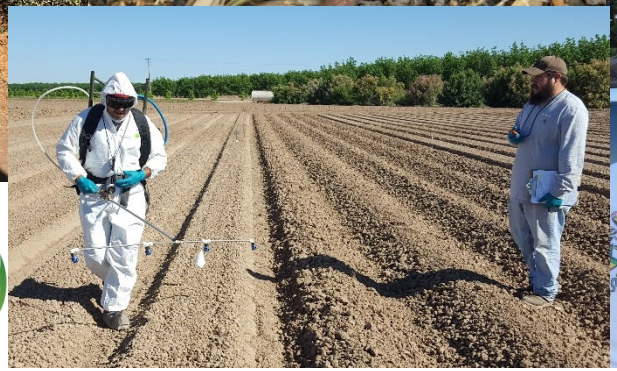
May 2019: Calibrations and Multiple Trials









The IR-4 Project

May 2019: Agenda

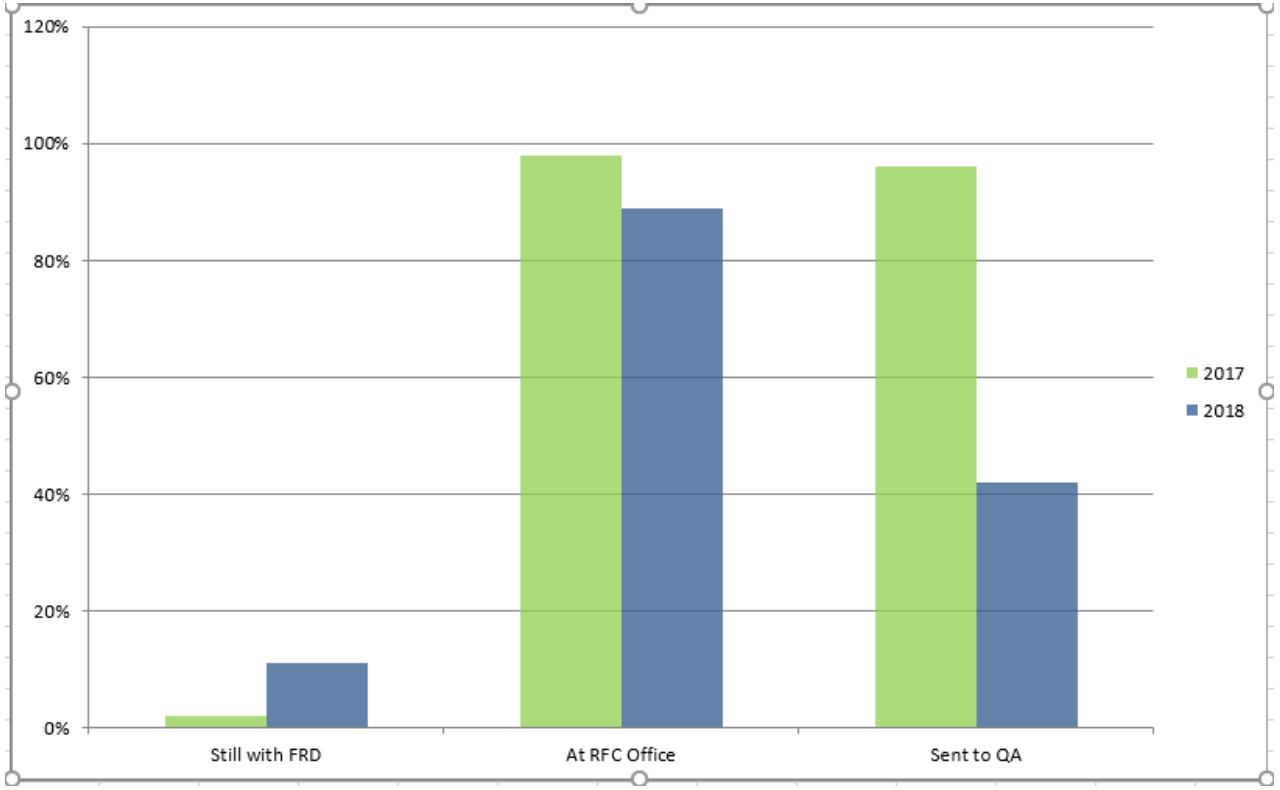
What we'll cover today:

- Calibrations (Ken Samoil)
- Multiple trials in same study

  and if time permits…
- Mixing tanks: Best practices
- State specific adjuvant labels
- Leaking equipment
- Application overage: Reality check
- When phyto is expected

The IR-4 Project

Field Data Notebook Status in the Western Region



2017

- 150/153 received by RFC Office - 98%
- 147/153 off to QA - 96%

2018

- 127/141 received by RFC Office - 90%
- 59/141 off to QA - 42%

MH

Application Equipment Calibrations

Ken Samoil

IR-4 Headquarters

SDE-PPNTs

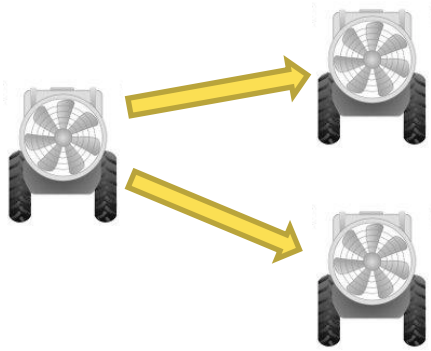
Study Director Extraordinaire

Purveyor of the Protocol and Notebook Templates

POP Quiz:1st Application Calibration Required?

Which are permissible?

A:



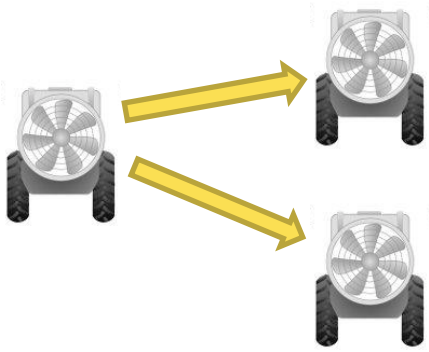
11699.17-CA44 FENPYROXIMATE / POMEGRANATE

Scenario A

11699.17-CA42 FENPYROXIMATE / POMEGRANATE

Same Calibration
Same Study

B:



11747.16-OR316 CYFLUMETOFEN / CHERRY

Scenario B

11812AAFC16-047R-236 PYDIFLUMETOFEN (FTH 545) / CHERRY

Same Calibration
Different *Studies*

Scenario A, B, Both, or Neither?

Application Equipment Calibrations

Requirements: for the conduct of acceptable calibrations for application equipment in residue trials

- The calibration data is used to:
  1. Confirm equipment delivers consistent output
  2. Calculate actual amount of test substance applied to the test plot

- IR-4 calibration requirements allow for single-run rechecks in certain circumstances

The IR-4 Project

Full Calibrations and Rechecks

Full calibrations for output and speed must be performed to ensure accurate delivery

- A calibration consists of ***a minimum*** of 3 consecutive, documented checks

- Output Calibration
  - Full calibration: 3 run discharge of all the nozzles
  - Recheck: single run discharge of all the nozzles
- Speed Calibration
  - Full calibration: 3 run check of speed
  - Recheck: Single run check of speed

The IR-4 Project

Output Calibrations:

Although full calibrations are preferred,
to determine if a full calibration is required:

Is this the first application of test substance in this trial?

- **YES**: A full calibration is required just prior to the first application
  - Allowable the day before the application, but calibration on the day of use is preferred
- **NO:** A single run recheck may be conducted to confirm consistent delivery
  - Within ±5% of the last complete calibration
  - Just prior to subsequent applications

The IR-4 Project

Changes in 2019 Protocol

Full Calibration Required

Application parameters or equipment components have changed (other than changing out CO_2 tanks) including:

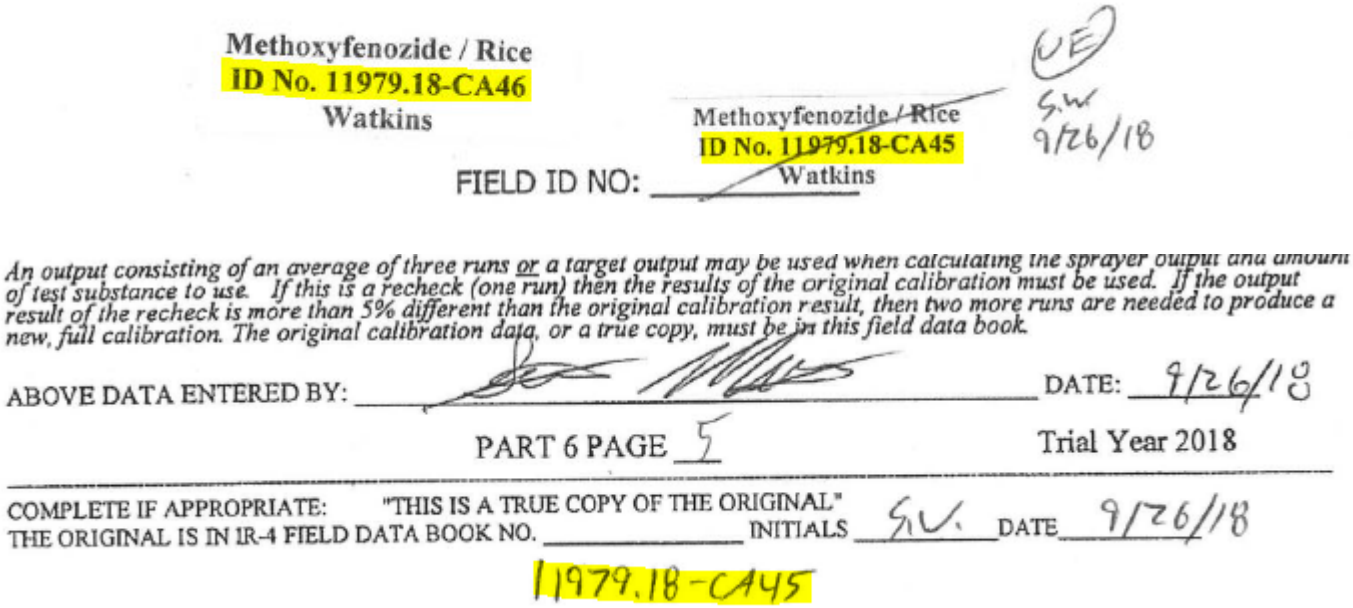
- Nozzle or hopper output
- Nozzle size or type (full output calibration is not required if the same, clearly identified nozzles used for the full calibration have been placed back in the same positions on the boom after other nozzles have been used for another trial; in this case, only a recheck is needed)
- Change in delivery pressure by more than 5% (even if it has been changed back to the pressure used during the initial calibration UNLESS the pressure change is accomplished by replacing the regulator, and the screw on the regulator used in this trial has not been turned since the full calibration)

The IR-4 Project

Calibration data from another trial

Most recent calibration data from another trial?

A certified true copy of that data must be included in the field data book for this trial



Methoxyfenozide / Rice
ID No. 11979.18-CA46
Watkins

~~Methoxyfenozide / Rice~~
ID No. 11979.18-CA45
~~Watkins~~

VE
S.W
9/26/18

FIELD ID 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: _____ DATE: 9/26/18

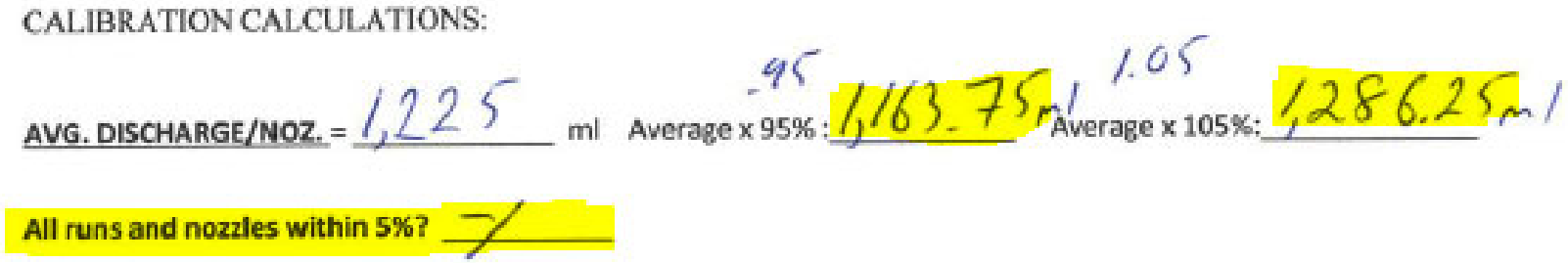
PART 6 PAGE 5 Trial Year 2018

COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. _____ INITIALS S.W. DATE 9/26/18

11979.18-CA45

Full output calibration is required if:

- This is the first application in the trial
- Recheck not within ±5% of the last complete calibration
- Application or Equipment Changes
  - Different nozzles
  - Different pressure
  - Different output
  - Any other changes to spray equipment that may affect output
- Single nozzle output off > 5% of mean output



CALIBRATION CALCULATIONS:

AVG. DISCHARGE/NOZ. = 1,225 ml Average x 95%: .95 1,163.75 ml Average x 105%: 1.05 1,286.25 ml

All runs and nozzles within 5%? ✓

The IR-4 Project

Recheck is required when:

- Full calibration data from another trial is used
- The equipment has been moved from the location where the most recent full calibration or recheck has occurred
- The equipment has been cleaned
- Nozzles are removed and placed back on
- CO_2 tank has been changed

The IR-4 Project

Output Calibrations:

Real Scenarios

1.Day 1=Calibration
Day 2= 1st app on 2 trials in same study with same app parameters
Is Day 1 Calibration OK for both?
Is recheck required before 2nd app?

2.Day 1=Calibration
Day 2= 1st app on 2 different trials of 2 different studies with same application parameters
Is Day 1 Calibration OK for both?
Is recheck required before 2nd app?

Differences for Canadian Trials

Output calibrations

- Full calibration from another trial may be used but equipment must be calibrated the day of or day before application and equipment parameters must not have changed
- Difference from IR-4
  - Recheck is required between each subsequent application

Speed Calibrations

Full speed calibration is required when:

- A major equipment change has been made, such as from a tractor-pulled sprayer to a backpack sprayer
- A complete output calibration is performed

Speed recheck is required when:

- Speed calibration data from another trial is used
- Whenever an output recheck is performed

Exceptions:

1) When a handgun is used to spray tree fruits or nuts, and each tree is sprayed for a predetermined time, a speed calibration is not required
2) When applications are made in multiple trials on the same site, same day, using the same equipment and same speed, a speed calibration is only required for the first application made that day, and rechecks are not required.

The IR-4 Project

Contact Info

Please send your comments to me at:

samoil@njaes.rutgers.edu

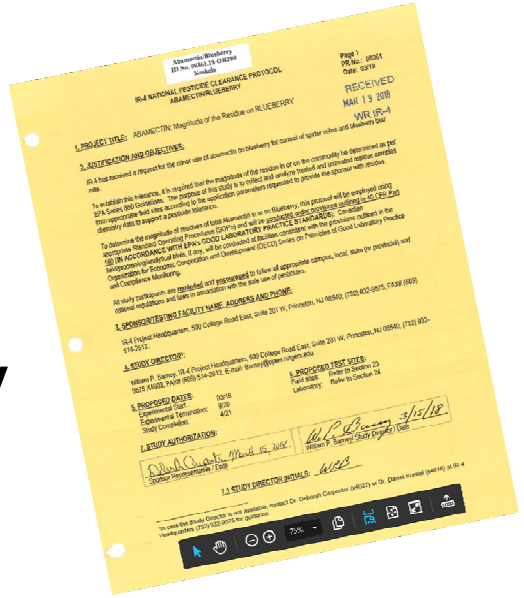
Or call me at: (732) 932 – 9575 ext. 4614

The IR-4 Project

2020 Notebook and Protocol Changes

Proposed Changes Sent by Email in July

- Please review
- Respond to Ken Samoil
  - Copy WR Field office
- Comments are taken seriously and will affect future trials



Considerations for planning

Trial Differentiation

- 30 days and 20 miles is the gold standard
- Or different varieties
  - Morphological or developmental difference
  - Different maturity dates, diff size fruit, different texture of fruit, etc.
  - Must be documented properly in notebook

Multiple Trials: Same Study

Documentation example of different varieties from a plum study

Blossom Bluff Orchards

Organic John W Plum

3.99 1 lb $3.99 / lb

Sorry, this product is unavailable. Check back soon!

See similar products

NOTES FROM THE PRODUCER

"Named for fruit breeder John Weinberger, the John W has reddish-purple skin with tan flecks and a golden interior. It is a relatively large plum with somewhat crisp, mild and sweet flesh.

Descriptions from keri Skiles:

John W. Plum fruit is slightly oval with a medium to large size. The skin is purple-red with speckles and the flesh is orange with a firm texture.

French prunes have tender, fine-textured flesh. They are medium-sized prune plum of red to violet purple skin over amber flesh.

PMT 3/16/15

Trees of Antiquity

Heirloom Fruit Trees for your Home.

Home :: Plums :: European Plums :: FRENCH PRUNE (D'Agen) 1856

Product 4/12

prev listing next

Categories

- Fruit Trees
- Apples
- Apricots
- Berries
- Blueberries
- Cherries
- Crabapples
- Figs
- Grapes ...
- Jujube
- Kiwis
- Medlar
- Mulberries
- Nectarines
- Nuts ...
- Peaches
- Pears ...
- Persimmons ...
- Plumcots
- Plums ...
- Pomegranates

larger image

FRENCH PRUNE (D'Agen) 1856

$26.95

Traditionally the French plum was dried and kept over a long period of time when refrigerators did not exist and winter meant months with few fruits or vegetables. Prunes were almost as precious as salt and were used to bargain wages during the 15th century. The French Prune was introduced to the states by Pierre and Louis Pellier, brothers who went to California for the Gold Rush, started a nursery business near San Jose in 1856 with plum cuttings they brought from France. Today they are sought by connoisseurs around the world. The French prune is very sweet, rich flavor with tender, fine-textured flesh. Medium-sized prune plum of red to violet purple skin over amber flesh. Delicious for eating fresh, baking, chutneys, and drying. Long-lived and self-fertile.

The IR-4 Project

Multiple Trials: Same Study

Documentation example for caneberries: raspberry v. blackberry

Potassium Phosphite/Caneberry
ID No. 11885.16.OR495
Koskela

A typical blackberry fruit (left) is oblong-shaped, with a solid core, about 7-10 grams in weight, and about 1.75 inches long.

A typical raspberry fruit (right) is usually round or slightly conical, with a hollow core, about 5 grams in weight, and is 0.5 -0.75 inches long.

Part 6 Page 19

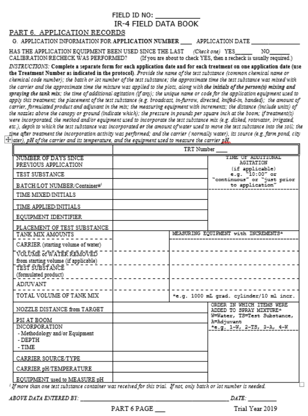
Both blackberries and raspberries are in the genus Rubus, but generally have different growth habits and differently shaped fruit.

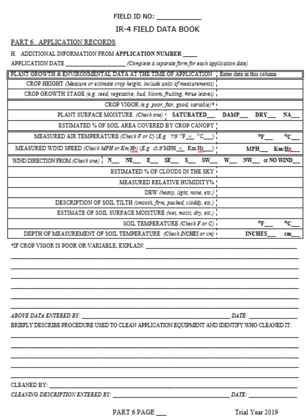
OC 1-31-17

Multiple Trials: Same Study

Documentation

- Info can be copied but…
  - The notebook should stand alone
  - Make sure everything on the page applies
  - Identify different entries as separate from the copy (blue pen helps)
- Part 6G (app data) and 6H (environ data) really should be original to the trial


FIELD ID NO: ________
IR-4 FIELD DATA BOOK
PART 6. APPLICATION RECORDS
G. APPLICATION INFORMATION FOR APPLICATION NUMBER ___ APPLICATION DATE ________
PART 6 PAGE ___ Trial Year 2019


FIELD ID NO: ________
IR-4 FIELD DATA BOOK
PART 6. APPLICATION RECORDS
H. ADDITIONAL INFORMATION FROM APPLICATION NUMBER ___
PART 6 PAGE ___ Trial Year 2019

SRF

Mixing Tanks: Best Practices

Same Day Applications: Can a single tank be used?

Consider: Same chemical, cleaning between chemicals, having multiple tanks

UC KARE tank setup:

- Separate calibration tank
- Other 3 tanks designated for Herbicide, Fungicide, and Insecticide

The IR-4 Project

SF

Adjuvant Labels

Does your adjuvant have a state-specific label?

- Induce: CA, WA, ID have separate labels and different rates from the national label

The IR-4 Project

Use the right label

General Induce Label

DIRECTIONS FOR USE

FOR USE WITH PRODUCTS REGISTERED FOR: AGRICULTURAL, AQUATIC, FORESTRY, INDUSTRIAL, MUNICIPAL, NON-CROPLAND, ORNAMENTAL, RIGHTS-OF-WAY, TURF AND OTHER USES.

The addition of an adjuvant to some pesticides or pesticide tank mix combinations may cause phytotoxicity to the foliage and/or fruit of susceptible crops. Prior to the addition of **INDUCE® to spray tank mixes, the user or application advisor must have** experience with the combination or must have conducted a phytotoxicity trial or must take the recommendations from the labels of the products to be tank mixed. **INDUCE® may be applied by Ground, CDA, Aerial, or Aquatic spray equipment. For most applications, use enough INDUCE® to allow for uniform wetting and deposition of the spray onto leaf surfaces without undue runoff.**

Ground, Aerial, CDA: Use 1-4 pints per 100 gallons of spray or 0.125-0.50% by volume.

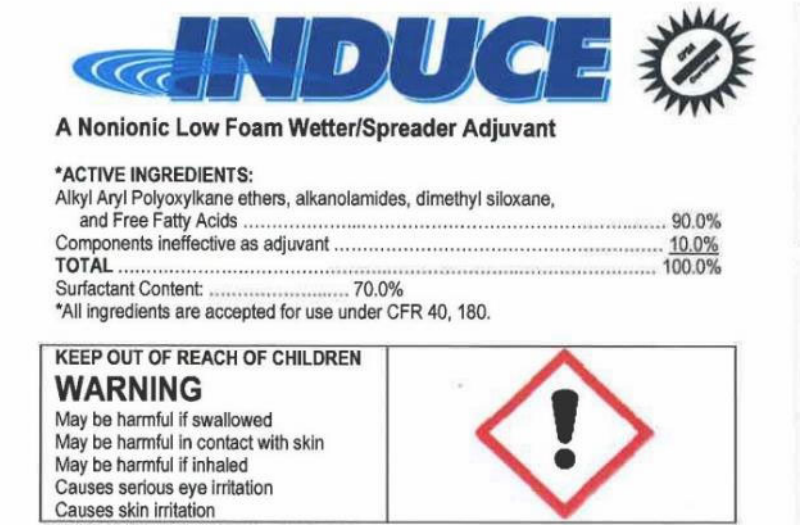
Aquatic: Use 1-4 pints per 100 gallons of spray or 0.125-0.50% by volume.

***Note: The above use recommendations are considered to be adequate for most uses. Some pesticides however, may require higher or lower rates for optimum effect. Follow the pesticide(s) label(s) directions when this occurs.**

For improved water penetration of hard-to-wet soils and the uniform distribution of applied moisture:

Lawns and Turf: Use INDUCE® at .50% v/v concentration.
Greens and Tees: Use INDUCE® at .125-.25% v/v concentration.
Deep Feeding Trees: Use INDUCE® at .25-.50% v/v concentration.

Application of **INDUCE® through irrigation systems are possible provided that recommended use rates and dilutions are maintained and local, state, and federal guidelines are followed.**



Use the right label

Washington and Idaho Induce Label

DIRECTIONS FOR USE

WITH PRODUCTS REGISTERED FOR: AGRICULTURAL, FORESTRY, INDUSTRIAL, MUNICIPAL, NON-CROPLAND, ORNAMENTAL, RIGHTS-OF-WAY,

TURF AND OTHER USES. (NOT FOR AQUATIC USES IN WASHINGTON.)

The addition of an adjuvant to some pesticides or pesticide tank mix combinations may cause phytotoxicity to the foliage and/or fruit of susceptible crops. Prior to the addition of **INDUCE® to spray tank mixes, the user or application advisor must have** experience with the combination or must have conducted a phytotoxicity trial or must take the recommendations from the labels of the products to be tank mixed.

INDUCE® may be applied by Ground, CDA, Aerial, or spray equipment. For most applications, use enough **INDUCE® to allow for uniform wetting and deposition of the** spray onto leaf surfaces without undue runoff.

Ground, Aerial, CDA: Use ½-3 pints per 100 gallons of spray.

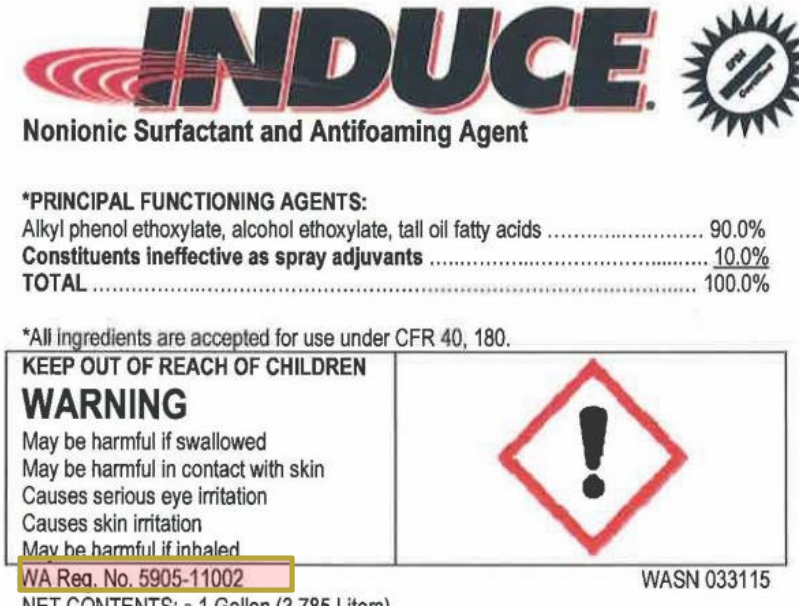
For uniform deposition and distribution of applied moisture:

Lawns and Turf: Use INDUCE® at 0.50% v/v concentration.

Greens and Tees: Use INDUCE® at 0.125 -0.25% v/v concentration.

Feeding Trees: Use INDUCE® at 0.25 - 0.50% v/v concentration.

Application of **INDUCE® through irrigation systems are possible provided that** recommended use rates and dilutions are maintained and local, State, and Federal guidelines are followed.



INDUCE

Nonionic Surfactant and Antifoaming Agent

*PRINCIPAL FUNCTIONING AGENTS:

Alkyl phenol ethoxylate, alcohol ethoxylate, tall oil fatty acids	90.0%
Constituents ineffective as spray adjuvants	10.0%
TOTAL	100.0%

*All ingredients are accepted for use under CFR 40, 180.

KEEP OUT OF REACH OF CHILDREN

WARNING

May be harmful if swallowed
May be harmful in contact with skin
Causes serious eye irritation
Causes skin irritation
May be harmful if inhaled

WA Reg. No. 5905-11002

WASN 033115

NET CONTENTS: 1 Gallon (3.785 Liters)

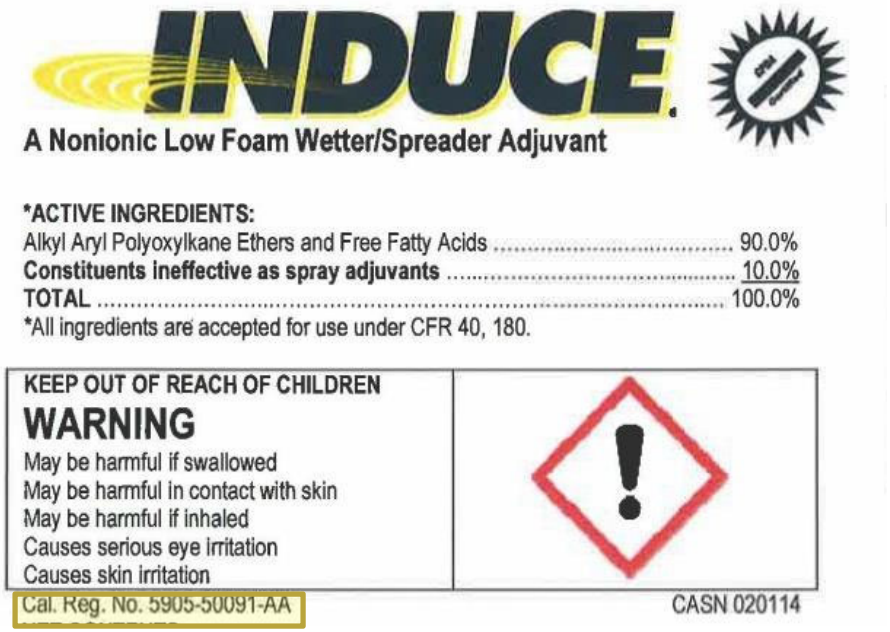
Use the right label

California Induce Label

DIRECTIONS FOR USE
WITH PRODUCTS REGISTERED FOR: AGRICULTURAL, AQUATIC, FORESTRY, INDUSTRIAL, MUNICIPAL, NON-CROPLAND, ORNAMENTAL, RIGHTS-OF-WAY, AND TURF.
The addition of an adjuvant to some pesticides or pesticide tank mix combinations may cause phytotoxicity to the foliage and/or fruit of susceptible crops. Prior to the addition of **INDUCE® to spray tank mixes, the user or application advisor must have** experience with the combination or must have conducted a phytotoxicity trial or must take the recommendations from the labels of the products to be tank mixed **INDUCE® may be applied by Ground, CDA, Aerial, or Aquatic spray equipment. For** most applications, use enough **INDUCE® to allow for uniform wetting and deposition** of the spray onto leaf surfaces without undue runoff.

Ground, Aerial, CDA: Use ½-3 pints per 100 gallons of spray.
Aquatic: Use ½-4 pints per 100 gallons of spray.

Note: The above use recommendations are considered to be adequate for most uses. Some pesticides however, may require higher or lower rate for optimum effect. Follow the pesticide(s) label(s) directions when this occurs.
For uniform deposition and distribution of applied moisture:
Lawns and Turf: Use INDUCE® at .50% v/v concentration.
Greens and Tees: Use INDUCE® at .125-.25% v/v concentration.
Feeding Trees: Use INDUCE® at .25-.50% v/v concentration.
Application of **INDUCE® through irrigation systems are possible provided that** recommended use rates and dilutions are maintained and local, state, and federal guidelines are followed.


INDUCE

A Nonionic Low Foam Wetter/Spreader Adjuvant

*ACTIVE INGREDIENTS:
Alkyl Aryl Polyoxylkane Ethers and Free Fatty Acids 90.0%
Constituents ineffective as spray adjuvants 10.0%
TOTAL 100.0%
*All ingredients are accepted for use under CFR 40, 180.

KEEP OUT OF REACH OF CHILDREN
WARNING
May be harmful if swallowed
May be harmful in contact with skin
May be harmful if inhaled
Causes serious eye irritation
Causes skin irritation

Cal. Reg. No. 5905-50091-AA

CASN 020114