



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

DEC 15 2003

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

Jon C. Wood  
Amvac Chemical Corp.  
4695 MacArthur Court, Suite 1250  
Newport Beach, CA 92660

Dear Mr. Wood:

Subject: Revised Labeling  
Citrus Fix Plant Growth Regulator  
EPA Registration No. 5481-145  
Your Submissions Dated July 21, 2003

The amendment referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended is acceptable provided that you:

1. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:

a. A brief internet search indicates that Minneola is a type of Tangelo. To be consistent with the new Tangerine section the Tangelo section should read:

Tangelo (Minneola), and other Citrus Hybrids

b. Please note that 40 CFR 180.142(a)(ii) establishes tolerances for pre- and post-harvest application of isopropyl ester of 2,4-D to citrus fruits. 40 CFR 180.1(h) defines citrus fruits as:

Grapefruit, lemons, limes, oranges, tangelos, tangerines, citrus citron, kumquats and hybrids of these.

c. The phrase "following an oil spray" in the heading on page 4 is misleading since the directions for use specify adding this product to the oil spray. Correct the heading to read similar to the following:

Counteract Leaf and Fruit Drop Caused by Oil Sprays

2. Submit one (1) copy of your final printed labeling before you release the product for shipment.

278

-2-

A stamped copy of the labeling is enclosed for your records.

If you have any questions concerning this letter, please contact Mr. James Stone at 703-305-7391.

Sincerely yours,

JS

Joanne I. Miller  
Product Manager (23)  
Herbicide Branch  
Registration Division (7505C)

Enclosure

3 7 8



**CITRUS FIX™**  
**Plant Growth Regulator**

**ACTIVE INGREDIENT:**

Isopropyl Ester of 2,4-Dichlorophenoxyacetic Acid\* ..... 45.0%

**INERT INGREDIENTS:** ..... 55.0%

**TOTAL:** ..... 100.0%

\*2,4-Dichlorophenoxyacetic Acid Equivalent 38%

3.36 lbs. 2,4-D acid equivalent per gallon

**The State of California Department of Agriculture classifies this ester of 2,4-D as "Highly Volatile" and therefore does not permit its use as a herbicide in California.**

**KEEP OUT OF REACH OF CHILDREN**  
**CAUTION**

**FIRST AID**

<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>Call a poison control center or doctor immediately for treatment advice.</li> <li>Have person sip a glass of water if able to swallow.</li> <li>Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>Move person to fresh air.</li> <li>If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If on skin or clothing:</b>	<ul style="list-style-type: none"> <li>Take off contaminated clothing.</li> <li>Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes:</b>	<ul style="list-style-type: none"> <li>Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>

**EMERGENCY INFORMATION**

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

FOR THE FOLLOWING EMERGENCIES, PHONE 24 HOURS A DAY:

Transportation: CHEMTREC ..... 1-800-424-9300

Other: AMVAC ..... 1-323-264-3910

**NOTE TO PHYSICIAN**

Contains aromatic solvents. Vomiting may cause aspiration pneumonia.

SEE SIDE/BACK PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND DIRECTIONS FOR USE.

EPA REG. NO. 5481-145  
EPA EST NO. 5481-CA-1

ACCEPTED  
with COMMENTS  
by EPA Letter Dated  
DEC 15 2003

Net Contents:  
As Marked on Container

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.

5481-145



4100 E. Washington Blvd  
Los Angeles, CA 90023 USA  
1-323-264-3910 • www.amvac-chemical.com

**PRECAUTIONARY STATEMENTS**

**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**CAUTION:** Causes moderate eye irritation. Harmful if swallowed, absorbed through the skin or inhaled. Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category (G) on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate, or viton.
- Shoes plus socks
- Protective eyewear
- Mixers and loaders who do not use a mechanical system (probe and pump) to transfer the contents of this container must wear coveralls or a chemical resistant apron in addition to the other required PPE.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. After each day of use, clothing or PPE must not be reused until it has been cleaned.

**ENGINEERING CONTROLS STATEMENT**

When handlers use closed system, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**User Safety Recommendations**

User should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing 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.

**ENVIRONMENTAL HAZARDS**

This product is toxic to aquatic invertebrates. Vapors, spray drift or runoff may adversely affect aquatic invertebrates and non-target plants. Do not apply directly to water, or 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 wash waters.

**Groundwater Contamination:** Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D have been associated with mixing/loading and disposal sites. Caution should be exercised when handling 2,4-D pesticides at such sites to prevent contamination of groundwater supplies. Use of closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.

**PHYSICAL OR CHEMICAL HAZARDS**

Do not use, pour, spill or store near heat or open flame.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. 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. Do not apply this product through any type of irrigation system.

### 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 (PPE), and restricted-entry intervals. 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 12 hours.

PPE required for early entry to 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, is:

- Coveralls
- Chemical resistant gloves, such as Barrier Laminate or Viton
- Shoes plus socks
- Protective eyewear

### USE PRECAUTIONS

- ALCO CITRUS FIX is a plant growth regulator for use on citrus only. Do not use as a herbicide!
- Do not use on citrus trees less than 6 years old.
- Do not apply during a flush of leaf growth.
- Do not apply within 7 days of harvest.
- Do not allow drift to susceptible plants, which include but not limited to: cotton, grapes, roses, beans, peas, alfalfa, lettuce, ornamentals and broadleaf plants. This product may injure cotton, beans, peas, grapes, ornamentals, etc. (coarse sprays are less likely to drift).
- Do not use equipment that has been used to spray ALCO CITRUS FIX to spray 2,4-D sensitive plants. Always use caution in disposing of spray solutions as they can cause extreme injury or kill sensitive plants. (See Storage and Disposal section.)
- Before using spray equipment for any other purpose, thoroughly clean same with hot soap suds followed by soaking and washing with ammonia or baking soda.

### USE DIRECTIONS

The following "Use Directions" as well as the above "Use Precautions" are taken from data developed and published by the University of California Experiment Station, Riverside, California. For additional Uses and Precautions of ALCO CITRUS FIX in California, consult the UC IPM Pest Management Guidelines - CITRUS "Plant Growth Regulator" Section or visit [www.ipm.ucdavis.edu/pdf/pmg/pmgcitrus.pdf](http://www.ipm.ucdavis.edu/pdf/pmg/pmgcitrus.pdf).

### MIXING DIRECTIONS

Carefully measure and accurately add the required quantity of ALCO CITRUS FIX to the spray mixture. Add only during the agitation of the spray material.

678

**PRE-HARVEST FRUIT DROP CONTROL**

Add the required amount of ALCO CITRUS FIX to give the required milliliters or fluid ounces per acre as shown in Table 1. Spray to ensure coverage on the outside of tree canopy. A minimum of 100 gallons per acre is recommended for mature trees.

TABLE 1				
Citrus Variety	Geographic Location	Application Timing	Application Rate	
			ml/acre	fl oz/acre
Navel Oranges	Central/Southern CA	Sept - Nov.	75.0	2.5
		Dec. - Jan.	37.5	1.25
		Sept. - Nov. <i>Fall Whitewash (Hydrated Lime)</i>	112.5	3.8
Valencia Oranges	Central/Southern CA	Fruit Size 1/2" dia. min.	37.5	1.25
Grapefruit ( <i>Summer Fruit Drop</i> )	Central/Southern CA	Fruit Size 3/4" dia. min.	75.0	2.5
Grapefruit ( <i>Winter Fruit Drop</i> )	Central/Southern CA	Oct. - Jan.	75.0	2.5
		<i>Fall Whitewash (Hydrated Lime)</i>	112.5	3.8
Tangelo, Minneola, and other Citrus Hybrids	Central/Southern CA	Sept - Nov.	75.0	2.5
Tangerines ( <i>mandarins, mandarin oranges, and Satsuma mandarins</i> )	Central/Southern CA	Sept - Nov.	75.0	2.5
Lemons and Limes	Inland CA Only	Oct. - Dec.	56.25	1.9

**LEAF AND FRUIT DROP CONTROL FOLLOWING AN OIL SPRAY**

For use in pesticide oil sprays to counteract leaf drop and fruit drop caused by the oil.

Use 2.2 ml of ALCO CITRUS FIX per gallon of spray oil. Use sufficient spray volume to ensure good coverage.

**INCREASING FRUIT SIZE**

Fruit sizing sprays require excellent coverage. A minimum of 500 gallons per acre for mature trees is recommended. Apply water spray as an outside coverage using the recommended milliliters or fluid ounces of ALCO CITRUS FIX shown in Table 2.

TABLE 2			
Variety	Fruit Size at Time of Spraying (Inches in Diameter)	Milliliters Per Acre	Fluid Ounces Per Acre
Navel & Valencia Oranges	3/16 to 1/4	56	1.9
	1/4 to 1/2	75	2.5
	1/2 to 5/8	94	3.2
	5/8 to 3/4	112.5	3.8
Grapefruit	1/4 to 3/8	56	1.9
	3/8 to 5/8	75	2.5
	5/8 to 3/4	94	3.2
	3/4 to 1	112.5	3.8

**DIRECTIONS FOR PACKING HOUSE USE**

1. To keep buttons alive and healthy, and therefore prevent *Alternaria rot*.
2. In lemon packing houses where a water-wax emulsion is applied to the fruit prior to storage, the growth regulator should be added to this wax emulsion.
3. If a water-wax emulsion is not used, then a separate treatment must be arranged to follow the final fresh water rinse of the fruit. Such a treatment could be designed so as to flush a growth regulator solution over the fruit and re-circulate the surplus or apply a very fine spray of growth regulator to the fruit and not re-circulate the small surplus. The amount of growth regulator adhering to the fruit would be about the same in either case, so no change in concentration would be necessary.
4. A 500 ppm concentration of 2,4-D is recommended. This is obtained by adding 1-5/8 fluid ounces (48 ml) of ALCO CITRUS FIX to each 10 gallons of water.

**ADDITIONAL PRECAUTIONS**

1. Under certain circumstances which seem to be related to the use of chromates in the airwasher, 2,4-D is not compatible with nitrogen trichloride, "Decco", as used for control of decay. Packing houses using Decco should avoid using a growth regulator in the wax emulsion, or use it with extreme caution. Rind injury appearing as reddish or brownish discoloration has been greatly intensified by these growth regulators in some packing houses using Decco.
2. When a minimum storage period is desired it would be a disadvantage to use 2,4-D because of the delay in changing to a yellow color. Also the percentages of juice may not increase as rapidly.
3. Late summer use of 2,4-D in the packing house may necessitate more careful culling for weak fruit (blossom-end decline) because of the retention of green buttons in such fruit.

**IMPORTANT:** Any equipment used in spraying any product containing 2,4-D should not be used to spray 2,4-D sensitive plants. In disposing of solutions of 2,4-D, it should be borne in mind that they can cause extreme injury or death to sensitive plants.

**STORAGE AND DISPOSAL**

**STORAGE:** This product may crystallize if stored at cold temperatures. If crystallization occurs, call AMVAC for instructions before using. Store product in original container in a secure, dry and temperate area. Keep container closed when not in use. Do not store near food, feed, fertilizers, seeds, insecticides or fungicides. Do not store 30 gallon drums over two high. Do not use or store around the home. Avoid contact with water. In case of spill or leak, soak up with sand, earth, or synthetic absorbent (do not use alkaline absorbents) and dispose of wastes in compliance with local State and Federal regulations.

**PESTICIDE DISPOSAL:** Do not contaminate water, food or feed by storage or disposal. Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA regional office for guidance.

**CONTAINER DISPOSAL:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by State and local authorities, by burning. If burned stay out of smoke.

**ALCO CITRUS FIX may be used as a Plant Growth Regulator on Citrus in Florida. Refer to CITRUS FIX Florida labels EPA SLN No. FL-890040 and EPA SLN No. FL-980006 for complete directions.**

**LIMITED WARRANTY AND DISCLAIMER**

The manufacturer warrants (a) that this product conforms to the chemical description on the label; (b) that this product is reasonably fit for the purposes set forth in the directions for use, subject to the inherent risks referred to herein, when it is used in accordance with such directions; and (c) that the directions, warnings, and other statements on this label are based upon responsible experts' evaluations of reasonable tests of effectiveness, of toxicity to laboratory animals and to plants and residues on food crops, and upon reports of field experience. Tests have not been made on all varieties of food crops and plants, or in all states or under all conditions.

**THERE ARE NO EXPRESS WARRANTIES OTHER THAN THOSE SET FORTH HEREIN. THE MANUFACTURER NEITHER MAKES NOR INTENDS, NOR DOES IT AUTHORIZE ANY AGENT OR REPRESENTATIVE, TO MAKE ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, AND IT EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTY OF QUALITY OR PERFORMANCE. THIS WARRANTY DOES NOT EXTEND TO, AND THE BUYER SHALL BE SOLELY RESPONSIBLE FOR, ANY AND ALL LOSS OR DAMAGE WHICH RESULTS FROM THE USE OF THIS PRODUCT IN ANY MANNER WHICH IS INCONSISTENT WITH THE LABEL DIRECTIONS, WARNINGS OR CAUTIONS.**

**BUYER'S EXCLUSIVE REMEDY AND MANUFACTURER'S OR SELLER'S EXCLUSIVE LIABILITY FOR ANY AND ALL CLAIMS, LOSSES, DAMAGES, OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER OR NOT BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, SHALL BE LIMITED, AT THE MANUFACTURER'S OPTION, TO REPLACEMENT OF, OR THE REPAYMENT OF THE PURCHASE PRICE FOR, THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. IN NO EVENT, SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.**

AMVAC offers this product, and Buyer accepts it, subject to the foregoing Limited Warranty which may be varied only by agreement in writing signed by an authorized representative of AMVAC.

ALCO® is a registered trademark of AMVAC Chemical Corporation.

CITRUS FIX™ is a trademark of AMVAC Chemical Corporation.

AMVAC Chemical Corporation  
4100 E. Washington Boulevard  
Los Angeles, CA 90023 U.S.A.  
1-323-264-3910  
www.amvac-chemical.com