 24 or amendment):		
Chemical:	Commodity:	
Field Trial ID# (format is 00000.YY-XX##):		
Shipper: [ ]ACDS [ ]Federal Express [ ]Other:		
Shipping Reference#: VB 6/5/14	# Boxes:	
Date Received:	Rec'd by *(print name)*:	

A. CONDITION OF SAMPLES (check all that apply)

[ ]Frozen	[ ]Dry Ice Present	[ ]Fresh, Never Frozen
[ ]Thawed	[ ]Sample Bags Intact	[ ]Sample Bags Not Intact and Contents Mixed

B. FORM OF SAMPLES AS RECEIVED		Matrix (e.g., roots, leaves):	
[ ] Whole	[ ] Halved or Quartered	[ ] Sliced	[ ] Other:

C. RESIDUE SAMPLE CHAIN OF CUSTODY FORM	Received with Samples: [ ] Yes [ ] No

Please note any apparent missing samples or protocol deviations in Section E.

D. SAMPLE LOG	Project Listed on the Laboratory's Master Schedule: [ ]Yes [ ]No	
Lab Numbers Assigned:		Date:

E. COMMENTS:

Signature/Date of person filling out this form:

(Paginate if a copy of the completed form is received from the analytical laboratory.)

TRUE COPY OF ORIGINAL
THIS STAMP IS IN RED.
INITIALS TM
DATE 6/9/14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: _____

IR-4 FIELD DATA BOOK

REC'D WITH SAMPLES ON 6/9/14
BOX NO. 597
LID A2659.13-CAR14
INITIALS & DATE BH 6/9/14

PART 8. RESIDUE SAMPLE SHIPPING

B. RESIDUE SAMPLE CHAIN OF CUSTODY FORM

INSTRUCTIONS: Complete this form for each sample shipment. ***Use separate forms if different samples from the same trial are going to different destinations.*** ***Place a true copy within each shipping container and fax, mail, or email a true copy to the Study Director and to your Regional Field Coordinator.*** *Retain the original in the Field Data Book.*

TEST SUBSTANCE Nitrapyrin

CROP Leaf Lettuce

Include protocol-specified information such as sour or sweet, small-fruited or large-fruited, processing variety, if applicable.

FIELD RESEARCH DIRECTOR Keri Skiles

PHONE# 559-646-60061 FAX# 559-646-6015

TRIAL LOCATION ~~646-60161 (559)~~ EE 6/9/14 Lucas Farms Parlier CA

NUMBER OF BOXES SHIPPED 3 TOTAL NUMBER OF SAMPLES SHIPPED 6

DESTINATION (do not enter more than one destination) Brandon Hung 3792 Old Davis Rd Davis CA 95616

CARRIER ACOS #1376660

Sample ID[1]	Treatment/Rate[2]	No. of Applics.	Date of Last Application	Date Harvested	Date Sampled	Crop Fraction[3]	LAB ID (Lab Use only)	wt in lbs
A	TRT01/UTC	0	none	5/19/14	5/19/14	Plants w/o roots	24047	2.8
B	↓	↓	↓				24048	3.6
C	TRT02/0.516 ai/A	1	4/4/14				24049	3.0
D	↓	↓	4/10/14				24050	3.2
E	TRT03/0.516 ai/A	1	4/17/14				24051	3.8
F	↓	↓	↓	↓	↓	↓	24052	3.2
							TM 6/9/14	BH 6/9/14
		KG 6/5/14						
							KG 6/16/14	

[1] *See protocol for assigned ID code under Section 18, Sample ID column*

[2] *Use the rate of the last application if different applications had different rates assigned by the protocol. If there are two active ingredients (a.i.) in the test substance, enter the rate of the a.i. that is to be analyzed for that sample.* KG 6/16/14

[3] *E.g. fruit, straw, processed apple juice*

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 6/5/14

Entry error: KG 6/5/14

****

PART 8 PAGE 5 Trial Year 2014

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. A2659.14-CA01 INITIALS KG DATE 6/5/14

IR-4 NATIONAL PESTICIDE CLEARANCE RESEARCH PROGRAM

SAMPLE ARRIVAL CHECK SHEET
UNIVERSITY OF CALIFORNIA, DAVIS

INSTRUCTIONS: Complete all blanks and boxes that apply, adding comments as necessary. Place this original and any accompanying shipping documentation in the current study file for this study.

PR No.: **A2659** LAB ID No.: **A2659.13-CAR14** Field ID No.: **A2659.14-CA01**

Chemical: **Nitrapyrin** Commodity: **Lettuce (Head & Leaf)**

Cooperator: **Keri Skiles**

Shipper (✓): ☑ ACDS ☐ Federal Express ☐ _____

Shipping Reference No.: 137660 No. of Boxes: 3

Date Received: 6/9/14 By: Ivy Montalvo

A. CONDITION OF SAMPLES (✓):

TRUE COPY OF ORIGIN
THIS STAMP IS IN RE
INITIALS CT
DATE 6/9/14

☑ FROZEN ☐ THAWED
☐ DRY ICE PRESENT ☐ FRESH, NEVER FROZEN
☑ SAMPLE BAGS INTACT ☐ SAMPLE BAGS BROKEN OR OPEN AND CONTENTS MIXED
☑ RESIDUE SAMPLE CHAIN OF CUSTODY FORM (PART 8.B. OR EQUIVALENT) AND SAMPLE ARRIVAL CHECK SHEET (PART 8.C. OR EQUIVALENT) ENCLOSED.
WERE COPIES ENCLOSED IN EACH BOX? ☑ YES ☐ NO ☐ N/A

B. FORM OF SAMPLES AS RECEIVED (✓):

☑ WHOLE ☐ HALVED ☐ OTHER: _____ TOTAL # OF SAMPLES: 6

RESIDUE SAMPLE SHIPPING FORM IN AGREEMENT WITH PROTOCOL AS AMMENDED (✓):

☑ TREATMENT/RATE ☑ NUMBER OF APPLICATIONS ☑ CROP PART/STAGE
PRE-HARVEST INTERVAL? ☑ YES ☐ NO IF YES 45, 32 DAYS

C. NOTIFICATION OF ARRIVAL (✓): (Send true copies of completed forms to each.)

☑ FIELD RESEARCH DIRECTOR: **Keri Skiles**
☑ REGIONAL/ARS FIELD COORDINATOR **Rebecca Sisco**
☑ IR-4 HQ STUDY DIRECTOR: **Raymond Leonard**

D. SAMPLE LOG (✓):

☑ LAB SAMPLE ID(s) ASSIGNED: 24047 - 24058 ☑ LISTED ON MASTER SCHEDULE

E. ☑ ALL SAMPLES PRESENT IN AGREEMENT WITH RESIDUE SAMPLE SHIPPING FORM

COMMENTS: _____

Ivy Montalvo
SIGNATURE

6/9/14
DATE

Part 8
Page: 6

6/16/14

Meteorological

Part 9

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: __

IR-4 FIELD DATA BOOK

PART 9. WEATHER AND IRRIGATION RECORDS

A. DAILY FIELD TRIAL WEATHER RECORDS

INSTRUCTIONS: Document field trial weather records by manually collecting information or by providing computer generated records. ***Weather records are required from planting of annual crops or for a minimum of one month prior to the first application onto perennial crops, until last residue sample collection.*** *Weather records that are collected manually must be recorded directly on this (or equivalent) forms daily. Document computer generated weather data by placing the original or true copy of the data printout directly behind this page.* **Whether manually recorded or computer-generated, please indicate the approximate time of day that weather data were collected.** *Be sure to date and initial all entries.*

MONTH March 2014

Date/Initials	Air Temp. Min/Max	Rainfall	Irrigation/Time	Date/Initials	Air Temp. Min/Max	Rainfall	Irrigation/Time
1/				17/ KB 3/17/14			11:30Am to 1:30Pm ~0.87" ① 58"
2/			16/4/14	18/			
3/	16/4/14			19/			16/4/14
4/				20/	16/4/14		
5/				21/ KB 3/21/14			11:00Am-2:00Pm ~0.87"
6/				22/			
7/				23/			16/4/14
8/				24/			
9/				25/ KB 3/25/14			1:30Pm-2:30Pm ~0.29"
10/				26/			
11/ KB 3/11/14			9:00Am-3:00Am ~1.54 inches	27/			16/4/14
12/			16/4/14	28/			
13/				29/			
14/ KB 3/14/14			9:00Am-12:00Pm ~0.87"	30/			
15/			16/4/14	31/			
16/							

① Entered error: KB 3/17/14

TEMPERATURE UNITS: °F X °C___ *(Check one)* MOISTURE UNITS: **CM**___ **Inches** X *(Check one)*

APPROXIMATE TIME OF DAY THAT WEATHER DATA WERE COLLECTED 11:59 Am (see Weather data)

LOCATION AND AFFILIATION OF WEATHER STATION CIMIS #39 Parlier CA

Provide the location (nearest town) and affiliation (on-site, NOAA, state, etc.) of the weather station(s) from which meteorological data are obtained.

ESTIMATED DISTANCE FROM METEOROLOGICAL STATION TO FIELD TRIAL SITE ½ mile

ABOVE DATA ENTERED BY: Kevin Skiles *DATE:* 6/4/14

Total number of pages in this section at initial pagination: 10

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE _____

FIELD ID NO: _ Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

IR-4 FIELD DATA BOOK

PART 9. WEATHER AND IRRIGATION RECORDS

A. DAILY FIELD TRIAL WEATHER RECORDS

INSTRUCTIONS: Document field trial weather records by manually collecting information or by providing computer generated records. ***Weather records are required from planting of annual crops or for a minimum of one month prior to the first application onto perennial crops, until last residue sample collection.*** *Weather records that are collected manually must be recorded directly on this (or equivalent) forms daily. Document computer generated weather data by placing the original or true copy of the data printout directly behind this page.* **Whether manually recorded or computer-generated, please indicate the approximate time of day that weather data were collected.** *Be sure to date and initial all entries.*

MONTH April 2014 - KS 4/4/14

@Entry error. KS 4/4/14

Date/Initials	Air Temp. Min/Max	Rainfall	Irrigation/Time	Date/Initials	Air Temp. Min/Max	Rainfall	Irrigation/Time
1/			KS 6/4/14	17/ KS 4/17/14		(4)	11:00Am - 1:00Pm ~0.54 inches
2/				18/			
3/			(2)	19/			KS 6/4/14
4/ 4/4/14 KS		(1) KS	11:23Am - 1:23Pm ~0.54 inches	20/			
5/			KS 6/4/14	21/ KS 4/21/14			12:00Pm - 3:00Pm ~0.87"
6/				22/			
7/		KS 6/4/14		23/			
8/ 4/8/14			1:00Pm - 2:00Pm ~0.29"	24/		KS 6/4/14	KS 6/4/14
9/			KS 6/4/14	25/			
10/				26/			
11/ 4/11/14			11:00Am - 2:00Pm ~0.87 inches	27/			
12/			KS 6/4/14	28/			
13/				29/			
14/ KS (3)				30/ KS 4/30/14			8:00Am - 1:00Pm ~1.45"
15/ KS 4/15/14			11:00Am - 1:00Pm ~0.58"	31/			KS 6/4/14
16/			KS 6/4/14				

(2) Sprinkler irrigation used. KS 4/4/14 (3) Entry Error. KS 4/15/14 (4) Sprinkler irrigation used. KS 4/17/14

TEMPERATURE UNITS: °F X °C ___ *(Check one)* MOISTURE UNITS: **CM** ___ **Inches** X *(Check one)*

APPROXIMATE TIME OF DAY THAT WEATHER DATA WERE COLLECTED 11:59 Am (See Weather data)

LOCATION AND AFFILIATION OF WEATHER STATION CIMIS #39 Parlier CA

Provide the location (nearest town) and affiliation (on-site, NOAA, state, etc.) of the weather station(s) from which meteorological data are obtained.

ESTIMATED DISTANCE FROM METEOROLOGICAL STATION TO FIELD TRIAL SITE 2 ½ mile

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 6/4/14

Total number of pages in this section at initial pagination: KS 6/12/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE _____

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: __

IR-4 FIELD DATA BOOK

PART 9. WEATHER AND IRRIGATION RECORDS

A. DAILY FIELD TRIAL WEATHER RECORDS

INSTRUCTIONS: Document field trial weather records by manually collecting information or by providing computer generated records. ***Weather records are required from planting of annual crops or for a minimum of one month prior to the first application onto perennial crops, until last residue sample collection.*** *Weather records that are collected manually must be recorded directly on this (or equivalent) forms daily. Document computer generated weather data by placing the original or true copy of the data printout directly behind this page.* **Whether manually recorded or computer-generated, please indicate the approximate time of day that weather data were collected.** *Be sure to date and initial all entries.*

MONTH May 2014 - KS 6/2/14

Date/Initials	Air Temp. Min/Max	Rainfall	Irrigation/Time	Date/Initials	Air Temp. Min/Max	Rainfall	Irrigation/Time
1 /			KS 6/4/14	17/			
2/ KS 5/2/14			1:00 Pm - 3:00 Pm ~ 1.16"	18/			
3/			KS 6/4/14	19/			
4/	KS 6/4/14			20/			
5/ KS 5/5/14			11:00 Am - 1:00 Pm ~ 0.58 inches	21/		KS 6/4/14	
6/			KS 6/4/14	22/			
7/				23/			
8/ KS 5/8/14			10:30 Am - 1:30 Pm ~ 0.87"	24/			
9/			KS 6/4/14	25/			
10/				26/			
11/				27/			
12/ KS 5/12/14			11:00 Am - 3:00 Pm ~ 1.16"	28/			
13/			KS 6/4/14	29/			
14/				30/			
15/ KS 5/15/14			10:30 Am - 2:00 Pm ~ 1.02 inches	31/			
16/			KS 6/4/14				

TEMPERATURE UNITS: °F ✓ °C ___ *(Check one)* MOISTURE UNITS: **CM** ___ **Inches** ✓ *(Check one)*

APPROXIMATE TIME OF DAY THAT WEATHER DATA WERE COLLECTED 11:59 PM (See weather data)

LOCATION AND AFFILIATION OF WEATHER STATION CIMIS #39 Parlier CA

Provide the location (nearest town) and affiliation (on-site, NOAA, state, etc.) of the weather station(s) from which meteorological data are obtained.

ESTIMATED DISTANCE FROM METEOROLOGICAL STATION TO FIELD TRIAL SITE ~ ½ mile

ABOVE DATA ENTERED BY: Ken Skiles *DATE:* 6/4/14

Total number of pages in this section at initial pagination: KS 6/12/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE _____

FIELD ID NO: Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

IR-4 FIELD DATA BOOK

PART 9. WEATHER AND IRRIGATION RECORDS

A. DAILY FIELD TRIAL WEATHER RECORDS

INSTRUCTIONS: Document field trial weather records by manually collecting information or by providing computer generated records. ***Weather records are required from planting of annual crops or for a minimum of one month prior to the first application onto perennial crops, until last residue sample collection.*** *Weather records that are collected manually must be recorded directly on this (or equivalent) forms daily. Document computer generated weather data by placing the original or true copy of the data printout directly behind this page.* **Whether manually recorded or computer-generated, please indicate the approximate time of day that weather data were collected.** *Be sure to date and initial all entries.*

MONTH Feb 2014 - VB 2/14/14

Date/Initials	Air Temp. Min/Max	Rainfall	Irrigation/Time	Date/Initials	Air Temp. Min/Max	Rainfall	Irrigation/Time
1 /				17/			
2/				18/			
3/		This was		19/ VB 3/19/14			~1.02" 9:30Am-1:00Pm
4/		For plants that		20/			
5/		did not emerge.		21/			
6/			VB 3/10/14	22/			
7/				23/			
8/				24/			
9/				25/			
10/				26/			
11/				27/			
12/				28/			
13/				29/			
14/ VB 2/14/14			~0.29 inches 1:45 Pm-2:45Pm	30/			
15/				31/			
16/							

TEMPERATURE UNITS: ^{O}**F**___ ^{O}**C**___ (*Check one*) MOISTURE UNITS: **CM**____ **Inches**____ (*Check one*)

APPROXIMATE TIME OF DAY THAT WEATHER DATA WERE COLLECTED_____

LOCATION AND AFFILIATION OF WEATHER STATION_____

Provide the location (nearest town) and affiliation (on-site, NOAA, state, etc.) of the weather station(s) from which meteorological data are obtained.

ESTIMATED DISTANCE FROM METEOROLOGICAL STATION TO FIELD TRIAL SITE _____

ABOVE DATA ENTERED BY: Keri Skiles *DATE:* 6/4/14

Total number of pages in this section at initial pagination: VB 6/12/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE _____

Field ID No.: ___ Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Example Irrigation Calculations (10 psi)

2 line of drip tape with 12 inch emitter spacing at 280 feet in length puts out 4.2* gallons/minute.

Beds are 5 feet x 280 feet = 1400 ft^2

$$\frac{4.2 \text{ gallons/minute} \times 43560 \text{ ft}^2/\text{acre}}{1400 \text{ ft}^2} = 130.68 \text{ Gal/Min/Acre}$$

$$\frac{130.68 \text{ Gal/Min/Acre}}{27154 \text{ Gal/Acre Inch}} = 0.0048 \text{ Acre Inch/Min}$$

Example: Run irrigation system for one hour = 60 minutes

0.0048 acre inch/minute = 0.29 acre inch/1 hour of irrigation

* From dripline calculation chart

Signature: Ken Skiles 6/13/14 **Date:** 2/14/14

Part 6 9
Page: 5

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Field ID No: _

Example Irrigation Calculations

Solid Set Irrigation:

Rainbird sprinklers with 7/64 inch size nozzles on 30 ft. x 30 ft. spacing with the irrigation system running at 55 psi.

Rainbird calculations show that with the above nozzles, spacing and psi that the flow rate of the sprinklers is 0.27 inches per hour.

Example: Run the irrigation system for 2 hours, 0.27 inches x 2 hours= 0.54 inches of water applied.

Signature: Kari Skiles **Date:** 4/4/14

06/17/14

Part 6 9
Page: 6

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

FIELD ID NO: __

IR-4 FIELD DATA BOOK

PART 9. WEATHER AND IRRIGATION RECORDS

B. ADDITIONAL METEOROLOGICAL INFORMATION

WERE THE TEST PLOTS IRRIGATED? (*Check one*) YES X NO___

TYPE OF IRRIGATION (e.g., drip, flood, overhead sprinkler) Drip Irrigation - Solid set Sprinkler

IRRIGATION WATER SOURCE (e.g., canal, well) Well Water

IF THE TEST PLOTS WERE IRRIGATED, DESCRIBE HOW THE DAILY AMOUNTS WERE DETERMINED:
The daily amounts were determined using the calculation forms following Part 9A and the time that the irrigation system was operated.

KS 6/5/14

IF IRRIGATION DATA ARE PLACED IN THIS FIELD DATA BOOK IN A SECTION OTHER THAN PART 9*
INDICATE HERE THE PART AND PAGE NUMBERS WHERE THE DATA ARE FOUND: PART ___ PAGES ___

KS 6/5/14

**Excluding the "first irrigation after application" entries in Part 6.*

WAS WEATHER NORMAL? (*Check one*) YES ✓ NO___

Severe weather events such as damaging hail, hard frosts, tropical storms, excessive rain and unusually prolonged or high winds are cause for checking "no" above, even if such events are not considered unusual in the location of the trial.

INSTRUCTIONS: ***IF "NO" IS CHECKED,*** *then assess the impact on the crop in the test plots for this trial of any unusual weather conditions. Note whether temperatures were unusually high or low, and whether precipitation was unusually heavy or light, during the growing season of the crop, and include the dates of unusual or severe weather events. Include the initials of the person making these notes along with the date the notes are recorded.*

KS 6/5/14

ABOVE DATA ENTERED BY: Kari Skiles *DATE:* 6/5/14

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS _____ DATE _____

UNIVERSITY OF CALIFORNIA AGRICULTURE & NATURAL RESOURCES

UC IPM Online

Statewide Integrated Pest Management Program

How to Manage Pests

California Weather Data: Report

| About the data | Weather menu |

Daily weather report for PARLIER.A (CIMIS #39, Parlier)

More about PARLIER.A: Station description; More data: Daily ~ Average

Time Period: February 1, 2014 to May 19, 2014, retrieved on June 4, 2014
Note: All data were retrieved from station PARLIER.A. See retrieval table.

DATE	OBS TIME	PRECIP AMOUNT & TYPE	AIR TEMPERATURE			WIND		ETo	SOL RAD	SOIL T		WX	RELATIVE HUMIDITY	
			MAX	MIN	OBS	DD	SS			MAX	MIN		MAX	MIN
MM DD YYYY	HH:MM	(IN) *	(F) *		*		*	(IN) *	(LY) *	(F) *		*		
02-01-2014	23:59	0.00	60	33										
02-02-2014	23:59	0.19	54	36										
02-03-2014	23:59	0.00	57	37										
02-04-2014	23:59	0.00	59	33										
02-05-2014	23:59	0.00	60	34										
02-06-2014	23:59	0.55	50	46										
02-07-2014	23:59	0.09	58	44										
02-08-2014	23:59	0.01	62	51										
02-09-2014	23:59	0.00	67	52										
02-10-2014	23:59	0.00	69	52										
02-11-2014	23:59	0.00	64	49										
02-12-2014	23:59	0.00	69	43										
02-13-2014	23:59	0.00	71	46										
02-14-2014	23:59	0.00	75	47										
02-15-2014	23:59	0.00	69	47										
02-16-2014	23:59	0.00	72	53										
02-17-2014	23:59	0.00	69	46										
02-18-2014	23:59	0.00	63	41										
02-19-2014	23:59	0.00	68	43										
02-20-2014	23:59	0.00	67	40										
02-21-2014	23:59	0.00	70	41										
02-22-2014	23:59	0.00	73	42										
02-23-2014	23:59	0.00	76	43										
02-24-2014	23:59	0.00	78	43										
02-25-2014	23:59	0.00	80	44										
02-26-2014	23:59	0.21	64	52										
02-27-2014	23:59	0.21	67	54										
02-28-2014	23:59	0.72	66	53										
03-01-2014	23:59	0.00	65	52										
03-02-2014	23:59	0.00	64	47										
03-03-2014	23:59	0.00	67	44										
03-04-2014	23:59	0.00	71	59										
03-05-2014	23:59	0.00	72	53										
03-06-2014	23:59	0.02	73	57										
03-07-2014	23:59	0.00	65	50										
03-08-2014	23:59	0.00	77	44										
03-09-2014	23:59	0.00	76	52										
03-10-2014	23:59	0.00	76	50										

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

6/4/14

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03-11-2014	23:59	0.00	72	43
03-12-2014	23:59	0.00	74	46
03-13-2014	23:59	0.00	77	40
03-14-2014	23:59	0.00	78	43
03-15-2014	23:59	0.00	80	47
03-16-2014	23:59	0.00	85	46
03-17-2014	23:59	0.00	72	48
03-18-2014	23:59	0.00	73	41
03-19-2014	23:59	0.00	80	41
03-20-2014	23:59	0.00	80	44
03-21-2014	23:59	0.00	80	47
03-22-2014	23:59	0.00	76	44
03-23-2014	23:59	0.00	79	43
03-24-2014	23:59	0.00	83	45
03-25-2014	23:59	0.00	77	46
03-26-2014	23:59	0.34	63	52
03-27-2014	23:59	0.00	67	45
03-28-2014	23:59	0.00	72	44
03-29-2014	23:59	0.20	76	48
03-30-2014	23:59	0.11	65	48
03-31-2014	23:59	0.37	66	45
04-01-2014	23:59	0.04	62	42
04-02-2014	23:59	0.01	63	47
04-03-2014	23:59	0.00	67	42
04-04-2014	23:59	0.00	67	45
04-05-2014	23:59	0.00	68	45
04-06-2014	23:59	0.00	75	46
04-07-2014	23:59	0.00	87	49
04-08-2014	23:59	0.00	89	60
04-09-2014	23:59	0.00	89	53
04-10-2014	23:59	0.00	87	52
04-11-2014	23:59	0.00	88	58
04-12-2014	23:59	0.00	81	55
04-13-2014	23:59	0.00	78	52
04-14-2014	23:59	0.00	86	54
04-15-2014	23:59	0.00	87	55
04-16-2014	23:59	0.00	85	49
04-17-2014	23:59	0.00	85	52
04-18-2014	23:59	0.00	81	59
04-19-2014	23:59	0.00	83	56
04-20-2014	23:59	0.00	82	49
04-21-2014	23:59	0.00	83	52
04-22-2014	23:59	0.00	70	55
04-23-2014	23:59	0.00	73	46
04-24-2014	23:59	0.00	79	46
04-25-2014	23:59	0.60	65	48
04-26-2014	23:59	0.04	65	47
04-27-2014	23:59	0.00	72	46
04-28-2014	23:59	0.00	76	50
04-29-2014	23:59	0.00	85	49
04-30-2014	23:59	0.00	90	53
05-01-2014	23:59	0.00	93	57
05-02-2014	23:59	0.00	94	53
05-03-2014	23:59	0.00	85	55
05-04-2014	23:59	0.00	79	53
05-05-2014	23:59	0.11	75	55
05-06-2014	23:59	0.05	68	52
05-07-2014	23:59	0.00	77	48
05-08-2014	23:59	0.00	77	52
05-09-2014	23:59	0.00	79	61
05-10-2014	23:59	0.00	75	51
05-11-2014	23:59	0.00	78	46
05-12-2014	23:59	0.00	87	50
05-13-2014	23:59	0.00	92	52
05-14-2014	23:59	0.00	96	56
05-15-2014	23:59	0.00	99	58
05-16-2014	23:59	0.00	97	58
05-17-2014	23:59	0.00	89	55
05-18-2014	23:59	0.00	81	58
05-19-2014	23:59	0.00	79	50

108 records listed

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

— trial started 6/4/14

— trial end. 6/4/14

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Codes in columns with an asterisk (*) designate the station used to fill in missing data (for data to left of code).	Code	Data from
	1	Backup station 1
	2	Backup station 2
	A	Long-term averages

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

16 6/4/14

Retrieval Table

Stations used to fill in missing data
Time period: February 1, 2014 to May 19, 2014, retrieved on June 4, 2014 (108 days)

Variable	Data values from station	Data values from backup station 1	Data values from backup station 2	Data valu from ave
Precipitation	108 PARLIER.A	0 none	0 FRESNO.A	0 PARLI
Air Temperature, max/min	108 PARLIER.A	0 FRESNO.A	0 none	0 PARLI

Measurement details about PARLIER.A variables:

Air temperature: Daily max/min measured at 1.5 m (4.92 ft).
Precipitation: Daily total measured in a 20 cm (8 in) diameter gauge.
Soil temperature: Daily max/min measured at a 15 cm (6 in) depth.
Humidity: Daily max/min relative humidity measured at 1.5 m (4.92 ft).
Evapotranspiration: Calculated from CIMIS hourly values.
Solar radiation: Daily global radiation measured by Licor pyranometer at 2 m (6.5 ft)
Wind speed & direction: Daily average measured at 2 m (6.5 ft).

Top of page

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Additional Info

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
FIELD ID NO: _ Skiles

IR-4 FIELD DATA BOOK

PROTOCOL & PROTOCOL CHANGES

The protocol shall be inserted into this IR-4 Field Data Book after this protocol cover page. Sequentially insert all relevant protocol amendments and deviations that have been received from the Study Director. Protocol changes are sent only to those field trials to which they pertain, thus the changes that are received during the course of this trial may not comprise a complete set. ***Protocol changes pertinent to this trial that have been signed by the Study Director or received by the Field Research Director (FRD) after the Field Data Book has left the custody of the FRD do not need to be inserted into the Field Data Book.***

PAGES IN THIS SECTION DO NOT NEED TO BE NUMBERED.

PAGES IN THIS SECTION DO NOT NEED LINING OUT IF NO ENTRIES ARE MADE

INSTRUCTIONS FOR COMPLETING THE PROTOCOL/SOP DEVIATION FORM:
Every effort should be made to follow the protocol and standard operating procedures. If an unforeseen or an unavoidable circumstance results in a change, the Study Director must be notified as soon as practical (via phone call, email or FAX). **Also notify the Regional Field Coordinator (via phone call, fax, or cc on an email message). If possible, contact the Study Director prior to taking actions that differ from the protocol.** The Study Director will provide instructions and/or appropriate protocol change authorization. Otherwise, document the deviation with completion of this or similar form for each individual deviation. **If the deviation is faxed or emailed to the Study Director, then the original should be mailed to the Study Director. A true copy should be retained in the Field Data Book in the Protocol and Protocol Changes section.** The return copy (signed by the Study Director) should be placed in the Protocol/Protocol Changes section of the Field Data Book.

The brief description of the deviation should make clear what the protocol or SOP requirement is, and what was done that is different from this requirement. For example, *"The application interval was 10 days instead of the 7(±1) days required by the protocol."*

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

CHEMICAL/CROP/FIELD ID NO:_____

IR-4 FIELD DATA BOOK

DEVIATION FORM **(PHOTOCOPY THIS PART IF NECESSARY)**

THE DATE THAT THE DEVIATION OCCURRED _____

THE DATE THAT THE DEVIATION WAS RECOGNIZED _____

THE DATE THAT THE STUDY DIRECTOR WAS NOTIFIED _____

METHOD OF NOTIFICATION (e.g. telephone, email, fax) _____
(Include telephone notes or copy of email or fax in Part 3 of this book)

THE DEVIATION IS FROM *(check appropriate)* PROTOCOL_____ SOP'S_____

SECTION OF THE PROTOCOL OR SOP'S THAT IS AFFECTED _____

BRIEF DESCRIPTION OF DEVIATION: _____

_____

_____

_____

_____

_____

EXPLAIN WHY THE DEVIATION OCCURRED: _____

_____

_____

_____

_____

ABOVE DATA ENTERED BY: _____ *DATE:* _____

FIELD PERSONNEL: DO NOT WRITE BELOW THIS LINE

STUDY DIRECTOR'S ASSESSMENT OF IMPACT OF THIS DEVIATION ON THE STUDY:

_____

_____

_____

_____

APPROVED BY:

_____ _____

Study Director/Date Sponsor/Date

PROTOCOL CHANGE NUMBER_____

cc: QA Field Research Director:

Regional Field Coordinator:

Laboratory Research Director:

Trial Year 2014

This protocol change form when copied on colored paper is an exact copy of the original.

IR-4 Project Headquarters, 500 College Road East, Suite 201 W, Princeton, New Jersey, 08540, 732-932-9575, FAX# 609-514-2612

CHANGE# 1

IR-4 PROTOCOL CHANGE FORM*

Project Title NITRAPYRAN: Magnitude of the Residue on LETTUCE (HEAD & LEAF) **PR No.:** A2659

Field I. D. No.: all

Laboratory I. D. No.: A2659.13-CAR10

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Description of Change:

Change Section

15. APPLICATION TREATMENTS AND TIMING:

Remove this statement from the protocol:

After applications incorporate at any time up to 10 days after application with light tillage or apply a minimum of 0.5 inches of moisture with overhead irrigation.

Reason for Change:

There are two statements in the protocol concerning irrigation. The following statement is sufficient and can remain in the protocol:

If at least 0.5 acre inches of rainfall does not occur within 2 days of the application, apply 0.5-1.0 acre inches of water via overhead sprinkler application.

Impact on Study:

None. Typographical error

Authorization:

Raymond C Leonard 4/26/13

Study Director (DATE)
Raymond C. Leonard

4/26/2013

Sponsor (DATE)
Dr. Daniel L. Kunkel

cc: IR-4 QA Unit (HQ), D. Ennes, E. Lurvey, R. Bellindar, M. Craig, R. Sisco, D. Studstill, B. Boutwell, M. Samuel-Foo, B. Fraelich, S. Benzen, M. Hengel, P. Wade, P. Schwartz

* This form is used to document changes of the protocol initiated by the Study Director (Protocol Amendment) and Changes initiated by the Field/Residue Research Director (Protocol Deviations). If possible, seek approval of the protocol deviations prior to occurrence. All protocol deviations must be documented promptly (ie 2 weeks of occurrence) by completion of this form and forwarded to IR-4 Headquarters.

F-3 (Replaces PC-10) Rev.02/93

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CHANGE# 2

IR-4 PROTOCOL CHANGE FORM*

Project Title NITRAPYRAN: Magnitude of the Residue on LETTUCE (HEAD & LEAF) **PR No.:** A2659

Field I. D. No.: A2659.13-FL04

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Laboratory I. D. No.: A2659.13-CAR10

Description of Change:

Change Section:
18B. FIELD RESIDUE SAMPLE INVENTORY (Only decline trial A2659.13-FL04):

SAMPLE ID	TRT#	TREATMENT	DAYS AFTER APPLICATION	MINIMUM SAMPLE SIZE	CROP FRACTION
A	01	Untreated	Crop maturity*	12 plants / 2 lbs.	Plant (without roots)
B	01	Untreated	Crop maturity*	12 plants / 2 lbs.	Plant (without roots)
G	02	NITRAPYRIN	7 (±1) days prior to Samples E and F	12 plants / 2 lbs.	Plant (without roots)
H	02	NITRAPYRIN	7 (±1) days prior to Samples E and F	12 plants / 2 lbs.	Plant (without roots)
I	02	NITRAPYRIN	3 (±1) days prior to Samples E and F	12 plants / 2 lbs.	Plant (without roots)
J	02	NITRAPYRIN	3 (±1) days prior to Samples E and F	12 plants / 2 lbs.	Plant (without roots)
E	02	NITRAPYRIN	30 (±3)	12 plants / 2 lbs.	Plant (without roots)
F	02	NITRAPYRIN	30 (±3)	12 plants / 2 lbs.	Plant (without roots)
K	02	NITRAPYRIN	3 (±1) days after Samples E and F	12 plants / 2 lbs.	Plant (without roots)
L	02	NITRAPYRIN	3 (±1) days after Samples E and F	12 plants / 2 lbs.	Plant (without roots)
M	02	NITRAPYRIN	7 (±1) days after Samples E and F	12 plants / 2 lbs.	Plant (without roots)
N	02	NITRAPYRIN	7 (±1) days after Samples E and F	12 plants / 2 lbs.	Plant (without roots)

*Collect on the same day as Samples E and F (estimated crop maturity)

Reason for Change:

To clarify section **18B. FIELD RESIDUE SAMPLE INVENTORY (Only decline trial A2659.13-FL04):**

SAMPLE ID	TRT#	TREATMENT	DAYS AFTER APPLICATION	MINIMUM SAMPLE SIZE	CROP FRACTION
A	01	Untreated	Crop maturity*	12 plants / 2 lbs.	Plant (without roots)
B	01	Untreated	Crop maturity*	12 plants / 2 lbs.	Plant (without roots)
G	02	NITRAPYRIN	23 (±1) days	12 plants / 2 lbs.	Plant (without roots)
H	02	NITRAPYRIN	23 (±1) days	12 plants / 2 lbs.	Plant (without roots)
I	02	NITRAPYRIN	27 (±1) days	12 plants / 2 lbs.	Plant (without roots)
J	02	NITRAPYRIN	27 (±1) days	12 plants / 2 lbs.	Plant (without roots)
E	02	NITRAPYRIN	30 (±1) days (estimated crop maturity)	12 plants / 2 lbs.	Plant (without roots)
F	02	NITRAPYRIN	30 (±1) days (estimated crop maturity)	12 plants / 2 lbs.	Plant (without roots)
K	02	NITRAPYRIN	37 (±1) days	12 plants / 2 lbs.	Plant (without roots)
L	02	NITRAPYRIN	37 (±1) days	12 plants / 2 lbs.	Plant (without roots)
C	02	NITRAPYRIN	45 (±1) days	12 plants / 2 lbs.	Plant (without roots)
D	02	NITRAPYRIN	45 (±1) days	12 plants / 2 lbs.	Plant (without roots)

*Collect on the same day as Samples E and F (estimated crop maturity)

* This form is used to document changes of the protocol initiated by the Study Director (Protocol Amendment) and Changes initiated by the Field/Residue Research Director (Protocol Deviations). If possible, seek approval of the protocol deviations prior to occurrence. All protocol deviations must be documented promptly (ie 2 weeks of occurrence) by completion of this form and forwarded to IR-4 Headquarters.

CHANGE# 2

Impact on Study:

None. To clarify the sampling description for the protocol. The original description was confusing. I also spread out the sample collection times.

Authorization:

Raymond C Leonard 8/16/13

Study Director (DATE)
Raymond C. Leonard

8/16/2013

Sponsor Representative (DATE)

cc: IR-4 QA Unit (HQ) D Studstill M. Samuel-Foo M. Hengel

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

* This form is used to document changes of the protocol initiated by the Study Director (Protocol Amendment) and Changes initiated by the Field/Residue Research Director (Protocol Deviations). If possible, seek approval of the protocol deviations prior to occurrence. All protocol deviations must be documented promptly (ie 2 weeks of occurrence) by completion of this form and forwarded to IR-4 Headquarters.

F-3 (Replaces PC-10) Rev.02/93

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CHANGE# 3

IR-4 PROTOCOL CHANGE FORM*

Project Title NITRAPYRAN: Magnitude of the Residue on LETTUCE **PR No.:** A2659

Field I. D. No.: A2659.13-NM02 AND A2659.13-NM03

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Laboratory I. D. No.: A2659.13-CAR14

Description of Change:
Section 15 APPLICATION TREATMENTS AND TIMING bottom of page states:

If at least 0.5 acre inches of rainfall does not occur within 2 days of the application, apply 0.5-1.0 acre inches of water via sprinkler application.

At the 13-NM02 and 13-NM03 sites

Change the above statement to:

Since no rainfall is anticipated for the 13-NM02 and 13-NM03 sites, irrigation can be applied on the day of application to 2 days after the application.

Reason for Change:

No rainfall is anticipated for the 13.NM02 and 13-NM03 sites and this will allow for an additional day or two for plant development before sampling.

Impact on Study:

None. Since no rainfall is anticipated for the 13.NM02 and 13-NM03 sites, this will allow for an additional day or two for plant development before sampling.

Authorization:

Raymond C Leonard 10/3/13
Study Director (DATE)
Raymond C. Leonard

Deborah Caporaso Oct 3 2013
Sponsor Representative (DATE)

cc: IR-4 QA Unit (HQ) M Craig M. Hengel R. Sisco

* This form is used to document changes of the protocol initiated by the Study Director (Protocol Amendment) and Changes initiated by the Field/Residue Research Director (Protocol Deviations). If possible, seek approval of the protocol deviations prior to occurrence. All protocol deviations must be documented promptly (ie 2 weeks of occurrence) by completion of this form and forwarded to IR-4 Headquarters.

IR-4 PROJECT HEADQUARTERS, 500 COLLEGE ROAD EAST, SUITE 201 W, PRINCETON, NJ 08540
PHONE: (732) 932-9575; FAX#: (609) 514-2612

CHANGE # 4

IR-4 PROTOCOL AMENDMENT FORM*

Project Title: Nitrapyrin/Lettuce (Head & Leaf) **PR No.:** A2659

Field I. D. No.: A2659.13-CA19 & A2659.14-CA01

Lab I.D. No.: A2659.13-CAR14

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

RECEIVED
DEC 18 2013
WR IR-4

Description of Change:

Field trial ID No. A2659.13-CA19 has been terminated. The Quality Assurance Unit will not audit data generated from this field trial, including the Field Data Book, after December 18, 2013. Data from this trial should be sent to IR-4 HQ per standard routing procedures.

Add the following Field Trial to Section 23:

Field Research Director	Field ID NO.	RFC	Lettuce Test Crop
Keri Skiles, Kearney Agricultural Research & Ext. Center (KARE), 9240 S. Riverbend Ave., Parlier, CA 93648, (559) 646-6061, FAX# 559-646-6015; Cell: 559-310-4093; e-mail: kmskiles@ucanr.edu	A2659.14-CA01	WSR	Leaf

Reason for Change:

Field I.D. No. A2659.13-CA19 is terminated because it had a lower than proscribe protocol application rate applied. Field I.D. No. A2659.14-CA01 has been added to meet the study data requirements.

Impact on Study:

Meets required data requirements.

Authorization:

Raymond C Leonard 12/18/13
Study Director (DATE)
Raymond C. Leonard

Deborah Carpenter Dec 18, 2013
Sponsor Representative (DATE)

cc: IR-4 QA Unit
M. Hengel K. Skiles R. Sisco

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IR-4 PROJECT HEADQUARTERS, 500 COLLEGE ROAD EAST, SUITE 201 W, PRINCETON, NJ 08540
PHONE: (732) 932-9575; FAX#: (609) 514-2612

CHANGE # 5

IR-4 PROTOCOL AMENDMENT FORM*

Project Title: Nitrapyrin/Lettuce (Head & Leaf) **PR No.:** A2659

Field I. D. No.: A2659.13-CA16 & A2659.14-CA496

Lab I.D. No.: A2659.13-CAR14

Description of Change:

Field trial ID No. A2659.13-CA16 has been terminated. The Quality Assurance Unit will not audit data generated from this field trial, including the Field Data Book, after February 10, 2014. Data from this trial should be sent to IR-4 HQ per standard routing procedures.

Add the following Field Trial to Section 23:

Field Research Director	Field ID NO.	RFC	Lettuce Test Crop
David Ennes, Kearney Agricultural Research & Ext. Center (KARE), 9240 S. Riverbend Ave., Parlier, CA 93648, (559) 646-6061, FAX# 559-646-6015, CELL# (559)-791-5309,e-mail: djennes@ucanr.edu	A2659.14-CA496	WSR	HEAD

Reason for Change:

Field I.D. No. A2659.13-CA16 is terminated because the site was decimated by birds. Field I.D. No. A2659.14-CA496 has been added to meet the study data requirements.

Impact on Study:

Meets required data requirements.

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Authorization:

Raymond C Leonard 2/11/14

Study Director (DATE)
Raymond C. Leonard

Deborah Carpenter Feb 11, 2014

Sponsor Representative (DATE)

cc: IR-4 QA Unit
M. Hengel B. Boutwell D. Ennes R. Sisco

Nitrapyrin/Lettuce (head & leaf)
ID No. A2659.13-CA17
Boutwell

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

CHEMICAL/CROP/FIELD ID NO: _____

IR-4 FIELD DATA BOOK

DEVIATION FORM **(PHOTOCOPY THIS PART IF NECESSARY)**

THE DATE THAT THE DEVIATION OCCURRED: 3/4/2014

THE DATE THAT THE DEVIATION WAS RECOGNIZED: 3/3/2014

THE DATE THAT THE STUDY DIRECTOR WAS NOTIFIED: 3/4/2014

METHOD OF NOTIFICATION (e.g. telephone, email, fax)
(Include telephone notes or copy of email or fax in Part 3 of this book): telephone

THE DEVIATION IS FROM *(check appropriate)* PROTOCOL ✓ SOP'S _____

SECTION OF THE PROTOCOL OR SOP'S THAT IS AFFECTED: SECTION 15

BRIEF DESCRIPTION OF DEVIATION: TRT 03 TO BE SAMPLED AT 30±3 DAYS AFTER TREATMENT OF TEST SUBSTANCE = 2/25/2014 (33 DAYS). ACTUAL SAMPLING OCCURED ON 3/4/2014 = 40 DAYS AFTER TREATMENT OF TEST SUBSTANCE

Note Trt 2 was sampled at 48 days

EXPLAIN WHY THE DEVIATION OCCURRED: FIELD RESEARCH DIRECTOR FAILED TO SAMPLE CROP ON SCHEDULED DATE, SAMPLED 7 DAYS LATER THAN REQUESTED IN PROTOCOL.

ABOVE DATA ENTERED BY: _____ *DATE:* 3/4/2014

FIELD PERSONNEL: DO NOT WRITE BELOW THIS LINE

STUDY DIRECTOR'S ASSESSMENT OF IMPACT OF THIS DEVIATION ON THE STUDY:
The 40 day sampling will not satisfy the 30 day PHI request. The 48 day sampling will acceptable for the 45 day PHI

APPROVED BY:

Raymond C Fleming 3/20/14
Study Director/Date

Deborah Carpenter March 20, 2014
Sponsor/Date

PROTOCOL CHANGE NUMBER 6

cc: QA Field Research Director: B. Bartwell
Regional Field Coordinator: R Sisco
Laboratory Research Director: M Hengel

Trial Year 2013

This protocol change form when copied on colored paper is an exact copy of the original.

IR-4 NATIONAL PESTICIDE CLEARANCE PROTOCOL
NITRAPYRIN/LETTUCE (HEAD & LEAF)

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

Leaf

1. PROJECT TITLE:

NITRAPYRIN: Magnitude of the Residue on LETTUCE (HEAD & LEAF)

2. JUSTIFICATION AND OBJECTIVES:

IR-4 has received a request for the minor use of nitrapyrin on lettuce to manage nitrogen (N) availability to the crop, by inhibiting the nitrification of ammoniacal and urea nitrogen fertilizer in the soil by selectively and temporarily inhibiting *Nitrosomonas* bacteria.

To establish this tolerance, it is required that the magnitude of the residue in or on the commodity be determined as per EPA Series 860 Guidelines. The purpose of this study is to collect and analyze treated and untreated residue samples from appropriate field sites according to the application parameters requested to provide the sponsor with residue chemistry data to support a pesticide tolerance.

To determine the magnitude of residues of total nitrapyrin in or on lettuce (head & leaf), this protocol will be employed using appropriate Standard Operating Procedures (SOP's) and will be conducted under provisions outlined in 40 CFR Part 160 (**IN ACCORDANCE WITH EPA's GOOD LABORATORY PRACTICE STANDARDS**). Canadian field/processing/analytical trials, if any, will be conducted at facilities consistent with the provisions outlined in the Organization for Economic Cooperation and Development (OECD) Series on Principles of Good Laboratory Practice and Compliance Monitoring.

3. SPONSOR/TESTING FACILITY NAME, ADDRESS AND PHONE:

IR-4 Project Headquarters, 500 College Road East, Suite 201 W, Princeton, NJ 08540, (732) 932-9575, FAX# (609) 514-2612.

4. STUDY DIRECTOR[1]:

Mr. Raymond Leonard, IR-4 Project Headquarters, 500 College Road East, Suite 201 W, Princeton, NJ 08540, (732) 932-9575 extension 4617, FAX# (609) 514-2612, E-mail: Leonard@aesop.rutgers.edu

5. PROPOSED DATES:

Experimental Start :	04/13
Experimental Termination:	11/14
Study Completion:	10/15

6. PROPOSED TEST SITES:

Field sites:	Refer to Section 23
Laboratory:	Refer to Section 24

7. STUDY AUTHORIZATION:

4/2/2013	Raymond C Leonard 4/2/2013
Sponsor Representative / Date	Raymond Leonard / Study Director / Date

7.1 STUDY DIRECTOR INITIALS: RL

[1]In case the Study Director is not available, contact Dr. Deborah Carpenter (x4637) or Dr. Daniel Kunkel (x4616) at IR-4 Headquarters (732) 932-9575 for guidance.

8. GOOD LABORATORY PRACTICE COMPLIANCE:

The appropriate cooperative testing facility (field and laboratory) will be responsible for certifying that its portion of the study will be conducted in accordance with EPA's Good Laboratory Practice (GLP) Standards, 40 CFR 160, amended and effective Oct. 16, 1989. A statement of compliance, together with any GLP deviations will be signed and submitted by the appropriate Research Directors in their report or data package.

9. QUALITY ASSURANCE:

Quality Assurance duties and responsibilities will be in conformance with 40 CFR 160.35. A Quality Assurance Statement will be submitted in the final report and shall include the date inspections were made and date(s) the findings were reported to the Study Director and management.

10. TEST SYSTEM/CROP:

LETTUCE (HEAD AND LEAF) - Use a commercial variety. Report: variety, source, lot number, date received, and other descriptive information if available.

Field trials will be conducted at the appropriate sites to support the establishment/maintenance of a national residue tolerance, **see Section 23 for these assignments, including whether to use head or leaf lettuce**. Refer to Section 11.4 for requirements to differentiate multiple trials by the same field researcher. **If the same Field Research Director has been assigned one head lettuce trial and one leaf lettuce trial, it is not required that other means of differentiation listed in Section 11.4 be used(except that independently prepared tank mixes must be used), but adhering to these means of differentiation is strongly preferred.**

11. TEST SYSTEM DESIGN and STATISTICAL METHOD:

Nitrapyrin / Lettuce
ID No. A2659.14-CA01
Skiles

11.1 Each test site will consist of one untreated and two treated plots.

The individual plots shall be of adequate size to ensure that no more than 50% of the harvestable crop in the sampled area will be needed to provide the necessary plant material. See Parts 17 & 18 for requirements for residue sampling.

Field trial A2659.13-FL03 will provide samples for a decline trial (multiple sampling dates). The plots must be large enough to provide enough samples on each sampling date to meet sample size requirements. .

11.2 Employ adequate buffer zones between each of the plots to prevent contamination. For most application types, a minimum distance of 15 feet is required, but a minimum of 50 feet is strongly preferred. For applications made by airblast, mist blower, or power sprayers, a minimum distance of 50 feet is required, but a minimum of 100 feet is strongly preferred. When plants are used as a buffer between the untreated and treated plots, a lower distance is needed to prevent contamination, but the minimums indicated above must be observed. If another study using a test substance with the same active ingredient is being conducted at the same research site, the untreated plot from one study must be separated from the treated plot(s) of the other by the appropriate buffer zone indicated above.

11.3 If this pesticide use is not registered on this crop, federal law requires that the treated crop must be destroyed or handled in such a way that it is not consumed as a human food or animal feed.

11.4 If a Field Research Director is assigned more than one trial in this study, the following requirements must be met: An independently prepared tank-mix must be used in each trial. Also:

Choose one option from any 2 of the 5 sets below (for a minimum of 2 criteria met).

Set	Option	Description
1	A	Spray volume must vary by at least 25% of the lower volume (minimum 10 GPA difference) Example 1, Trial A has a volume of 20 GPA and Trial B has a volume ≥ 30 GPA Example 2, Trial A has a volume of 60 GPA and Trial B has a volume ≥ 75 GPA The trial with the lowest spray volume for the first application must remain the lowest for each application; the trial with the highest must remain the highest for each, and so on
2	A	Not applicable
3	A	Not applicable
	B	Different types of application equipment be used in each trial (for example, tractor-pulled boom sprayer, tractor-pulled spreader, airblast sprayer, axial fan orchard sprayer, proptec sprayer, cannon mist sprayer, tower sprayer, over-row sprayer, tunnel sprayer, backpack sprayer, waist pack sprayer, hand gun, hand-held spreader, or shaker can)
	C	Different people make the applications, using hand-held equipment such as backpack sprayers, waist pack sprayers, hand guns, hand-held spreaders, or shaker cans
	D	Different spray droplet size (fine, medium, coarse, very coarse, or extra coarse) This may be accomplished by changing nozzles and/or by changing spray pressure Document in the Field Data Book the droplet size that results from the pressure and nozzles used in the trial (nozzle catalog may be used as a reference) Coarse, very course, and extra course are appropriate for herbicides only
	E	Not applicable
	F	Not applicable
	G	Not applicable
4	A	Different crop variety (different size at maturity, rough vs. smooth surface, different amount of foliage shielding the commodity, etc.)—confirm with Study Director if this option will be chosen
	B	Not applicable
	C	Not applicable
	D	Not applicable
	E	Not applicable
	F	Not applicable
	G	Not applicable
5	A	Trial sites must be separated by at least 20 miles (32 km)
	B	First application in each trial is separated by at least 30 days
	C	Different soil series, type, or texture (only in trials in which applications are made to the soil)

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If these criteria cannot be met to separate multiple trials, the Field Research Director should contact the Study Director to discuss possible alternatives that can be amended to the protocol. Trials conducted in different calendar years are exempt from these requirements.

11.5 Mark plots with identifiable markers containing at minimum the Field ID number and treatment number or treatment name that will persist for the duration of the field research trial or that can be readily replaced.

11.6 This study is not designed for statistical evaluation of field data.

12. TEST SITE PREPARATION:

Prepare or select a test site that has been maintained following good local agricultural practices for the production of lettuce (head & leaf) including fertilization, irrigation, if necessary and available, and other practices that ensure commercially acceptable crop production.

The test site will have a known pesticide and crop treatment history of a minimum of 1 year and preferably 3 years.

13. TEST/CONTROL SUBSTANCE:

Use the GF-3181 formulation (1.85 lb a.i. per gallon) of nitrapyrin (EPA Reg No. 62719-583, CAS# 1929-82-4) that has been characterized to meet GLP standards. IR-4 Headquarters personnel will arrange procurement of GLP test substance from the Registrant. Upon receipt, document the lot/batch number, condition, quantity received and if GLP characterized. **Temperature monitoring should begin within 2 days of receipt of the test substance, regardless of where it is held or stored.**

Contact the Study Director if there are any concerns regarding the GLP status, labeled identification, etc. of the test substance.

The registrant will provide a copy of the Certificate of Analysis to IR-4 Headquarters.

Store the test substance in a secure, clean, dry area and document storage temperatures.

EPA regulations require that test substance container(s) must be retained until the final study report is completed.

Study completion can be confirmed by contacting the Study Director or the Regional Field Coordinator, or by searching the IR-4 web site; click on "Food Crops" and under the "IR-4 Food Crops Database" click on the "Test Substance Container Disposal Approval" link. URL: http://ir4.rutgers.edu/FoodUse/Food_UseSimple3.cfm

Alternatively, some registrants will archive the test substance containers. If test substance containers are shipped to another location, the shipment must be conducted in accordance with local, state, and Federal regulations. See shipping documents for directions for return of the test substance; if none are given, contact the registrant representative: Dow AgroSciences, Brian Bret, Phone: 916-780-7477; Fax: 916-780-7478; e-mail: blbret@dow.com and Cathy Galvin (CLGalvin@dow.com) , Tel. No. (317) 337-4828

The registrant will archive a retention sample of the test substance.

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Control substances are not relevant to this study.

14. TEST SUBSTANCE APPLICATION:

14.1 Simulate commercial application practices by applying the test substance in a manner that represents a major application technique that is used by area commercial growers, while following the directions specified in Section 15.

- Use application equipment that will provide uniform application of the test substance.
- The test substance, if applied in a mixture, must be applied to the test system within 2 hours of mixing.
- Each field trial requires a unique spray mixture. Do not use the spray mixture from one field trial on another field trial.
- Agitate the test substance during the application, if practical, to ensure that it is well mixed.

14.2 Full Calibrations for output and speed must be performed to ensure accurate delivery.

A calibration consists of a minimum of three consecutive, documented checks for nozzle or hopper output and speed (equipment or walking speed). (When the output of an airblast sprayer is calibrated or rechecked, it is not necessary to record the outputs of individual nozzles.) The variation of the total output recorded for any one of the three checks must not be greater than 5% from the mean for the full calibration.

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Discharge/Output Calibrations must be performed:
Just prior to the first application of test substance, completely calibrate[2].

Another complete calibration must be performed and documented when application parameters or equipment components have changed between applications. Recalibration is required after any of the following have changed: application type; intended nozzle or hopper output; nozzle size or type, or other equipment that may affect the output etc. A recalibration is required even if the pressure (intended nozzle output) has been changed back to the pressure used at the initial calibration. It is not necessary to fully recalibrate when CO_2 tanks are changed, or when equipment is transported offsite or cleaned, or if nozzles are removed and then placed back on (even if other nozzles have been used in the interim, unless the pressure has also been changed); however a recheck must take place prior to the next application. If the recheck is out of specification (see paragraphs below) a recalibration is required. Use equipment logs to document changes in the equipment parameters.

Rechecking the output, at a minimum, is necessary for multiple applications, as long as parameters have not changed. A single output check may be conducted to confirm consistent delivery (±5% of the last complete calibration) just prior to subsequent applications. **A recheck is also required if the equipment has been moved from the location where the most recent full calibration or recheck has occurred, even if no applications have been made in the interim. (A sprayer that has been calibrated or rechecked at a farm or research station and then used to make an application somewhere else on that same farm or research station is *not* considered to have been "moved".)**

The equipment must be completely recalibrated if:
- a recheck results in an output that differs from the mean of the complete calibration by greater than 5%
- the variation of any nozzle's output from the mean output of all of the nozzles during the same run is greater than 5% (this statement does not apply to airblast sprayers)

To minimize the occurrence of application rates that fall outside the protocol range, calculations for the amount of test substance to be applied that are based on the discharge rate should be performed using mean output calculated from the most recent complete calibration data (mean of three output checks), not on single-output recheck results. The use of a target output rather than the mean output may be used in the calculations made prior to the application; however a complete calibration must be conducted just prior to each use of a target output, and the mean output must be within 5% of the target output. Using a target output rather than a mean output increases the probability that an application rate deviation will occur. Verification of the amount of test substance that has been applied will always be calculated using the most recent complete calibration data.

A speed calibration must also be performed prior to the first test substance application. Conduct the speed calibration in an area adjacent to the test plot, or on similar terrain. **Speed rechecks are required for multiple applications on different days.** Speed should be recalibrated if a major equipment change has been made, such as from a tractor-pulled sprayer to a backpack sprayer. (When a handgun is used to spray tree fruits or nuts, and each tree is sprayed for a predetermined time from a stationary position, a speed calibration is not required.)

[2]"Just prior" includes the day prior to the application, but calibration on the day of use is preferred.

Complete calibration data from another trial (performed on the day of or day prior to the application in this trial) may be used. However, a recheck (single output check **and speed recheck**) must be performed just prior to the application in this trial, but subsequent to any other applications with the application equipment. If more than one field trial in this study has been assigned to the same Field Research Director, it is not necessary to perform separate output rechecks for applications made on the same day in the respective trials, and separate speed rechecks are not required unless the treated plots are located on separate farms.

14.3 Actual Application Rate: Record actual application pass-times in the Field Data Book and verify the accuracy of the application against the protocol rate. **The application is considered acceptable if the accuracy is within -5% and +10% of the target rate specified in Section 15. If the application did not meet this range, the Study Director must be notified of this deviation before proceeding with this trial.**

The submitted Field Data Book shall contain the original calibration data or a true copy of all complete calibrations referenced, along with the original data from the rechecks performed for this trial.

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15. APPLICATION TREATMENTS AND TIMING:

Trt#	Treatment	Target Rate of active ingredient	Target Rate of formulated product*	Application Type	Spray Volume Range**
01	Untreated	Not Applicable	Not Applicable	Not Applicable	Not Applicable
02	NITRAPYRIN	0.5 lb ai/acre acre + liquid fertilizer***	1023 ml/acre + liquid fertilizer***	Soil side dress banded	20-60 GPA
03	NITRAPYRIN	0.5 lb ai/acre acre + liquid fertilizer***	1023 ml/acre + liquid fertilizer***	Soil, side dress banded	20-60 GPA

*The nominal formulation concentration of the test substance will be used in calculating application rates (see Section 13 for the nominal concentration).
**GPA=gallons per acre

***For treatment 02 and treatment 03, include liquid fertilizer according to local commercial fertilizer recommendation for urea and/or ammonium, such as a 28%, 30% or 32% UAN. Do not use 100% nitrate. Record the type of fertilizer and amount applied. **Include a copy of the label in the Field Data Book.**

Apply as a banded side dress according to local commercial fertilizer application practices. Record (1) width of banded application, (2) distance from base of plant to center of the band and the (3) volume applied.

For Treatment 02 make one application with the application 45 (+/-3) days before harvest.

For Treatment 03 make one application with the application 30 (+/-3) days before harvest.

Side dress banded applications should be concentrated in the band. The rate specified above is on a per acre basis. To calculate the rate of GF-3181 to be used with a given volume of liquid fertilizer, calculate the effective area that the application is intended for and this will be concentrated in the band.

If at least 0.5 acre inches of rainfall does not occur within 2 days of the application, apply 0.5-1.0 acre inches of water via sprinkler application.

After applications incorporate at any time up to 10 days after application with light tillage or apply a minimum of 0.5 inches of moisture with overhead irrigation.

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16. SUPPLEMENTAL CROP TREATMENTS:

Protect the integrity of the field trial by managing pests that may cause significant damage to the test crop. Only EPA-registered maintenance pesticides should be used; apply according to labeled directions. Make identical applications to the untreated and treated plots.

Consult with Study Director if no registered pesticides are available to control the pests. Document all supplemental crop treatments. DO NOT USE pesticides that are similar to the test substance or other chemicals that might interfere with analysis of the test substance. If unsure, **contact the Study Director**.

17. RESIDUE SAMPLE COLLECTION:

All Trials: Collect two samples from each plot, for trt plot 1 collect samples on the same day at treatment plot 2 is harvested. For trt plot 2 collect the samples at 45 (±3) days after application, for trt plot 3 collect the samples at 30 (±3) days after application. Each sample should be collected during a separate run through the entire plot. Avoid sampling from the plot ends. Each sample should be representative of the entire plot (except plot ends).
Remove dead and/or senesced leaves. DO NOT TRIM.

DECLINE TRIAL (A2659.13-FL04 ONLY (See sample inventory in Protocol Section 18B): Collect two samples from the treated plot at the intervals designated in Protocol Section 18B. For trt plot 1 collect samples on the same day as samples E and F (estimated crop maturity).

If excessive soil adheres to the foliage, remove it by lightly brushing it off (document what is used to remove the soil or debris, e.g. a clean brush, clean gloved hand, clean dry towel, or similar method). If necessary, lightly rinse off with a minimal amount of clean water (do not scrub). Pat lightly while drying with clean paper towels. DO NOT RUB WHILE RINSING OR DRYING THE LEAVES.

Reduce gross sample weight to a minimum of 2 lbs (but preferably not more than 4 lbs) by cutting each head longitudinally into quarters with a clean knife on an uncontaminated surface. Retain at least one quarter of each head. Process the untreated samples first. For samples with wrapper leaves be sure to retain these leaves.

Follow proper handling practices with clean or gloved hands and clean tools to prevent transfer of pesticide residue from one sample to another. If practical, complete harvest and sample preparation for the untreated plot(s) before proceeding to the treated plot(s).

Place all samples in plastic-lined cloth bags. Bags may be obtained from the Field Research Coordinator (Section 23). Identify each sample bag** with correct Field ID number, Test Substance (common chemical name and formulation), complete sample ID (see Sections 18.1 and 18.2) and harvest/sampling dates. See Section 19 for residue sample handling directions.

When using **IR-4 plastic lined cloth residue sample bags, complete attached sample tag as follows:
Field ID Number; **Crop Fraction**; **Test Substance** (enter the chemical name listed in Section 15); **Sample ID**; **Trt#**; **Harvest Date**; **Sample Date**; **Field Research Director** (enter name and telephone number).

18. FIELD RESIDUE SAMPLE INVENTORY:

See below for inventories of head lettuce and leaf lettuce.

18.1 HEAD LETTUCE SAMPLES (all head lettuce trials)

SAMPLE ID	TRT#	TREATMENT	DAYS AFTER APPLIC.	MINIMUM SAMPLE SIZE	CROP FRACTION
A	01	Untreated	NA*	12 heads with wrapper leaves	Head with Wrapper Leaves
B	01	Untreated	NA*	12 heads with wrapper leaves	Head with Wrapper Leaves
C	02	NITRAPYRIN	45 (±3)	12 heads with wrapper leaves	Head with Wrapper Leaves
D	02	NITRAPYRIN	45 (±3)	12 heads with wrapper leaves	Head with Wrapper Leaves
E	03	NITRAPYRIN	30 (±3)	12 heads with wrapper leaves	Head with Wrapper Leaves
F	03	NITRAPYRIN	30 (±3)	12 heads with wrapper leaves	Head with Wrapper Leaves

* Collect on the same day as 45 day TRT 02 treated plot sampling

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18.2 LEAF LETTUCE SAMPLES (all leaf lettuce trials except A2659.13-FL04)

SAMPLE ID	TRT#	TREATMENT	DAYS AFTER APPLIC.	MINIMUM SAMPLE SIZE	CROP FRACTION
A	01	Untreated	NA*	12 plants / 2 lbs.	Plant (without roots)
B	01	Untreated	NA*	12 plants / 2 lbs.	Plant (without roots)
C	02	NITRAPYRIN	45 (±3)	12 plants / 2 lbs.	Plant (without roots)
D	02	NITRAPYRIN	45 (±3)	12 plants / 2 lbs.	Plant (without roots)
E	03	NITRAPYRIN	30 (±3)	12 plants / 2 lbs.	Plant (without roots)
F	03	NITRAPYRIN	30 (±3)	12 plants / 2 lbs.	Plant (without roots)

* Collect on the same day as 45 day TRT 02 treated plot sampling

18B. FIELD RESIDUE SAMPLE INVENTORY (Only decline trial A2659.13-FL04):

SAMPLE ID	TRT#	TREATMENT	DAYS AFTER APPLICATION	MINIMUM SAMPLE SIZE	CROP FRACTION
A	01	Untreated	Crop maturity*	12 plants / 2 lbs.	Plant (without roots)
B	01	Untreated	Crop maturity*	12 plants / 2 lbs.	Plant (without roots)
G	02	NITRAPYRIN	7 (±1) days prior to Samples E and F	12 plants / 2 lbs.	Plant (without roots)
H	02	NITRAPYRIN	7 (±1) days prior to Samples E and F	12 plants / 2 lbs.	Plant (without roots)
I	02	NITRAPYRIN	3 (±1) days prior to Samples E and F	12 plants / 2 lbs.	Plant (without roots)
J	02	NITRAPYRIN	3 (±1) days prior to Samples E and F	12 plants / 2 lbs.	Plant (without roots)
E	02	NITRAPYRIN	**30 (±3)**	12 plants / 2 lbs.	Plant (without roots)
F	02	NITRAPYRIN	**30 (±3)**	12 plants / 2 lbs.	Plant (without roots)
K	02	NITRAPYRIN	3 (±1) days after Samples E and F	12 plants / 2 lbs.	Plant (without roots)
L	02	NITRAPYRIN	3 (±1) days after Samples E and F	12 plants / 2 lbs.	Plant (without roots)
M	02	NITRAPYRIN	7 (±1) days after Samples E and F	12 plants / 2 lbs.	Plant (without roots)
N	02	NITRAPYRIN	7 (±1) days after Samples E and F	12 plants / 2 lbs.	Plant (without roots)

*Collect on the same day as Samples E and F (estimated crop maturity)

19. RESIDUE SAMPLE HANDLING AND SHIPMENT:

After residue sample collection, store samples in a freezer. If the samples cannot be placed into a freezer within approximately one hour, use an appropriate method of cooling samples in order to maintain integrity.

Sample handling and storage methods can be outlined generally in SOP's, but describe methods fully in the Field Data Book.

For pre-shipment storage, the samples will be held frozen at temperatures generally less than -18 °C (0 °F), allowing for normal variations of less than 24 hours duration due to freezer cycling, sample movement, etc. If the analytical laboratory is close enough to the field site to permit delivery of the samples by field personnel on the day of sampling, then pre-shipment frozen storage is not required.

Freezer logs will be used to document all sample additions to and removals from storage. All on-site storage temperatures will be monitored and documented.

Shipment of frozen samples will be by freezer truck or express shipment. Shipments sent via express shipment (overnight carriers such as Federal Express or Airborne) will require the addition of quantities of dry ice sufficient to maintain sample integrity while in transit to the laboratory. Document the notification made to the sample destination by use of e-mail, fax, telephone log, Field Data Book communication note, etc.

Insert a true copy of Field Data Book Part 8B and a blank copy of Field Data Book Part 8C (Sample Arrival Check Sheet) into each box or container used to ship sample bags.

For analysis, send samples to: Bronson Hung, 418 CHE, 3792 Old Davis Road, University of California, Davis, CA 95616-8615 (530) 752-4742, FAX# 530-752-5857; e-mail: bkhung@ucdavis.edu

20. FIELD DOCUMENTATION AND RECORD KEEPING:

All operations, data and observations appropriate to this study should be **recorded directly and promptly into the IR-4 Field Data Book.**

The content of the Field Data Book should be **sufficiently detailed to completely reconstruct the field trial.** At a minimum, collect and maintain the following raw data:

20.01- Names of all personnel conducting specific research functions

20.02- Amendments and deviations from protocol and standard operating procedures (including copies of signed protocol changes received prior to submission of the Field Data Book to the Regional Field Coordinator).

20.03- Test site information

20.04- Plot maps

20.05- Test substance receipt, use and container/substance disposition records

20.06- Test substance storage conditions (including temperatures)

20.07- Data regarding calibration and use of application equipment

20.08- Treatment application data

20.09- Crop maintenance pesticides and cultural practices, test plot history, and soil information. (Reporting soil information from typical farm service soil analysis labs, or past history for the farm, or from official

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documents, such as the SCS Soil Survey for the test plot area is adequate for this study. The nature of this study is such that soil characteristics do not need to be determined under GLP standards.)

20.10- Residue sample identification, collection, storage conditions and handling (Weight measurements are considered estimates for the samples collected from field or processing trials, and the scales/balances used for this purpose do not need to be maintained in strict adherence to GLP.)

20.11- Residue sample shipping information

20.12- Description of crop destruction, or explanation for lack of destruction

20.13- Meteorological/Irrigation records (temperature/humidity records for greenhouse trials)--required from planting of annual crops or for a minimum of one month prior to the first application onto perennial crops, until last residue sample collection. These records do not need to be determined under GLP standards.

20.14- Pass times (if applicable) and other data to confirm amount of material applied to plots

20.15- Equipment maintenance records with indication of routine vs. non-routine nature of maintenance

20.16- Other applicable data requested in the IR-4 Field Data Book necessary for confirmation that the study was conducted in accordance with the protocol.

Compliance with GLP's is not required for the collection of data associated with crop phytotoxicity.

21. PROTOCOL/SOP MODIFICATIONS - FIELD RESEARCH:

Consult with the Study Director and with the Regional/ARS Field Research Coordinator to discuss desired changes in the protocol prior to occurrence. If appropriate, an amendment will be issued.

Any deviations from the protocol will require the Field Research Director to complete a written report outlining the changes. **Provide this report to the Study Director promptly** (e.g. within 14 days of occurrence or recognition) for review and signature.

All deviations from the approved SOP's also require documentation and **approval by the Study Director**.

22. FIELD RESEARCH REPORT/ARCHIVING:

The Field Research Director will forward the completed originals of the IR-4 Field Data Book and other raw data to the Regional/ARS Field Research Coordinator as soon as possible after the shipment of residue samples.
The Field Research Director will maintain a complete certified true copy of these field documents.
The original IR-4 Field Data Book and other raw data will be forwarded to IR-4 Headquarters for reporting and archiving.

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23. FIELD PERSONNEL / ID NO. / REGIONAL/ARS FIELD RESEARCH LOCATION

If a Field Research Director is assigned more than one trial in this study, refer to Section 11.4 for requirements to differentiate the trials.

Field Research Director	Field ID NO.	RFC	Lettuce Test Crop
Dr. Robin Bellinder, Horticulture Dept., Rm 164 Plant Science Bldg., Cornell University, Ithaca, NY 14853, (607) 255-7890, Farm: 607-844-8270, FAX# 607-255-0599; e-mail: rrb3@cornell.edu	A2659.13-NY05	NER	Head
Mr. David Studstill, University of Florida, Plant Sci Res & Edu Unit, 2556 W. Hwy 318, Citra FL 32113-2132; (352) 591-2678 x 251; Cell: 352-494-6514, FAX # 352-591-9860; e-mail: dwstud@ufl.edu	A2659.13-FL03 A2659.13-FL04	SOR	Head Leaf-Decline
Mr. Benjamin A. Fraelich, USDA, ARS, Crop Protection & Management, 2747 Davis Road,Tifton, GA 31793, (229) 387-2345, FAX# 229-387-2321; e-mail: Benjamin.Fraelich@ars.usda.gov. (Send US Mail to P.O. Box 748, Tifton, GA 21793)	A2659.13-GA*05	ARS	Leaf
Paul Wade, USDA-ARS, Vegetable Research, 2700 Savannah Highway, Charleston, SC 29414; (843) 402-5300 ext 2134; FAX# 843-573-4715; e-mail: Paul.Wade@ars.usda.gov	A2659.13-SC*02	ARS	Leaf
Brent Boutwell, U.C. Coop Extension, Imperial County, 1050 East Holton Road, Holtville, CA 92250-9615, (760) 352-9474 ext 32, FAX# (760) 352-0846, CELL# (760) 604-0801 e-mail: beboutwell@ucanr.edu	A2659.13-CA16 A2659.13-CA17	WSR	Head Leaf
David Ennes, Kearney Agricultural Research & Ext. Center (KARE), 9240 S. Riverbend Ave., Parlier, CA 93648, (559) 646-6061, FAX# 559-646-6015, CELL# (559)-791-5309,e-mail: djennes@ucanr.edu	A2659.13-CA18	WSR	Head
Keri Skiles, Kearney Agricultural Research & Ext. Center (KARE), 9240 S. Riverbend Ave., Parlier, CA 93648, (559) 646-6061, FAX# 559-646-6015; Cell: 559-310-4093; e-mail: kmskiles@ucanr.edu	A2659.13-CA19	WSR	Leaf
Maury Craig, New Mexico State Univ., Extension Plant Sciences Dept., MSC 3AE, Box 30003, Las Cruces, NM 88003, (575) 646-3231, FAX# 575-646-8085; Cell: 575-649-6445; e-mail: mcraig@nmsu.edu	A2659.13-NM02 A2659.13-NM03	WSR	Head Leaf
Ms. Sharon D. Benzen, USDA, ARS, Crop Improvement & Protection Research, 1636 East Alisal Street, Salinas, CA 93905, (831) 755-2828, FAX# 831-755-2814; e-mail: Sharon.Benzen@ars.usda.gov.	A2659.13-CA*20 A2659.13-CA*21	ARS	Head Leaf

RFC = Regional/ARS Field Coordinator

Location:

ARS: Dr. Paul H. Schwartz, BARC-W, ANRI, Bldg. 007, Room 212, 10300 Baltimore Ave., Beltsville, MD 20705-2350; Tel: (301) 504-8256, FAX# 301-504-5048; e-mail: schwartp@ba.ars.usda.gov.

NER: Ms. Edith L. Lurvey, Dept. of Entomology, 630 W. North Street, Geneva, NY 14456; Tel: (315) 787-2308, FAX# 315-787-2326; e-mail: ell10@cornell.edu.

SOR: Dr. Michelle Samuel-Foo, Food & Env. Tox. Lab., Dept. of Food Science & Human Nutrition, Bldg 685 SW 23rd Drive, IFAS, Univ. of Florida, P.O. Box 110720, Gainesville, FL 32611-0720; Tel: (352) 392-1978 ext. 406, FAX# 352-392-1988; e-mail: mfoo@ufl.edu.

WSR: Ms. Rebecca Sisco, Regional Field Coordinator, Western Region IR-4 Project, Univ. of CA, Dept. of Environmental Toxicology, One Shields Ave., 4218 Meyer Hall, Davis, CA 95616; Tel: (530) 752-7634; FAX# 530-752-2866; e-mail: rsisco@ucdavis.edu.

24. LABORATORY PERSONNEL/ID NO.: **LAB ID NO.:** **A2659.13-CAR14**

LABORATORY RESEARCH DIRECTOR/TESTING LABORATORY:
Matt Hengel, University of California, Davis, Dept. Of Env. Toxicology, 4419 Meyer Hall, One Shields Ave., Davis, CA 95616, (530) 752-2402, FAX# 530-754-8556; e-mail: mjhengel@ucdavis.edu

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25. LABORATORY SAMPLE INVENTORY:

Treated and untreated samples of lettuce (head & leaf) will be received from each of the field sites in Section 23.

Notify appropriate Field Research Director and Regional/ARS Field Research Coordinator of sample receipt.

26. LABORATORY SAMPLE IDENTIFICATION:

Each sample (raw commodity, crop fractions, storage stability, method validation, etc.) is to be assigned a unique laboratory sample number by the laboratory personnel.

A cross-reference must be maintained between the assigned laboratory sample number and the identification utilized in the Residue Sample Shipping and Identification Sheet.

27. LABORATORY SAMPLE STORAGE/PREPARATION:

Store samples in a limited access area at temperatures that will maintain frozen sample integrity (generally less than -20°C), until extraction.

The samples may be stored whole or ground, depending on the standard procedure of the analytical laboratory. However, if maceration will cause residue deterioration, then samples must be stored whole until analysis.

Do not composite samples.

The entire sample provide from the field must be ground, if sample is too large to be manageable then contact the Study Director for appropriate subsampling to assure the representative nature of the sample obtained in the field is maintained by the laboratory procedure.

Generally, sample extracts should be stored at ≤ 4°C for no longer than 14 days before analysis.

Storage stability of extracts must be demonstrated if extracts are not analyzed on the same day as they are obtained.

Concurrent fortifications may be used to show extract storage stability, as long as the extracts from the concurrent fortifications have been stored at least as long as the extracts obtained from the weathered samples.

Contact the Study Director if samples extracts are stored greater than 14 days prior to analysis.

All storage temperatures, conditions and location of sample storage are to be monitored and documented.

28. LABORATORY REFERENCE SUBSTANCE:

Obtain the laboratory reference substance(s), Nitrapyrin and the metabolite 6-chloropicolinic acid, from the Registrant. Contact Dow AgroSciences, Brian Bret, Phone: 916-780-7477; Fax: 916-780-7478; e-mail: blbret@dow.com and Cathy Galvin (CLGalvin@dow.com) , Tel. No. (317) 337-4828 to procure the proper material.

Document the date the analytical standards are received, the source, stated purity, storage conditions, and expiration date.

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Use only reference standards that have been characterized to meet GLP standards.

Archival and characterization of the reference substance (purity, identity, stability and solubility) is the responsibility of the registrant.

29. ANALYTICAL METHODOLOGY:

REFERENCE METHOD:

"DETERMINATION OF NITRAPYRIN IN POTATOES AND SORGHUM"; Author: E. L. Bjerke, Dow Chemical U.S.A. method ACR 79.6; dated: April 26, 1979.
AND
"Determination of Residues of 6-Chloropyridine-2-carboxylic Acid in Sweet Corn and Processed Products by Capillary Gas Chromatography with Mass Selective Detection", AUTHQRS: E. L. Olberding and D. R. Foster; DowElanco Study #: RES94039 dated: August 16, 1994

REFERENCE METHOD MODIFICATIONS/METHOD VALIDATION

The above listed Reference Method(s) may be modified if needed for the test matrix.

The Reference Method, along with any modifications must be validated on each crop fraction prior to residue sample analysis of that crop fraction.

To validate the method, fortify some of the control samples in triplicate with Nitrapyrin and the metabolite 6-chloropicolinic acid at a minimum of 3 concentration levels, lowest level of method validation (0.02 ppm or lower for nitrapyrin and 0.05 ppm or lower for 6- chloropicolinic acid), 0.2 ppm, and 2 ppm.

A minimum of 6 fortification samples (recovery spikes) at the lowest level of method validation (LLMV) is required for each analyte on each fraction prior to completion of the analytical phase of the study. **The acceptable recovery range is 70-120%.**

Documented approval from the Study Director is needed for recoveries outside of this range.

Document the exact procedures for sample analysis.

This validated step-by-step Working Method should incorporate all changes from the Reference Method.

Provide the Study Director with a copy of this Working Method and results of method validation prior to treated sample analysis.

If the Working Method has been used successfully on the test matrix or a similar matrix, the Study Director may waive the requirement for method validation. **Contact the Study Director for details**.

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SAMPLE ANALYSIS:

Samples will be analyzed for the combined residues of Nitrapyrin and the metabolite 6-chloropicolinic acid (expressed as parent equivalents) following the Working Methods.

The conversion factor for 6-chloripicolinic acid to Nitrapyrin equivalents is 1.465 as per the registrant (based on molecular weights (230.9/157.56) = 1.465).

For each field trial associated with this study, analyze at least one untreated and all treated residue samples for each matrix.

Contact the Study Director if residues above the lowest level of method validation for each matrix are detected in the untreated samples.

Any changes or modifications to the Working Method **require Study Director approval**. Whenever possible, **notify the Study Director** prior to occurrence.

Any change or modification to the Working Method must be documented in the raw data and discussed in the final report.

A typical analytical set (or run) should consist of calibration standards, untreated sample(s), concurrent recovery sample(s), and treated sample(s). Each analytical set must begin and end with a calibration standard. Additional calibration standards should be injected with sample analysis to ensure goodness of fit to the standard curve.

Over the course of method validation, residue sample and storage stability (if appropriate) analysis, adequate fortification samples that bracket the actual residues should be analyzed. At least one concurrent fortification sample should be analyzed per analytical set.

The Study Director should be immediately notified if concurrent recoveries deviate from the acceptable recovery range of 70% to 120%.

All efforts will be made to resolve existing recovery problems before continuing forward with additional analytical sets.

If residues in samples are above the highest Working Method validation concentration, additional recovery samples at levels above actual residues must be run in triplicate (3 uniquely extracted samples) as soon as practical. A minimum of 6 fortification samples (recovery spikes) at the lowest level of method validation (LLMV) is required for each analyte on each fraction prior to completion of the analytical phase of the study.

Treated samples may be analyzed using a screening run prior to analysis of treated samples using the working method, if the procedure is covered in the laboratory SOPs and the working method for the study. The peak areas of the treated samples and highest standard from any screening run will not be quantified or reported. (Any data, such as chromatograms, generated during screening run(s) will be kept.)

STORAGE STABILITY ANALYSIS:

As soon as possible after receipt of samples, a minimum of six subsamples of all available crop fractions of the control shall be fortified with Nitrapyrin and the metabolite 6-chloropicolinic acid at 0.2 ppm each.

Three samples of each analyte and crop fraction will be analyzed after the appropriate storage period. The analysis of storage stability samples may be conducted following a storage period equal to or greater than 90% of the longest storage period of the field-treated samples prior to their analysis. The remaining samples will be retained for long-term storage.

If analysis of treated/control samples is completed within 30 days of harvest analysis of storage fortification samples may not be required. If appropriate, **contact Study Director**.

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STATISTICAL METHOD(S):

Utilize regression analysis to determine the linearity of the standard curve (r^2) or the goodness of fit if the standard curve is non-linear.

Criteria for acceptance of the standard curve(s) or other statistical methods shall be determined by Laboratory Research Director and documented in the raw data.

30. DISPOSITION OF SAMPLES:

A minimum of 100 g or all (if less than 100 g) of each of the remaining frozen treated and untreated crop samples is to be retained for at least 12 months after submission of the laboratory report.

Long term fortified storage study samples shall be retained for a period of 1 to 5 years, as appropriate, after submission of the final report.

Sample extracts can be disposed of after data analysis.

The Study Director is to be contacted prior to discarding samples.

31. LABORATORY PROTOCOL/SOP MODIFICATIONS - LABORATORY RESEARCH:

Consult with the Study Director regarding desired changes in the protocol prior to occurrence. If appropriate, an amendment will be issued. Any unauthorized changes to the protocol will require the Laboratory Research Director to complete a written report outlining the changes.

This report should be **provided to the Study Director promptly** (e.g. within 14 days of occurrence) for review and signature.

All deviations from the approved SOP's also require documentation and approval by the Study Director.

32. LABORATORY DOCUMENTATION AND RECORD KEEPING:

All operations, data and observations shall be recorded in the analyst's notebook and log books, which must be signed and dated on date of entry.

At a minimum, collect and maintain the following raw data:

32.01 - Analytical standard(s) receipt, use and disposition records

32.02 - Analytical standard(s) storage conditions

32.03 - Analytical standard(s) dilution calculations and preparation records

32.04 - Sample storage conditions and locations

32.05 - Calculation work sheets

32.06 - All chromatograms, including those that are not reported

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32.07 - Chain of custody records

32.08 - Deviations from protocol, Working Method and/or standard operating procedures

32.09 - Name of personnel conducting specific research functions

32.10 - Sample analysis worksheets

32.11- Storage stability fortification records

32.12 - Concurrent recovery fortification records

A study file shall be developed and maintained by the Laboratory Research Director in conjunction with the analysis. It will contain a copy of the protocol, all pertinent raw data, documentation, records, correspondence, and the final analytical summary report. In addition, records of equipment maintenance and calibrations will be kept and periodically archived.

33. LABORATORY RESEARCH REPORT:

The analytical summary report sent to IR-4 HQ shall contain, but not be limited to:

33.01 - Applicable method validation data

33.02 - Applicable storage stability data

33.03 - Residue levels for control and treated samples with concurrent fortified recoveries

33.04 - Complete copy of the analytical Working Method

33.05 - Any modifications or deviations from the protocol and/or Working Method

33.06 - Completed IR-4 residue data reporting form or appropriate reporting form which includes information listed on the IR-4 generic residue data reporting form

33.07 - A minimum of 10 representative chromatograms of treated samples (if fewer than 10 submit all), a minimum of three chromatograms each of control and fortified control samples, chromatograms (one of each concentration) for at least one set of calibration standards for each compound analyzed, and any chromatograms of samples with unusual or inconsistent results

33.08 - Summary of quantitative data associated with samples and spike recovery samples should be provided (e.g. peak heights, injection volumes, sample sizes, final volumes, etc.)

33.09 - Clearly presented example calculations or statistical evaluations

33.10 - Discussion of results (including purpose of method modifications, sample storage conditions, etc.)

33.11 - Summary data associated with calibration standards (dilution and use records, calibration curves, etc.)

34. LABORATORY ARCHIVES:

When the final analytical summary report is completed and sent to the sponsor representative, all original raw data including a "true copy" of the final analytical summary report shall be secured in the archives of the Laboratory Research Director/Testing Facility.

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Dow AgroSciences, Brian Bret, Phone: 916-780-7477; Fax: 916-780-7478; e-mail: blbret@dow.com

Field Research Director	Field ID NO.	Formulation	Amount of Test Substance	Date Needed
Keri Skiles, Kearney Agricultural Research & Ext. Center (KARE), 9240 S. Riverbend Ave., Parlier, CA 93648, (559) 646-6061, FAX# 559-646-6015; Cell: 559-310-4093; e-mail: kmskiles@ucanr.edu	A2659.14-CA01	GF-3181 formulation (1.85 lb a.i. per gallon)	300 mL	ASAP

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