

86330-15

10/28/2010

1 of 20



U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (7505P)
Ariel Rios Building
1200 Pennsylvania Ave., NW
Washington, D.C. 20460

EPA Reg. Number:
86330-15

Date of Issuance:
OCT 28 2010

NOTICE OF PESTICIDE:
 Registration
 Reregistration
(under FIFRA, as amended)

Term of Issuance: Unconditional
Name of Pesticide Product:
SUNSPRAY® 6E WESTERN

Name and Address of Registrant (include ZIP Code):

Holly Refining & Marketing-Tulsa, LLC
1700 South Union Avenue
Tulsa, OK 74107
ATTN: Ms. Jennifer Hall

S 884702
676/1275
S 884701
676/1135
S 85329
676/1140
S 884699
676/1135

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby reregistered under the Federal Insecticide, Fungicide and Rodenticide Act. Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

Based on your response to the Reregistration Eligibility Decision, EPA has reregistered the product listed above. This action is taken under the authority of section 4(g)(2)(C) of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended. Reregistration under this section does not eliminate the need for continual reassessment of pesticides. EPA may require submission of data at any time to maintain the registration of your product.

The basic Confidential Statement of Formula (CSF) dated September 1, 2009, is accepted and replaces all CSFs previously accepted for this product.

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, is accepted.

See page 2 for comments Labeling Notes.

Submit one (1) copy of the final printed label before you release the product for shipment. Products shipped after 12 months from the date of this Notice or the next printing of the label whichever occurs first, must bear the new revised label. A stamped copy of the label is enclosed for your records. If you have any questions, please contact William Jacobs at 703-305-6406 or jacobs.bill@epa.gov.

Signature of Approving Official:
Venus Eagle, Product Manager 01
Insecticide-Rodenticide Branch
Registration Division (7505P)

Date:
OCT 28 2010

Labeling Notes

The comments below apply to the labeling that was submitted to the Office of Pesticide Programs on October 15, 2010, and received on October 18, 2010.

Container Label

1. In the "**Metal Container:**" paragraph (under "**Container Disposal:**") in the "**STORAGE AND DISPOSAL**" section, "State an local" should be replaced with "State and local".

Booklet

1. In the "**Metal Container:**" paragraph (under "**Container Disposal:**") in the "**STORAGE AND DISPOSAL**" section, "State an local" should be replaced with "State and local".
2. In the third sentence of the "**CONCENTRATE APPLICATIONS**" paragraph (page 4), "esults" should be replaced with "results".
3. In the third sentence of the first paragraph under "**TANK MIXES**" (page 5), "informayion" should be replaced with "information".
4. In the fourth sentence under "**APPLICATIONS TO GRAPES**" (page 5), "cabarnet" should be changed to "cabernet".

SUNSPRAY® 6E WESTERN

A superior horticultural spray oil for western agriculture

Active Ingredient: Mineral Oil* 98.8 wt%
Other Ingredient: Emulsifier 1.2 wt%
100.0 wt%

*Un sulfonated Residue of Mineral Oil 92.0 %Min
*50% Distillation Point of Mineral Oil 415.0 °F
*Flash Point 345.0 °F
Weight per Gallon 7.1 lbs.

*Contains petroleum distillates

CAUTION: KEEP OUT OF THE REACH OF CHILDREN

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail).

FIRST AID

If on skin or clothing:

Take off contaminated clothing.
Rinse skin immediately with plenty of water for 15-20 minutes followed by washing with soap & water.

Call a poison control center or doctor for treatment advice.

If swallowed:

Immediately call a poison control center or doctor.

DO NOT INDUCE VOMITING unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

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 the 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, if possible.

Call a poison control center or doctor for further treatment advice.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-918-594-6000 for emergency medical treatment information.

NOTE TO PHYSICIAN

Contains petroleum distillates - vomiting may cause aspiration pneumonia. Aspiration may occur after swallowing or vomiting and results in serious, and sometimes delayed, lung injury.

According to the California Safe Drinking Water and Toxic Enforcement Act of 1986 Regulations, otherwise known as "Proposition 65": ATTENTION: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.



Holly Refining & Marketing-Tulsa, LLC
1700 South Union Avenue
Tulsa, OK 74107

EPA Registration No. 86330-15
EPA Establishment No. 86330-OK-1
Net Content: BULK

SS-5304 9/09

PRECAUTIONARY STATEMENTS

Hazards to humans & domestic animals.

CAUTION: Harmful if absorbed through skin. Avoid contact with eyes, skin, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

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.

Mixers, loaders, applicators, flaggers, and other handlers must wear: long-sleeve shirt and long pants, shoes plus socks, and chemical-resistant gloves made of Barrier Laminate or Viton. See engineering controls for additional requirements. 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. Discard clothing and other absorbent material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

USER SAFETY RECOMMENDATIONS

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should 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.

ENGINEERING CONTROLS FOR AERIAL APPLICATIONS

Engineering Controls: Pilots must use an enclosed cockpit that meets the requirements listed in the WPS for agricultural pesticides [40 CFR 170.240(d)(6)].

ENVIRONMENTAL HAZARDS

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 washwater or rinsate. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Apply this product only as specified on this label.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited.

Pesticide Storage: Store in a cool, dry, locked area out of the reach of children. Keep oil container tightly closed in storage to prevent entry of water.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. 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.

Metal Container: If container is not to be recycled, puncture and dispose of it in a sanitary landfill or by other procedures approved by State or local authorities.

Plastic Container: If container is not to be recycled, puncture and dispose of it in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

See additional Precautionary Statements inside booklet. See Directions for Use inside booklet.

EPA Reg. No.:

86330-15

Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under:

OCT 28 2010

ACCEPTED

30820

Sunspray® 6E Western

A superior horticultural spray oil for western agriculture

Active Ingredient: Mineral Oil*	98.8 wt%
Other Ingredient: Emulsifier.....	1.2 wt%
	100.0 wt%
*Unulfonated Residue of Mineral Oil.....	92.0 % Min
*50% Distillation Point of Mineral Oil	415.0 °F
*Flash Point	345.0 °F
Weight per Gallon	7.1 lbs.

*Contains petroleum distillates

CAUTION: KEEP OUT OF REACH OF CHILDREN

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If swallowed: Immediately call a poison control center or doctor. DO NOT INDUCE VOMITING unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

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 the 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, if possible. Call a poison control center or doctor for further treatment advice.

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EPA Registration No. 86330-15

 **HOLLY** Lubricants & Specialty Products
 Holly Refining & Marketing-Tulsa, LLC
 1700 South Union Avenue
 Tulsa, OK 74107

PRECAUTIONARY STATEMENTS

**Hazards to humans & domestic animals
CAUTION**

Harmful if absorbed through skin. Avoid contact with eyes, skin, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

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.

Mixers, loaders, applicators, flaggers, and other handlers must wear: long-sleeve shirt and long pants, shoes plus socks, and chemical-resistant gloves made of Barrier Laminate or Viton. See engineering controls for additional requirements.

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. Discard clothing and other absorbent material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

User Safety Recommendations

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should 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.

ENGINEERING CONTROLS FOR AERIAL APPLICATIONS

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Plastic Container: If container is not to be recycled, puncture and dispose of it in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

LIMITED WARRANTY AND LIABILITY

This product conforms to the description and is suitable for the uses set forth on this label but is strictly limited to those uses solely as directed under the specified label conditions, and only if purchased in the original unopened container.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAWS, MANUFACTURER AND SELLER DISCLAIM ANY AND ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE (except as specified on this label). Buyer and all users shall assume all risk, liability and damage if this product is used, stored, handled or applied other than as specifically set forth on this label. **TO THE EXTENT CONSISTENT WITH APPLICABLE LAWS, LIABILITY OF MANUFACTURER AND SELLER AND USER'S REMEDIES SHALL BE LIMITED TO REFUND OF THE PURCHASE PRICE OR REPLACEMENT OF THE SPECIFIC QUANTITY INVOLVED. TO THE EXTENT CONSISTENT WITH APPLICABLE LAWS, IN NO EVENT SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.**

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 through any type of irrigation system. 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 (PPE) and restricted-entry interval. 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 4 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 soil or water, is: coveralls, shoes plus socks, and chemical-resistant gloves made of any waterproof material.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not enter or allow others to enter until sprays have dried.

USE RESTRICTIONS

This product may be used to control mite and insect pests on deciduous fruit, nut and vine crops including almonds, apples, apricots, avocado, cherries, figs, grapes, kiwifruit, nectarines, olives, pears, peaches, persimmons, plums, prunes, walnuts and citrus. This product may also be applied to corn and sugar beets.

Do not use this product in Landscape Areas, Greenhouses, or Nursery Production Areas.

PESTS CONTROLLED

This product controls mite and insect pests in the egg stage including: spider and eriophyid mites, armored and soft scales, mealybugs, psyllids, aphids, leafrollers and leafhoppers. This product also kills other immature forms if spray covers the insect. This product may be applied up to harvest.

MIXING DIRECTIONS

1. Add sufficient water to the mixing tank to allow proper agitation by pump or paddles.
2. Add other desired pesticide. If a wettable powder formulation is to be added, mix the water and powder thoroughly so that the powder is totally suspended in the water before the oil is added. If other pesticide to be added is an emulsifiable formulation, do so after the oil and water have been thoroughly mixed.
3. Add oil under agitation when tank is 3/4 full. Top off with water to form milky solution.
4. Maintain agitation until solution is used.
5. In small equipment lacking agitators, stir or shake diluted spray frequently during application.
6. Read and follow all directions and restrictions on the labels of the proposed tank-mix products.
7. Flush fluid in sprayer hose lines back into tank reservoir if fluid is allowed to stand for more than 20 minutes.

APPLICATION INSTRUCTIONS

The target pest must be completely covered with spray. Oil residue on the plant surface often acts as a feeding and ovipositioning deterrent. However, the primary target is the pest itself as oil is a contact pesticide. Spray only when the temperature is above 40°F and there is no danger of freezing.

DILUTE APPLICATIONS use the minimum number of gallons needed to completely cover all the tree surfaces, but not to the point of runoff. For many tree fruits this can be as many as 300-600 gallons per acre or as low as 100 gallons per acre for smaller trees. For mature citrus trees this can be as many as 600-2000 gallons per acre, depending on the tree size. For avocado trees this can be as much as 700-1800 gallons per acre. Dilute applications ensure the best coverage.

CONCENTRATE APPLICATIONS (usually 45 to 125 gallons spray per acre) may reduce coverage and effectiveness. Concentrate application includes the use of low volume (from 10 to 100 gallons spray per acre) sprayers. A concentrate application can provide satisfactory

results as long as the spray unit is properly engineered, calibrated and operated. Speed of travel for ground application is extremely important. Tractor speed from 1 M.P.H. to 4 M.P.H. is recommended depending on crop, crop size and target pest. Low volume applications of Sunspray will require approximately the same amount of oil per acre as dilute sprays but applied with much less water. Spray oil calculations should be based on no run off of the oil phase of the mixture.

SPRAY DRIFT MANAGEMENT

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and method of application (e.g., ground, aerial, airblast) can influence pesticide drift. The applicator and grower must evaluate all factors and make appropriate adjustments when applying this product. Do not apply at wind speeds greater than 15 mph at the application site. Apply as a medium or coarser spray (ASABE standard 572), and the minimum volume mean diameter (VMD) for spinning atomizer nozzles. If applying at wind speeds less than 3 mph, the applicator must determine if a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions.

GROUND-BASED EQUIPMENT APPLICATION: Apply using a nozzle height of no more than 4 feet above the ground or crop canopy. Do not apply at wind speeds greater than 15 mph at the application site. Apply as a medium or coarser spray (ASABE standard 572), and the minimum volume mean diameter (VMD) for spinning atomizer nozzles.

AIRBLAST EQUIPMENT APPLICATION: For airblast applications, turn off outward pointing nozzles at row ends and when spraying outer row. To minimize spray loss over the top in orchard applications, spray must be directed into the canopy.

AERIAL APPLICATIONS: Use only as an emergency application when soil conditions do not permit regular ground application. Apply quantity of product shown for each listed crop for control of listed insects in sufficient water to make a minimum of 20 gals. dilute spray per acre. For aerial applications of agricultural products, do not release spray at a

height greater than 10 feet above the ground, top of crops, or above the orchard canopy. The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter. When applications are made with a cross-wind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind. Leave at least one swath unsprayed at the down-wind edge of the treated field. Do not apply at wind speeds greater than 15 mph at the application site. Apply as a medium or coarser spray (ASABE standard 572), and the minimum volume mean diameter (VMD) for spinning atomizer nozzles.

TIMING OF TREATMENT

The applicator must determine the precise timing to fit local growth and climatic conditions.

DO NOT EXCEED MAXIMUM RATES OR APPLY MORE OFTEN THAN INDICATED IN THIS BOOKLET. THIS PRODUCT MAY BE USED UP TO THE DAY OF HARVEST

TANK MIXES

Do not tank-mix with any herbicides. Do not tank-mix with any insecticide, fungicide or miticide whose label indicates that it should not be used with oil. Consult local pest management information regarding other insecticides that may be tank-mixed with oil. This information should indicate rates for the insecticide and the oil along with more precise information as to the best time for application. It is important for users to read and follow all directions and restrictions on the labels of the proposed tank-mix products. Check tank mixture for physical and chemical compatibility. Mix only enough material to do the job.

This product may be used:

1. as a carrier for *Bacillus thuringiensis* when applied through a mist blower or a cold fog machine;
2. in a tank mix with Lorsban on apples, pears, plums, prunes, peaches, sweet corn and field corn;
3. in a tank mix with Supracide* on apples, pears, plums, prunes, peaches, and citrus (oranges, grapefruit, and lemons);

4. as a spreader or carrier for some synthetic organic insecticides.

**Note: Supracide is a RESTRICTED USE PESTICIDE.*

APPLICATIONS TO ALMONDS, APPLES, APRICOTS, CHERRIES, PEACHES, NECTARINES, PEARS, PLUMS AND PRUNES.

Completely cover all tree parts to achieve adequate control. Oil alone will control low to moderate infestations. Oil may be combined with other compatible insecticides for controlling higher scale infestations or to achieve better control of Peach Twig Borer. Caution is required when combining certain miticides or insecticides due to possible increased phytotoxicity when applied to foliage. Do not apply over certain fresh market fruits after the bloom starts to form as the oil spray will remove the waxy bloom. Consult the local pest management guidelines or Agricultural Extension Service for more details as to the rates and times of application for your specific location.

APPLICATIONS TO CITRUS

Oils applied after October may increase cold damage to trees. Oils applied in August and September may affect solid contents and retard coloring.

APPLICATIONS TO GRAPES

The oil application should be made before mites reach high populations. Vineyards should be vigorous and supplied with sufficient water prior to application. Do not allow excessive webbing or burning. No sensitivity to Sunspray treatments has been seen in the vineyards of cabarnet, merlot, chardonnay or ribier when used for insect control. Do not mix Sunspray with dicofol (Kelthane), Captan, or sulfur since all can cause phytotoxicity in some varieties. Use airblast sprayers to avoid plant injury and reduce effect on the bloom of table grapes.

USE PRECAUTIONS

Keep oil container tightly closed in storage to prevent entry of water. Store drum on its side. Roll drum before use. All horticultural oils interfere with or slow plant transpiration and respiration during the period of evaporation. Phytotoxicity may result if this product is sprayed on plants during periods of prolonged high temperature and high relative humidity. Do not spray to plants under stress (i.e. drought, disease). Do not spray immediately prior to, during or following unusually cold weather or freezing temperatures. The following list of pesticides represents some of the compounds that should not be used with Sunspray, however this list is not exhaustive: anilazine (Dyrene), captan (Captan), captofol (Difolatan), cyprex (Dodine), Chlorothalonil (Bravo), dimethoate (Cygon), dinocap (Karathene), dithianon (Delan), fentin hydroxide (Supertin), fentinacetate (Fentin), folpet (Folpet), methiocarb (Metmercapturon), oxythioquinox (Morestan), PMA (Agrosun), propargite (Omite), lime sulfur, wettable sulfur or any other product containing sulfur. For fungicides not included in this listing, consult the label of the specific fungicide formulation for compatibility information when used with oil. Consult your local extension agent for local recommendations relative to a specific fungicide/oil mix on a specific crop. Keep the spray equipment used for these products separate from the equipment used for Sunspray. Do not use with Sevin 50W formulation (carbaryl) on deciduous fruit trees.

CROPS	INSECT CONTROL AID	APPLICATION RATE			TIME OF APPLICATION (Stage of Development)	
		DILUTE SPRAY per 100 Gal. Water	CONCENTRATE Gallons Oil Per Acre	AERIAL* Gallons Oil Per Acre		
ALMONDS	Mite eggs European Red Mite Brown Mite	1.5-2.0	4-8	4-8	Dormant or delayed dormant.	
	Scales San Jose Scale	1.5-2.0	4-8	4-8	Dormant or delayed dormant.	
	Fruittree Leafroller eggs	1.5-2.0	4-8	4-8	Dormant or delayed dormant.	
	Peach Twig Borer	1.5-2.0	4-8	4-8	Dormant or delayed dormant. If applying oil alone for moderate to severe San Jose scale infestations use the dilute application only. Do not use oil on water-stressed trees.	
	Mites Scales	1.0	3-6	3-6	Summer (foliar or cover) or Post harvest. Application should not be made over oil sensitive varieties. Do not use oil on water-stressed trees.	
APPLES	Apple Red Bug	1.5-2.0	4-8	4-8	Dormant through Tightcluster.	
	Fruittree Leafroller (eggs)	1.5-2.0	4-8	4-8		
	European Red Mite (eggs)	1.5-2.0	4-8	4-8		
	Aphid Eggs	1.5-2.0	4-8	4-8		
	Scales San Jose Scale European Fruit Lecanium Scale Scurfy Scale Italian Pear Scale	1.5-2.0	4-8	4-8		
	Mites Scales	1.0	3-6	3-6		Summer (foliar or cover) or Post harvest.

* Aerial application should be used only as an emergency application when soil and terrain conditions do not permit regular ground application.

CROPS	INSECT CONTROL AID	APPLICATION RATE			TIME OF APPLICATION (Stage of Development)
		DILUTE SPRAY per 100 Gal. Water	CONCENTRATE Gallons Oil Per Acre	AERIAL* Gallons Oil Per Acre	
APRICOTS	Mite eggs European Red Mite Brown Mite	1.5-2.0	4-8	4-8	Dormant or delayed dormant.
	Aphid eggs	1.5-2.0	4-8	4-8	Dormant or delayed dormant.
	Scales European Fruit Lecanium Scale San Jose Scale	1.5-2.0	4-8	4-8	Dormant or delayed dormant.
	Fruittree Leafroller eggs	1.5-2.0	4-8	4-8	Dormant or delayed dormant.
	Peach Twig Borer	1.5-2.0	4-8	4-8	Dormant or delayed dormant. Do not use on water-stressed trees.
	Mites Scales	1.0	3-6	3-6	Summer (foliar or cover) or Post harvest. Application should not be made over oil sensitive varieties. Do not use oil on water-stressed trees.
	AVOCADOS Haas variety only	Mites Scales	1.0	7-18	7-18

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		DILUTE SPRAY per 100 Gal. Water	CONCENTRATE Gallons Oil Per Acre	AERIAL* Gallons Oil Per Acre	
CHERRIES (sweet & tart)	Mite Eggs	1.5-2.0	4-8	4-8	Dormant or delayed dormant.
	European Red Mite				
	Brown Mite				
	Aphid eggs	1.5-2.0	4-8	4-8	Dormant or delayed dormant.
	Fruitree Leafroller eggs	1.5-2.0	4-8	4-8	Dormant or delayed dormant.
	Scales	1.5-2.0	4-8	4-8	Dormant or delayed dormant.
	European Fruit Lecanium Scale				
	Black Scale				
	San Jose Scale				
	Cherry Leafhopper eggs	1.5-2.0	4-8	4-8	Dormant or delayed dormant.
Peach Twig Borer	1.5-2.0	4-8	4-8	Dormant or delayed dormant. Do not apply oil to water- or disease-stressed trees.	
	Mites Scales	1.0	3-6	3-6	Summer (foliar or cover) or Post harvest. Application should not be made over oil sensitive varieties. Do not apply oil to water- or disease-stressed trees.
CORN (Field & Sweet)	Ear worms Corn root worms	2.0	NR	NR	Spring-early
FIGS	Scales	1.5- 2.0	4-8	4-8	Dormant or delayed dormant.
	Mites Scales	1.5-2.0	NR	NR	Summer (foliar or cover)

* Aerial application should be used only as an emergency application when soil and terrain conditions do not permit regular ground application.

NR=not recommended

CROPS	INSECT CONTROL AID	APPLICATION RATE			TIME OF APPLICATION (Stage of Development)
		DILUTE SPRAY per 100 Gal. Water	CONCENTRATE Gallons Oil Per Acre	AERIAL* Gallons Oil Per Acre	
GRAPES	Mealybug	1.0-2.0	NR	NR	Dormant-A tank mix using an insecticide improves control.
	Mtes	2.0	NR	NR	Bud swell or shoot growth of 5-7 cm (2-3 inches) in Spring. Can also be used postharvest
KIWIFRUIT	Scales Leaf Rollers	1.0	NR	NR	Late Spring -summer. Do not apply during period of fruit sensitivity, @ 10 days after flowering to the third week of July. Do not apply at rates higher than indicated. Do not apply during weather conditions that allow for slow drying of the spray solution. Do not use spray additives.
OLIVES	Scales	1.5	NR	NR	Postbloom -Summer and Postharvest-Prebloom. Apply 400-1500 gal dilute spray per acre. Spray at night or early morning if temperatures are expected to exceed 90°F during the day. Do not apply oil to olives used for Spanish or green-ripe processing between Aug 20 and harvest due to fruit spotting.

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NR= not recommended

CROPS	INSECT CONTROL AID	APPLICATION RATE			TIME OF APPLICATION (Stage of Development)
		DILUTE SPRAY per 100 Gal. Water	CONCENTRATE Gallons Oil Per Acre	AERIAL* Gallons Oil Per Acre	
PEARS	Mite eggs European Red Mite Brown Mite Pear Leaf Blister Mite	1.5-2.0	4-6	4-6	Dormant or delayed dormant.
	Scales European Fruit Lecanium Scale San Jose Scale	1.5-2.0	4-6	4-6	Dormant.
	Mealybug (eggs & Crawlers)	1.5-2.0	4-6	4-6	SJS-Do not apply to heavy infestations. Dormant or delayed dormant.
	Fruitree Leafroller (eggs)	1.5-3.0	4-6	4-6	Dormant.
	Pear Psylla	1.5-2.0	4-6	4-6	Dormant - Make sure root zone is wet from rain or irrigation.
	Mites Two-spotted spider mite	1.0	3-6	3-6	Summer (foliar or cover) or Postharvest
	Brown Mite	1.0	3-6	3-6	
	Pear Rust Mite	1.0-2.0	3-6	3-6	
Pear Leaf Blister Mite	1.5-2.0	4-6	4-6		
	Pear Psylla	1.5-2.0	4-6	4-6	

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NR = Not Recommended.

CROPS	INSECT CONTROL AID	APPLICATION RATE			TIME OF APPLICATION (Stage of Development)
		DILUTE SPRAY per 100 Gal. Water	CONCENTRATE Gallons Oil Per Acre	AERIAL* Gallons Oil Per Acre	
PEACHES/ NECTARINES	Mite Eggs	1.0-1.5	3-8	3-8	Dormant.
	European Red Mite				
	Scales	1.0-2.0	3-8	3-8	Dormant.
	Cottony Peach Scale				
	San Jose Scale				
	Fruitree Leafroller (eggs)	1.0-1.5	3-8	3-8	Dormant.
	Peach Twig Borer	1.0-1.5	3-8	3-8	Dormant. Do not use on water-stressed trees.
	Mites	1.0	3-6	3-6	Summer (foliar or cover) or Postharvest.
	Scales				
PERSIMMONS	Book lice (psococids)	1.0	NR	NR	Summer (foliar or cover) into Fall. Do not exceed 5 applications in a growing season. Make successive applications at intervals of at least 2 weeks.
	Leafrollers				
	Scales				

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CROPS	INSECT CONTROL AID	APPLICATION RATE			TIME OF APPLICATION (Stage of Development)
		DILUTE SPRAY per 100 Gal. Water or as specified	CONCENTRATE Gallons Oil Per Acre	AERIAL* Gallons Oil Per Acre	
PLUMS & PRUNES	Mite eggs	1.5-2.0	4-6	4-6	Dormant or delayed dormant.
	European Red Mite Brown Mite				
	Scales	1.0-1.5	3-6	3-6	Dormant or delayed dormant.
	European Fruit Lecanium Scale San Jose Scale				
	Aphids eggs	1.0-1.5	3-6	3-6	Dormant or delayed dormant. Dormant or delayed dormant. Oil applications to kill overwintering eggs may cause some young shoot burn or dieback. Always apply oil to well watered trees. Do not use on Queen Ann variety of Plum.
	Peach Twig Borer	1.0-1.5	3-6	3-6	
	Mites Scales	1.0	3-6	3-6	Summer (foliar or cover) or Postharvest. Application should not be made over oil sensitive varieties.
SUGAR BEETS	Mites Leafminer	2 gal/acre	NR	NR	As Needed.
WALNUTS	Mites Scales	4 Gal (200-400 gal water/acre)	4	NR	Postbloom - Late Spring to mid Summer. Apply oil to walnuts only when soil moisture is adequate and trees have not been stressed (insect, disease damage, etc.) at anytime during the year. Do not apply oils during the dormant season.

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CROPS	INSECT CONTROL AID	APPLICATION RATE		COMMENTS
		DILUTE SPRAY Gals./100 Gals.	CONCENTRATE* Gal./Acre	
CITRUS**	Citrus Bud Mite Citrus Red Mite Citrus Rust Mite Scale Insects	0.5-1.5	3-30	Spray during Fall, early Winter & Spring months when red scale are more easily controlled and trees generally less reactive to oil. For all citrus oil sprays ensure adequate soil moisture: leaves should not wilt before noon.
	Spider Mites Whitely Loosens Sooty Mold	0.75	4-15	For low volume oil spray treatment during the Spring, application should be discontinued as soon as temperatures go above 90°F during the day or relative humidity is expected to go down to 20 percent or below. Oils should not be used in late fall if there is any danger of damage from cold. The addition of a tank-mix pesticide will improve performance against scales. Do not spray Naval orange orchards when oranges begin to reach maturity, generally from Dec until harvest due to possible water spot damage.

*Apply in sufficient water and manner to assure thorough distribution.

** Citrus: Do not exceed a maximum of 159 pounds of active ingredient (in a maximum volume 1500 gallons of spray mix per acre) when treating citrus in Florida and Texas (based on dilute spray, with 1.5 gallons of product mixed per 100 gallons of water). Do not exceed a maximum of 212 pounds of active ingredient (in a maximum volume of 2000 gallons of spray mix per acre) when treating citrus in California (based on dilute spray, with 1.5 gallons of product mixed per 100 gallons of water).



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