

## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

April 19, 2019

Ms. Sarah Kuetemeier, Agent Bonide Products, Inc. c/o Registrations by Design, Inc. P.O. Box 1019 Salem, VA 24153

Subject: Notification per PRN 98-10 – Expanding California Use Restrictions

Product Name: Bonide Horticultural and Dormant Spray Oil

EPA Registration Number: 4-80 Application Date: March 20, 2018

Decision Number: 550101

#### Dear Ms. Kuetemeier:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The label submitted with the application has been stamped "Notification" and will be placed in our records.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If you have any questions, you may contact please contact me at (703) 308-2972 or by email at walsh.michael@epa.gov.

Sincerely,

Michael Walsh, Product Manager 11 Invertebrate & Vertebrate Branch 2 Registration Division

Office of Pesticide Programs

## **VERSION A** (Commercial/Agricultural)



[FRONT PANEL]





#### NOTIFICATION

4-80

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

04/19/2019

## **BONIDE® HORTICULTURAL AND DORMANT SPRAY OIL**

[Additional Brand Names: All Seasons® Horticultural and Dormant Spray Oil Ready to Spray; Bonide All Seasons®<sup>1</sup> Horticultural & Dormant Spray Oil; Bonide All Seasons®<sup>1</sup> Commercial Horticultural & Dormant Spray Oil Concentrate; All Seasons® Commercial Horticultural & Dormant Spray Oil Concentrate]

## **Optional Marketing Statements:**

Kills insects by smothering.

For use on the types of fruit trees, shade trees, evergreens, ornamentals, and flowers that are listed on this label.

Use year-round<sup>1</sup>.

For use on Fruit Trees, Shade Trees, Roses, Ornamental Shrubs, and Vegetables as listed on this label. Dormant and Growing Season Insect Spray

CONTROLS Scale Insects, Mealybugs, Apple Aphids, European Red Spider Mites, Leafminers, Leaf rollers [redbanded, obliquebanded, fruittree], Light Brown Apple Moth, Powdery Mildew, Rust and other insects and diseases listed on this label. USE on pears, cherries, peaches, asparagus, corn, peppers, roses, and other crops as directed on this label.

Controls insects and diseases as listed on this label.

3-in-1 [product] provides protection against insects, mites & diseases listed on this label.

## **ACTIVE INGREDIENT:**

Mineral Oil* (CAS #8012-95-1)	98%
OTHER INGREDIENTS:	2%
TOTAL	
(Superior type U.R. Min 92%)	
*Contains petroleum distillates.	

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

See side/back/other panel(s) for additional precautionary statements and First Aid.

<sup>&</sup>lt;sup>1</sup>Do not apply when temperature is greater than 90°F or less than 40°F EPA Reg. No. 4-80

## [BACK/SIDE/OTHER PANEL(S)]

## PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco.

#### **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.

## STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

<u>Pesticide Storage:</u> Store unused product in original container only. Store in a cool, dry area out of the reach of children and animals.

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

[For containers </= 5 gallons]:

Container Disposal: Nonrefillable container. Do not reuse or refill this container. Triple rinse (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 ¼ 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. Then offer for recycling or reconditioning, or puncture and dispose of container in a sanitary landfill, or by other procedures approved by state and local authorities.

[For containers > 5 gallons]:

Container Disposal: Nonrefillable container. Do not reuse or refill this container. Triple rinse (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ½ 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. Then offer for recycling or reconditioning, or puncture and dispose of container in a sanitary landfill, or by other procedures approved by state and local authorities.

For information on pesticide products (including health concerns, medical emergencies, or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378.

SEE ATTACHED BOOKLET FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND COMPLETE DIRECTIONS FOR USE.

Bonide Products, Inc., 6301 Sutliff Road, Oriskany, NY 13424

[batch code inserted at production]

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EPA Reg. No. 4-80 3/20/2018 – Notification





# BONIDE® HORTICULTURAL AND DORMANT SPRAY OIL

[Additional Brand Names: All Seasons®<sup>1</sup> Horticultural and Dormant Spray Oil Ready to Spray; Bonide All Seasons®<sup>1</sup> Horticultural & Dormant Spray Oil; Bonide All Seasons®<sup>1</sup> Commercial Horticultural & Dormant Spray Oil Concentrate; All Seasons®<sup>1</sup> Commercial Horticultural & Dormant Spray Oil Concentrate]

## **Optional Marketing Statements:**

Kills insects by smothering.

For use on the types of fruit trees, shade trees, evergreens, ornamentals, and flowers that are listed on this label.

Use year-round<sup>1</sup>.

For use on Fruit Trees, Shade Trees, Roses, Ornamental Shrubs, and Vegetables as listed on this label. Dormant and Growing Season Insect Spray

CONTROLS Scale Insects, Mealybugs, Apple Aphids, European Red Spider Mites, Leafminers, Leaf rollers [redbanded, obliquebanded, fruittree], Light Brown Apple Moth, Powdery Mildew, Rust and other insects and diseases listed on this label. USE on pears, cherries, peaches, asparagus, corn, peppers, roses, and other crops as directed on this label.

Controls insects and diseases as listed on this label.

3-in-1 [product] provides protection against insects, mites & diseases listed on this label.

## **ACTIVE INGREDIENT:**

Mineral Oil* (CAS #8012-95-1)	98%
OTHER INGREDIENTS:	
TOTAL	
(Superior type U.R. Min 92%)	

<sup>\*</sup>Contains petroleum distillates.

# KEEP OUT OF REACH OF CHILDREN CAUTION

<sup>&</sup>lt;sup>1</sup>Do not apply when temperature is greater than 90°F or less than 40°F

## FIRST AID

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact the National Pesticide Information Center at 1-800-858-7378 for emergency medical treatment information.

## 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.

**Note to Physician:** This product contains petroleum distillates and may pose an aspiration pneumonia problem.

# PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco.

**PERSONAL PROTECTIVE EQUIPMENT (PPE):** Some materials that are chemical-resistant to this product are barrier laminate, nitrile rubber, neoprene rubber, or viton. If you want more options, follow the instructions for category E 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,
- chemical-resistant gloves.

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.

## **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.

### **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. Do not apply this product through any type of irrigation system (i.e., via chemigation).

## **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, decontaminating, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about person 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 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 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 green houses. Do not enter or allow others to enter until sprays have dried.

### SPRAY DRIFT MANAGEMENT

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, and relative humidity) and method of application (ground, aerial, or airblast) can influence pesticide drift. The applicator and grower must evaluate all factors and make appropriate adjustments when applying this product. The restrictions pertaining to wind speed, temperature inversions, and droplet size apply to all of the methods of application permitted for this product.

Wind Speed: Do not apply at wind speeds greater than 15 mph at the application site.

**Temperature Inversions:** 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 or stable atmospheric conditions.

**Droplet Size:** Apply as a medium or coarser spray (ASABE standard 572), and the minimum volume mean diameter (VMD) for spinning atomizer nozzles.

**Ground Spray Applications:** Apply using a nozzle height of no more than 4 feet above the ground or crop canopy.

**Airblast Applications:** Turn off outward pointing nozzles at row ends and when spraying outer row. To minimize spray loss over the top in citrus applications, spray must be directed into the canopy.

**Aerial Applications:** Do not release spray at a height greater than 10 feet above the ground, top of crop, or above the orchard canopy.

<u>Boom Length:</u> The boom length must not exceed 75% of the wingspan or 90% of the rotor blade's diameter.

<u>Swath Adjustment:</u> When applications are made 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 downwind edge of the treated field.

**NOTE:** DO NOT APPLY HORTICULTURAL SPRAY OIL WITH SULFUR SPRAYS OR WHERE SULFUR IS ON THE FOLIAGE. TO DO SO MAY CAUSE FOLIAGE INJURY, LEAF DROP. DO NOT APPLY HORTICULTURAL SPRAY OIL AT ABNORMAL TEMPERATURES (ABOVE 90°F) OR WHEN PLANTS ARE DRY (SUFFERING FOR WANT OF MOISTURE) AS IT MAY CAUSE LEAF DROP DUE TO "SHOCK."

HORTICULTURAL SPRAY OIL is a self-emulsifying spray oil, composed of paraffinic oil with emulsifier and spreader sticker, which envelop, wet and smother over wintering eggs of European red spider mites, Adelgids, scale insects, apple aphids, bud moth, leaf roller [redbanded, obliquebanded, fruittree], light brown apple moth, red bug, codling moth larvae, psylla (adults), blister mites, galls, whitefly larvae and mealybugs on fruit trees, shade trees, vegetables, ornamentals, shrubs and roses.

**HORTICULTURAL SPRAY OIL** may be used at the DORMANT STAGE (before buds show green tissue), GREEN TIP STAGE (when leaves of blossom buds are bursting and show about 1/8 to ½ inch of green color), DELAYED DORMANT STAGE (when the leaves of the blossom buds are out from ½ to ½ inch), and during the GROWING SEASON.

SHAKE WELL. Then add HORTICULTURAL SPRAY OIL to desired amount of water and mix thoroughly. Use a good pressure spray and apply enough liquid per tree to wet entire surface of branches, main limbs and trunk. Give special attention to underside of limbs. Make application when the temperature is above 40°F.

## FRUIT AND NUT CROPS

FRUIT AND NO	PESTS	TIMING & APPLICATION	RESTRICTIONS
CKOI		RATE	RESTRICTIONS
Acerola (Barbados Cherry)* Atemoya* Carambola (Star Fruit)* Rambutan*	Aphids, Mites, Beetle Larvae, Leafminers, Thrips, Leafhopper, Whitefly, Caterpillars, Alternaria Leafspot, Gummy Stem Blight, Powdery Mildew, Rust  Cucumber Mosaic Virus, Papaya Ringspot Virus, Pepper Mottle Virus, Potato Leafroll Virus, Potato Virus Y, Tobacco Etch	Use 0.75 – 1.5 gals. of oil per 100 gals. of water at 200-500 gals. of water per acre.  (Concentrate Spray: Use 3-6 gals. Of oil per acre in a minimum of 20 gals. of water per acre.)  Spray once or twice weekly depending on the rapid growth of the crop and/or vector pressure  Use 0.75 gal. of oil per 100 gals. of water at 200-500 gals. of water per acre.	*Asterisk denotes crop, pest not approved in California.
	Virus, Watermelon Mosaic Virus 2, Zucchini Yellow Mosaic Virus	(Concentrate Spray: Use 3-6 gals. of oil per adre in a minimum of 20 gals. of water per acre.)  Spray as needed.	
Almonds Apricots Cherries Nectarines Peaches Pistachio	Black Scale, European Fruit Lecanium Scale, Frosted Scale, Olive Scale, San Jose Scale, Brown Mite Eggs, European Red Mite Eggs, Aphid Eggs, Fruit Tree Leafroller* (Eggs), Overwintering Phytocoris* (only on pistachio), Overwintering Tent Caterpillars*	DORMANT AND DELAYED DORMANT: Use 1-3 gals. of oil per 100 gals. of water at 300 to 600 gals. per acre.  (Concentrate Spray: Use 6 to 8 gals. per acre in a minimum of 20 gals. of water per acre)  European Fruit Lecanium Scale and European Red Mite Eggs: Apply from Green Tip to Delayed Dormant.  San Jose Scale: Apply from Dormant, Green Tip to Delayed Dormant.  Re-spray as needed.  For use on pistachio, apply as a dormant treatment and/or trees may be sprayed after harvest.	*Asterisk denotes crop, pest not approved in California.
	Terrapin Scale	DELAYED DORMANT: Use 2-3 gals. of oil per 100 gals. of water at 300 to 600 gals. per acre.  (Concentrate Spray: Use 8 to 12 gals. per acre in a minimum of 20 gals. of water per acre)	
	Cottony Peach Scale	DORMANT: Use 2-3 gals. of oil per 100 gals. of water at 300 to 600 gals. per acre.	

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Powdery Mildew* (Cherries,	(Concentrate Spray: Use 8 to 12 gals. per acre in a minimum of 20 gals. of water per acre)  Cherries:	*Asterisk denotes
Nectarines and Peaches only)	Use 1-2 gals. of oil per 100 gals. of water at 300 to 600 gals. per acre.	crop, pest not approved in California.
	(Concentrate Spray: Use 6 to 8 gals. per acre in a minimum of 20 gals. of water per acre)	Camorina.
	Preharvest Use: Use up to pit hardening stage. Apply at 10-14 day intervals – shorten interval and/or use 2 gals. of oil per 100 gals. of water when disease conditions are severe. Trees may be sprayed after harvest to maintain control and reduce overwintering inoculum.	
	Nectarines/Peaches: Use 1-2 gals. of oil per 100 gals. of water at 300 to 600 gals. per acre.	
	(Concentrate Spray: Use 6 to 8 gals. per acre in a minimum of 20 gals. of water per acre)	
	Begin at 5% bloom and continue at 10-14 day intervals until terminal growth phase stops. Do not apply to oil sensitive varieties.	
Scales, Two-spotted Spider Mite, Pacific Mite, European Red Mite, Brown Mite	FOLIAR SPRAY: Use 0.5 – 1.5 gals. of oil per 100 gals. of water at 300 to 600 gals. per acre.	
	(Concentrate Spray: Do not use more than 4 gals. per acre in a minimum of 20 gals. of water per acre)	
	Spray as needed.	
White Peach Scale on Peaches: Only for use in Georgia, Florida, South Carolina, North Carolina, and Alabama	DORMANT: Use 1.5 - 2 gals. of oil per 100 gals. of water at 300 to 600 gals. per acre.	
	(Concentrate Spray: Use 6 to 8 gals. per acre in a minimum of 20 gals. of water per acre)	
	Apply before buds begin to swell in the spring. Make 2 applications	

	1		
		7-14 days apart, or according to	
		local Cooperative Extension	
		Service recommendations, during	
		the dormant period.	
Apples	European Fruit Lecanium Scale,	DORMANT OR DELAYED	
	Olive Scale, San Jose Scale,	DORMANT:	
	European Red Mite Eggs, Rust	Use 1-2 gals. of oil per 100 gals. of	
	Mite, Rosy Apple Aphid Eggs,	water at 100 to 800 gals. per acre.	
,	Apple Aphid Eggs		
	Codling Moth*	(Concentrate Spray: Use 3 to 8	Restriction: Use to
		gals. per acre in 20 to 100 gals. of	control first
		water per acre)	generation early
			instar stages only.
		Rust Mite: Apply 1.5 - 2 gals. of	
		oil per 100 gals. of water at 300 to	
		600 gals. per acre during the	*Asterisk denotes
		delayed dormant timing.	crop, pest not
			approved in
		(Concentrate Spray: Use 6 to 8	California.
		gals. per acre in 20 to 100 gals. of	
		water per acre)	
	Leafroller (red banded, oblique	GREEN TIP TO DELAYED	
	banded, fruit tree), Apple Red	DORMANT:	
	Bug, Scurfy Scale, European	Use 1-3 gals. of oil per 100 gals. of	
	Red Mite, Bud Moth, Light	water at 100 to 800 gals. per acre.	
	Brown Apple Moth, Red Bug		
		(Concentrate Spray: Use 3 to 12	
		gals. per acre in 20 to 100 gals. of	
		water per acre)	
		D	
	C I C1- E1 C1-	Re-spray as needed.	
	San Jose Scale, Forbes Scale	DORMANT, GREEN TIP TO DELAYED DORMANT:	
		Use 1-2 gals. of oil per 100 gals. of water at 100 to 800 gals. per acre.	
		water at 100 to 800 gais, per acre.	
		(Concentrate Spray: Use 3 to 8	
		gals. per acre in 20 to 100 gals. of	
		water per acre)	
		water per acrej	
		Spray as needed.	
	Powdery Mildew	Use 1-2 gals. of oil per 100 gals. of	
		water at 300 to 600 gals. per acre.	
		Said for acre.	
		(Concentrate Spray: Use 6 to 8	
		gals. per acre in 20 to 100 gals. of	
		water per acre)	
		,	
		Apply at tight cluster and continue	
		every 10-14 days through second	
		cover spray.	
		Use 2 gals. of oil per 100 gals. of	
		water and/or shorter spray interval	
		when disease conditions are	
		severe.	

	Scales, Mites including: Two- spotted Spider Mite, Pacific Red Mite, European Red Mite, Rust Mite, Leafhopper*, San Jose Scale, Rosy Apple Aphid*, Fruit Tree Leafroller*	FOLIAR SPRAY (Post Bloom): Use 1 quart – 1.5 gals. of oil per 100 gals. of water at 100 to 800 gals. per acre.  For rust mite, summer use, use 1 – 1.5 gals. of oil per 100 gals. of water at 300 to 600 gals. per acre.  Apply every 10-14 days depending on level of pest pressure. Trees may be sprayed after harvest to maintain control and reduce overwintering pressure. Do not apply oil to sensitive varieties.	*Asterisk denotes crop, pest not approved in California.
Avocados	Avocado Brown Mite, Thrips, Persea Mite	Use 0.5 - 1 gal. of oil per 100 gals. of water in 400 to 3000 gals. per acre.  (Concentrate Spray: Use 4 to 15 gals. per acre in 50 gals. of water per acre)  Apply through late fall.  Re-apply as needed.	California: Consult with your local University of California Cooperative Extension Service for proper timing and application parameters.
Bananas Plantains	Black Leaf Streak (Mycosphaerella fijiensis), Black Sigatoka (Mycosphaerella fijiensis var. difformis), Yellow Sigatoka (Mycosphaerella musicola)	Use 0.5 – 1.5 gals. of oil in 20 to 100 gals. of water per acre.  Begin application when disease first appears and continue every 10-15 days during rainy periods or as is needed.	Restriction: Do not apply when daytime temperatures exceed 80° F as injury may occur. Phytotoxicity may be affected by the quantity of oil used, vigor of trees and temperature at the time of application. Bag fruits, or use a directed spray on unbagged fruits. Bagged fruit improves crop safety whereas unbagged fruit may show phytotoxicity. This application is also effective in loosening Sooty Mold Fungus and in preventing its formulation by the control of Aphids, Mealybugs, Scales and Whitefly.

Blueberries Bushberries Caneberries Raspberries	Mites, Powdery Mildew, Rust, Sawfly (eggs)*, Scales*, Aphids, Mealybug  Fig Scale	Use 0.75 – 1.5 gals. of oil per 100 gals. of water at 100-250 gals. of water per acre.  Spray as needed.  DORMANT OR DELAYED DORMANT: Use 1-3 gals. of oil	Spray for optimum coverage of leaf surfaces.  *Asterisk denotes crop, pest not approved in California.
	Mites, Mealybug, Scale	per 100 gals. of water at 100-300 gals. of water per acre.  Spray as needed.  Use 1-2 gals. of oil per 100 gals. of water at 100-500 gals. of water per acre.	Apply as foliar spray.
Grapes	Mealybug, Mites, Leafhopper*, Whiteflies*, Powdery Mildew, Botrytis  Powdery Mildew  Botrytis Bunch Rot	Use 1 – 3 gals. of oil in 200 – 300 gals. of water per acre. Spray for optimum coverage of leaf surfaces.  Repeat sprays every 10-14 days.  Use 1 – 3 gals. of oil in 200 – 300 gals. of water per acre. Spray for optimum coverage of leaf surfaces.  Make first application pre-bloom and continue every ten days to three weeks depending on level of disease pressure. Use 3 gals. of oil in 200 gals. of water per acre and/or shorter spray interval when disease conditions are severe.  Use 1 – 3 gals. of oil in 200 – 300 gals. of water per acre. Spray for optimum coverage of leaf surfaces.  Initiate sprays at bloom and repeat prior to bunch closing and véraison. Final application at harvest if needed. Use 3 gals. of oil in 200 gals. of water per acre when disease conditions are severe.	Oil will remove the bloom on grapes.  Restriction: Table grapes must not be sprayed within 60 days of harvest.  Restriction: On grapes, do not mix oil and copper more than once/season.  Restriction: Do not use copper and oil together with fruit present.  *Asterisk denotes crop, pest not approved in California.
Kiwi	Latania Scale, Greedy Scale, Oleander Scale, San Jose Scale	Use 4-6 gals. of oil in a minimum of 100 gals. of water per acre. Use 6 gals. of oil in 100 gals. of water per acre when scale populations are high.  Spray as needed.  Do not apply after budbreak.	Restriction: Do not use on weak or stressed vines, or where soil moisture is inadequate.
Mango	Mites, Powdery Mildew	Use 1-1.5 gals. of oil in 100 gals. of water per acre. Apply every 2-3 weeks as necessary depending on	

		level of pest pressure.	
		For Powdery Mildew – Begin	
		application before bloom. Repeat	
		at bloom and every 2-3 weeks as	
011		necessary.	
Olives	Olive (Parlatoria) Scale,	POSTBLOOM THROUGH	
	Oleander Scale, Black Scale	AUGUST AND AFTER	
		HARVEST: Use 1-1.5 gals. of oil per 100 gals. of water at 400 to 600	
		gals. per acre.	
		gais, per acre.	
		Spray as needed.	
	Mites	PREBLOOM TO POSTBLOOM	
		BUCKSHOT: Use 1.5 gals. of oil	
		per 100 gals. of water at 400 to 600	
		gals. per acre.	
		Spray as needed.	
Papaya	Mites, Powdery Mildew, Papaya	Use 0.75 – 1.5 gals. of oil in a	
	Ringspot Virus	minimum of 100 gals. of water per	
		acre.	
		For Powdery Mildew and Mites:	
		Spray every 10-14 days depending	
		on the level of pest pressure.	
		For Virus, Sprov wooldy Initiate	
		For Virus: Spray weekly. Initiate spray when seeds are germinated.	
Pears	European Fruit Lecanium Scale,	DORMANT:	
1 cars	Olive Scale, San Jose Scale,	Use 1-2 gals. of oil per 100 gals. of	
	European Red Mite Eggs	water at 100 to 800 gals. per acre.	
	European Rea Wite Eggs	water at 100 to 000 gais, per acre.	
		(Concentrate Spray: Use 3 to 8	
		gals. per acre in 20 to 100 gals. of	
		water per acre)	
		Spray as needed.	
	Pear Psylla	Apply before eggs are laid in early	
		spring.	
	Codling Moth*	Use to control first generation	*Asterisk denotes
		early instar stages only.	crop, pest not
			approved in
	D : T 2 11 2 2 2	DODICANTE VI 12 1 2 "	California.
	Fruit Tree Leafroller, Pear Leaf	DORMANT: Use 1-3 gals. of oil	
	Blister Mite	per 100 gals. of water at 100 to 800	
		gals. per acre.	
		(Concentrate Spray, Use 2 to 12	
		(Concentrate Spray: Use 3 to 12 gals. per acre in 20 to 100 gals. of	
		water per acre)	
	Powdery Mildew	Use 1-2 gals. of oil per 100 gals. of	
	1 ovidery willidew	water at 300 to 600 gals. per acre.	
		gais, per acre.	
		(Concentrate Spray: Use 6 to 8	

	T	1 (	
		gals. of water per acre)	
		Apply at bud burst and continue every 10-14 days.	
		Use 2 gals. of oil per 100 gals. of water at 600 gals. per acre and/or 10-day spray interval when disease conditions are severe.	
	Scales, Two-spotted Spider Mite, Pacific Red Mite, European Red Mite, San Jose Scale and Italian Pear Scale (Summer forms), Leafhopper*, Pear Psylla	FOLIAR SPRAY (Post Bloom): Use 1 quart – 1.5 gals. of oil per 100 gals. of water at 100 to 800 gals. per acre. Trees may be sprayed after harvest to maintain control and reduce over-wintering inoculum. Do not apply oil to sensitive varieties.	*Asterisk denotes crop, pest not approved in California.
Pecans	Scales, Aphids (eggs), Mites (eggs)	Use 2-3 gals. of oil per 100 gals. of water in a minimum of 200 gals. of water per acre. Use 2 gals. of oil per 100 gals. of water when trees are in a weakened condition.  (Concentrate Spray: Use 6 to 8 gals. per acre in 20 to 125 gals. of water)	
		Apply from late February until buds first break. Re-spray as needed.	
Pineapple	Mealybugs, Bud Moth, Chinese Rose Beetle	Spray: Use 1-2 gals. of oil in 100 gals. of water per acre. Spray as needed.	Allow fruit to dry for 1 hour before being stored.
		Dip: Use 1-2 gals. of oil in 100 gals. of water. Dip for 30 seconds.	
Plums Prunes	Black Scale, European Fruit Lecanium Scale, Frosted Scale, Olive Scale, San Jose Scale, Brown Mite Eggs, European Red Mite Eggs, Aphids Eggs, Fruit Tree Leafroller Eggs, Tent	DORMANT AND DELAYED DORMANT: Use 1-3 gals. of oil per 100 gals. of water at 300 to 600 gals. per acre.  (Concentrate Spray: Use 6 to 8	*Asterisk denotes crop, pest not approved in California.
	Caterpillars*	gals. per acre in a minimum of 20 gals. of water per acre)	
		Preferred times of application for European Fruit Lecanium Scale and European Red Mite Eggs are Green Tip to Delayed Dormant and for San Jose Scale are Dormant, Green Tip to Delayed Dormant.	
	Terrapin Scale	Spray as needed.  DELAYED DORMANT: Use 2-3 gals. of oil per 100 gals. of water at	
		300 to 600 gals. per acre.	

		(Concentrate Spray: Use 8 to 12 gals. per acre in a minimum of 50 gals. of water per acre)  Spray as needed.	
	Cottony Peach Scale	DORMANT: Use 2-3 gals. per 100 gals. of water at 300 to 600 gals. per acre.	
		(Concentrate Spray: Use 8 to 12 gals. in a minimum of 50 gals. of water per acre)	
		Spray as needed.	
	Two-spotted Spider Mite, Pacific Mite, European Red Mite, Brown Mite	FOLIAR SPRAY: Use 0.5 – 1.5 gals. of oil per 100 gals. of water at 300 to 600 gals. per acre. Spray as needed.  (Concentrate Spray: Do not use more than 4 gals. per acre in a minimum of 20 gals. water per acre)  Trees may be sprayed after harvest to maintain control and reduce	Restriction: Certain varieties of plums and prunes may be injured by oil sprays; check for tolerance prior to treatment. Do not apply to trees lacking moisture.
		over-wintering pressure. Do not	
		apply oil to sensitive varieties.	
Strawberries	Aphids*, Botrytis, Leafminers*, Mites, Powdery Mildew, Sawfly, Scale, Whiteflies	0.75 gals. of oil per 100 gals. of water. Spray as needed.	*Asterisk denotes crop, pest not approved in California.
Walnuts	Black Scale, Calico Scale, European Fruit Lecanium Scale, Frosted Scale, Olive Scale, San Jose Scale, European Red Mite Eggs, Walnut Aphid Eggs Spider Mites, Soft Scales	DELAYED DORMANT: Use 4-6 gals. of oil in 200-500 gals. of water per acre.  Spray as needed.  SUMMER FOLIAR: Use 4-6 gals. of oil per 200-500 gals. of water	Restrictions: Do not apply after husk split. Do not spray oil on sensitive varieties.
		per acre. Spray as needed.	

CITRUS (California Only) Thorough coverage spray (TC): Applications achieving a uniform film wetting of all portions of the tree at 250 to 2000 gallons of spray solution per acre. The total volume needed is dependent on the size of the trees. 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 thorough coverage spray, with 1.5 gallons of product mixed per 100 gallons of water).

Low volume spray (LV): Applications with droplet depositions achieved on all interior and exterior parts of the tree using 10 to 100 gallons of spray solution per acre.

Consult with your local University of California Cooperative Extension Specialist for proper timing and spray program.

<u>Restriction:</u> Do not apply prior to or during a period of excessively high temperatures. Do not apply oil spray when trees show stress.

CROP	PESTS	APPLICATION RATE	TIMING
Grapefruit		Central California:	Central California:
Lemons	Mites: Citrus Bud,	Use $0.5 - 1.5$ gals. of oil per	Apply July through September.
Limes	Citrus Flat, Citrus	100 gals. of water as a	
Oranges (Navel &	Red, Citrus Rust	thorough coverage spray (TC).	Lemons and Limes: make
Valencia)		Alternately, use a low volume	applications in all months except
Tangelos		spray (LV) to apply 1 to 10	December through February.
Tangerines		gals. of oil per acre.	
			Grapefruit: make applications July
Other citrus		Apply up to 10 gals. of oil per	through October.
hybrids		acre on bearing trees up to 10	
		feet in height. Add 1 gal. of	Navel Oranges: make applications
		oil per acre for each foot of	July through September.
		tree height over 10 feet.	
		l	Valencia Oranges, Tangelos,
	Scales: Black, Brown	Apply as a low volume spray	Tangerines and other citrus hybrids:
	Soft, California Red,	(LV) 1 to 10 gals. of oil per	make applications July through
	Citricola, Purple,	acre.	October.
	Yellow, Red		
	Mites: Citrus Bud,	Southern California:	Southern California:
	Citrus Flat, Citrus	Use $0.5 - 1.5$ gals. of oil per	Lemons and Limes: make
	Red, Citrus Rust	100 gals. of water as a	applications in all months except
		thorough coverage spray (TC).	December through February.
		Alternately, use a low volume	
		spray (LV) to apply 1 to 10	Grapefruit: make applications July
		gals. of oil per acre.	through October.
		Apply up to 10 gals. of oil per	Navel Oranges: make applications
		acre on bearing trees up to 10	July through September.
		feet in height. Add 1 gal. of	sary anough september.
		oil per acre for each foot of	Valencia Oranges, Tangelos,
		tree height over 10 feet.	Tangerines and other citrus hybrids:
		dec height over 10 feet.	make applications July through
			October.
	Scales: Black, Brown	Apply as a low volume spray	
	Soft, California Red,	(LV) 1 to 10 gals. of oil per	Coastal Lemons and Limes: apply
	Citricola, Purple,	acre.	May and June and/or September
	Yellow, Red		through December.

		Interior Lemons and Limes: apply in April and May and/or September through November.
Mites: Citrus Bud, Citrus Flat, Citrus Red, Citrus Rust Scales: Black, Brown Soft, California Red, Citricola, Purple, Yellow, Red	Oxnard Plains Area: Use 0.5 – 1.5 gals. of oil per 100 gals. of water as a thorough coverage spray (TC). Alternately, use a low volume spray (LV) to apply 1 to 10 gals. of oil per acre. Apply up to 10 gals. of oil per acre on bearing trees up to 10 feet in height. Add 1 gal. of oil per acre for each foot of tree height over 10 feet.	Oxnard Plains Area: Make applications as needed throughout the year.

**CITRUS:** (Florida and Texas) Dilute Spray: Apply the spray oil application rate in up to 1500 gallons of water per acre, or 10 to 12 gallons per tree, to over 15 gallons per tree for large trees. Add the oil to a partially filled spray tank under proper agitation and spray to cover all foliage thoroughly.

CROP	PESTS	TIMING &	RESTRICTIONS
		APPLICATION RATE	
Citrons	Citrus Rust Mite, Spider Mites,	Use 5-10 gals. of oil per	Precautions in the use of oil
Grapefruits	Bud Mites, Flat Mites.	100 gals. of water per acre	include: Do not apply oil
Lemons	Scales: Black Soft, Brown Soft,	as a dilute spray.	spray when trees are wilting.
Limes	Chaff, Glover, Purple, Red,		Do not apply oil and sulfur
Mandarins	Yellow	For dilute spray using	within 3 weeks of each other.
Oranges		1500 gals. of water per	Sensitive foliage may be
Tangelos	Does not control Citrus Snow	acre, do not exceed 1.5	injured.
Tangerines	Scale.	gals. of oil per 100 gals.	In Florida, consult the Florida
	Whitefly, Blackfly	of water.	Citrus Spray and Dust
Other citrus	Greasy Spot (Grapefruit)	]	Schedule, or your
hybrids	Greasy Spot (all other varieties)	Summer spray only. Re-	Agricultural Experiment
		spray as needed.	Station or State Extension
DO NOT APPLY			Service Specialist for
TO NAVEL			complete details on the
ORANGES.			spraying program best suited
			to your locale. In Texas,
			consult with your
			Agricultural Experiment
			Station or State Extension
			Specialist for complete
			details on the spraying
			program suited to your locale.
	Loosening sooty mold		Use 10 gals. of oil in 100
			gals. of water per acre when
			disease pressure is heavy.

## VEGETABLE CROPS

CROP	PESTS	TIMING & APPLICATION RATE	RESTRICTIONS
Asparagus, Beans, Beets, Broccoli, Chinese Broccoli, Broccoli Raab, Brussels Sprouts, Cabbage, Cauliflower, Chinese Cabbage (Bok Choy and Mapa), Chinese Mustard Cabbage (Gai Choy), Cavalo Broccoli, Collards, Kale, Kohlrabi, Mizuna, Mustard Greens, Mustard Spinach, Rape Greens, Celery, Chayote, Chinese Waxgourd, Citron Melon, Cucumber, Gherkin, Hyotan, Cucuzza, Hechima, Chinese Okra, Balsam Apple, Balsam Pear, Bitter Melon, Chinese Cucumber, True Cantaloupe, Cantaloupe, Casaba, Crenshaw Melon, Golden Pershaw Melon, Honeydew Melon, Honey Galls, Mango Melon, Persian Melon, Pumpkin, Summer Squash, Winter Squash, Watermelon, Dasheen (Taro)*, Eggplant, Ginger*, Ginseng*, Herbs and Spices* (Curly Leaf Basil, Lemon Balm), Japanese Radish (Daikon)*, Lettuce, Okra*, Peppers, Potatoes, Radishes, Sweet Potatoes	Aphids, Mites, Beetle Larvae, Leafminers, Thrips, Leafhopper, Whitefly, Alternaria Leafspot, Gummy Stem Blight, Powdery Mildew, Rust  Cucumber Mosaic Virus, Papaya Ringspot Virus, Pepper Mottle Virus, Potato Leafroll Virus, Potato Virus Y, Tobacco Etch Virus, Watermelon Mosaic Virus 2, Zucchini Yellow Mosaic Virus.	Use 0.75 – 1.5 gals. of oil per acre in 50-100 gals. of water. Spray once or twice weekly depending on the rapid growth of the crop and/or vector pressure.  Use 0.75 gal. of oil per acre in 50-100 gals. of water.  Spray once or twice weekly depending on the rapid growth of the crop and/or vector pressure.	*Asterisk denotes crop, pest not approved in California.
Chinese Artichoke* (Japanese Artichoke), Cilantro*, Herbs and Spices* (Mexican Oregano, Mint)	Aphids, Mites, Beetle Larvae, Leafminers, Thrips, Leafhopper, Whitefly, Alternaria Leafspot, Gummy Stem Blight, Powdery Mildew, Rust, Pepper Psyllids, Cucumber Mosaic Virus 2, Papaya Ringspot Virus, Pepper Mottle Virus, Potato Leafroll Virus, Potato Virus Y, Tobacco Etch Virus, Watermelon Mosaic Virus 2, Zucchini Yellow Mosaic Virus	Use 1-2 gals. of oil per acre in a minimum of 50 gals. of water.  Spray once or twice weekly depending on the rapid growth of the crop and/or vector pressure.	*Asterisk denotes crop, pest not approved in California.
Corn (Sweet)	Aphids, Mites, Leafhopper*, Leafminers, Corn Earworm, Rootworm, Armyworm, Whitefly, Cercospora*	Use 1-2 gals. of oil per acre in a minimum of 10 gals. of water per acre.  Spray once or twice weekly depending on the rapid growth of the crop and/or vector pressure.	*Asterisk denotes crop, pest not approved in California.

Tomatoes	Aphids, Mites, Beetle Larvae, Leafminers, Thrips, Leafhopper, Whitefly, Alternaria Leafspot, Gummy Stem Blight, Powdery Mildew, Rust, Tomato Psyllid*, Tomato Pin Worm*, Fruit Worm*, Army Worm*, Horn Worm*, Lygus Bug*, Stink Bug*, Cucumber Mosaic Virus, Papaya Ringspot Virus, Pepper Mottle Virus, Potato Leafroll Virus, Potato Virus Y, Tobacco Etch Virus	Use 0.75 – 1.5 gals. of oil per 100 gals. of water at 25-150 gals of water per acre. Spray once or twice weekly depending on the rapid growth of the crop and/or vector pressure.	*Asterisk denotes crop, pest not approved in California.
	Mottle Virus, Potato Leafroll		
	Tobacco Etch Virus, Watermelon Mosaic Virus 2,		
	Zucchini Yellow Mosaic Virus		

## **COFFEE**

CROP	PESTS	TIMING & APPLICATION	RESTRICTIONS
	12212	RATE	1110110
Coffee	Green Scale	Use 3-6 gals. of oil in 100 gals. of	Treatments should end 30 days or more
		water per acre.	before crop picking as oil residues make
			picking difficult.
		Use only water as a diluent.	
			Restriction: Do not apply this product
		Apply when insects appear and	through any type of irrigation system.
		treat as necessary at 30-60 day	Phytotoxicity may be affected by the
		intervals. Do not exceed 18 gals.	quantity of oil used, vigor of trees and
		of oil per acre in a growing season.	temperature at the time of application.

## **ORNAMENTALS**

PLANT	PESTS	TIMING & DILUTION RATE	RESTRICTIONS
Flowering and Foliage	Aphids, Adelgids, Eriophyid	Winter Dormant Period:	
Plants including Roses	Mites, Gall Mites, Honey	Use $2 - 5.4$ fl. oz. of oil per 1	
and Other Flowering	1	1	
	Locust Plant Bug, Lace	gal. of water.	
Shrubs	Bug, Leaf Beetle Larvae,		
	Leafminer (non-larvae),	Summer (Foliar or Cover):	
	Leafrollers, Mealybugs,	Use $1 - 2.5$ fl. oz. of oil per 1	
	Psyllids (immature), Red	gal. of water. Do not spray	
	Mites, Sawfly (larvae),	plants during flowering period.	
	Scales (immature), Spider		
	Mites, Webworms,	For blackspot and powdery	
	Whiteflies, Blackspot,	mildew control during the	
	Powdery Mildew, Young	summer do not exceed 2 fl. oz.	
	Caterpillars	of oil per 1 gal. of water.	
Foliage Ornamentals	Aphids, Adelgids	Winter Dormant Period:	Application safety
& Bedding Plants		Use $1 - 2.5$ fl. oz. of oil per 1	during bloom period
		gal. of water.	must be determined for
			each individual species
		Summer (Foliar or Cover):	of plant to be treated
		Use $1 - 2.5$ fl. oz. of oil per 1	by conducting a small
		gal. of water. Do not spray	test.

Powdery Mildew   Plants during flowering period.	
gal. of water. Spray before	
disease first appears. Apply every 10-14 days.	
Shade Trees** Ornamental Trees** Shrubs (including Conifers, Deciduous and Broadleaf Evergreens & Woody Ornamentals)  Aphids, Adelgids, Eriophyid Mites, Gall Mites, Hemlock Wooly Adelgids, Honey Locust Plant Bug, Lace Bug, Leaf Beetle Larvae, Leafminer (non-larvae), Leafrollers, Mealybugs, Psyllids (immature), Red Mites, Sawfly (larvae), Scales (immature), Spider Mites, Webworms, Whiteflies, Blackspot, Powdery Mildew, Young Caterpillars  Aphids, Adelgids, Eriophyid Mites, Hemlock Wooly Adelgids, Honey Locust Plant Bug, Lace Bug, Leaf Beetle Larvae, Leafminer (non-larvae), Leafrollers, Mealybugs, Psyllids (immature), Red Mites, Sawfly (larvae), Scales (immature), Spider Mites, Webworms, Whiteflies, Blackspot, Powdery Mildew, Young Caterpillars  Do not spray more than 1 time per week.  Restriction Summer (Foliar or Cover): Use 1 – 2.5 fl. oz. of oil per 1 gal. of water.  For blackspot and powdery mildew control during the summer, do not exceed 2.5 fl. oz. of oil per 1 gal. of water.  Do not spray more than 1 time per week.  Restriction Summer (Foliar or Cover): Use 1 – 2.5 fl. oz. of oil per 1 gal. of water.  For blackspot and powdery mildew control during the summer, do not exceed 2.5 fl. oz. of oil per 1 gal. of water.  Do not spray more than 1 time per week.  Restriction obvious modelicit in plant is used to summer, do not exceed 2.5 fl. oz. of oil per 1 gal. of water.  Restriction obvious modelicit in plant is used to summer, do not exceed 2.5 fl. oz. of oil per 1 gal. of water.  Restriction obvious modelicit in plant is used to summer, do not exceed 2.5 fl. oz. of oil per 1 gal. of water.  Restriction obvious modelicit in plant is used to summer, do not exceed 2.5 fl. oz. of oil per 1 gal. of water.  Restriction obvious modelicit in plant is used to summer, do not exceed 2.5 fl. oz. of oil per 1 gal. of water.  Restriction obvious modelicit in plant is used to summer, do not exceed 2.5 fl. oz. of oil per 1 gal. of water.  Restriction obvious modelicit in plant is used to summer, do not exceed 2.5 fl. oz. of	leaves, or the nder stress. lormant ons, reduce tbsp. of oil per water and only to: n Red Oak, Black Pine, d, Weeping Cornelian Crabapple, Maple, Purple on: This may cause tion of Blue Do not use on or ferns not o oil sprays erta Dwarf Use enough ution to lly penetrate anopy and th top and f all the d stems until without

Use the lowest concentration indicated in the above table if sensitive plants are to be treated.

Tendency toward sensitivity: Red Cedar and Douglas Fir.

<sup>\*\*</sup>This product removes the glaucous (blue) bloom from such evergreens as Colorado Blue Spruce and Koster Spruce.

Always use lower dosage or test spray oil sensitive plants such as Cryptomeria, Smoke Tree, Chamaecypris, Juniper, Japanese Holly and Spruce.

#### GREENHOUSE AND CONTAINER

Frequency of Application: For the greenhouse pests listed, use once a week initially, then as the pest is controlled, decrease the frequency to every 2-3 weeks, if needed. Application safety during bloom period must be determined for each individual species of plant to be treated by conducting a small test.

PLANT	PESTS	DILUTION RATE	RESTRICTIONS
Ageratum, Crown of Thorns,	Aphids, Fungus	Summer (Foliar or Cover):	Due to varietal differences
Dieffenbachia, Dogwood*,	Gnats, Leafminers,	Use 0.5 - 1 gal. of oil per	in response to a treatment
Dracaena*, Ferns, Ficus,	Mealybugs, Scales	100 gals. of water.	of this product at the
Holly*, Lisianthus, Magnolia*,	(soft & hard), Spider		labeled rate, conduct a
Orchid, Palms, Petunia,	Mites, Thrips,		small test on 1 or 2 plants
Poinsettia, Schefflera,	Whitefly, Powdery		of the specific variety to
Sunflower	Mildew*		be treated.
Aglaonema, Aster, Azaleas,	Aphids, Fungus	Summer (Foliar or Cover):	
Begonias, Browallia, Camellias,	Gnats, Leafminers,	Use 1 – 2 gals. of oil per	Some plants are more
Carnation, Celosia,	Mealybugs, Scales	100 gals. of water.	sensitive to oil treatments
Chrysanthemum, Coleus,	(soft & hard), Spider		if any of the following
Cosmos, Crepe Myrtle*, Dusty	Mites, Thrips,		conditions are present
Miller, Easter Lilies, Fuchsia*,	Whitefly, Powdery		when application is made:
Gardenias, Gerbera,	Mildew*		high humidity (74%), an
Hellichrysum, Hibiscus Foliage,			overcast or cloudy day,
Hydrangea, Impatiens*, Jade			inadequate air flow, a
Plant, Marigold, New Guinea			small greenhouse where
Impatiens, Nicotonia,			the sunlight is magnified
Philodendron, Portulaca, Reiger			causing a fast build-up of
Begonias, Snapdragon, Zinnias			temperature and light
Leaf Polish for Hardy Plants		Use 1 oz. of oil per 1 gal.	intensity.
		of water.	
			*Asterisk denotes crop,
			pest not approved in
			California.

### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

**<u>Pesticide Storage:</u>** Store unused product in original container only. Store in a cool, dry area out of the reach of children and animals.

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

[For containers </= 5 gallons]:

Container Disposal: Nonrefillable container. Do not reuse or refill this container. Triple rinse (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 ½ 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. Then offer for recycling or reconditioning, or puncture and dispose of container in a sanitary landfill, or by other procedures approved by state and local authorities. [For containers > 5 gallons]:

Container Disposal: Nonrefillable container. Do not reuse or refill this container. Triple rinse (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ½ 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. Then offer for

recycling or reconditioning, or puncture and dispose of container in a sanitary landfill, or by other procedures approved by state and local authorities.

For information on pesticide products (including health concerns, medical emergencies, or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378.

#### **WARRANTY**

Seller warrants that this product complies with the specifications expressed in this label. To the extent consistent with applicable law, Seller makes no other warranties, and disclaims all other warranties, express or implied, including but not limited to warranties of merchantability and fitness for the intended purpose. To the extent consistent with applicable law, Seller's liability or default, breach or failure under this label shall be limited to the amount of the purchase price. To the extent consistent with applicable law, Seller shall have no liability for consequential damages.

Bonide Products, Inc. 6301 Sutliff Road Oriskany, NY 13424

VERSION B (Residential)



[FRONT PANEL]



# BONIDE® HORTICULTURAL AND DORMANT SPRAY OIL

[Additional Brand Names: All Seasons®<sup>1</sup> Horticultural and Dormant Spray Oil Ready to Spray; Bonide All Seasons®<sup>1</sup> Horticultural & Dormant Spray Oil]

## **Optional Marketing Statements:**

Kills insects by smothering.

For use on the types of fruit trees, shade trees, evergreens, ornamentals, and flowers that are listed on this label.

Use year-round<sup>1</sup>.

For use on Fruit Trees, Shade Trees, Roses, Ornamental Shrubs, and Vegetables as listed on this label. Dormant and Growing Season Insect Spray

CONTROLS Scale Insects, Mealybugs, Apple Aphids, European Red Spider Mites, Leafminers, Leaf rollers [redbanded, obliquebanded, fruittree], Light Brown Apple Moth, Powdery Mildew, Rust and other insects and diseases listed on this label. USE on pears, cherries, peaches, asparagus, corn, peppers, roses, and other crops as directed on this label.

Controls insects and diseases as listed on this label.

3-in-1 [product] provides protection against insects, mites & diseases listed on this label.

## **ACTIVE INGREDIENT:**

Mineral Oil* (CAS #8012-95-1)	98%
OTHER INGREDIENTS:	
TOTAL	
(Superior type U.R. Min 92%)	
*Contains petroleum distillates	

#### KEEP OUT OF REACH OF CHILDREN

## **CAUTION**

See side/back/other panel(s) for additional precautionary statements and First Aid.

<b>NET CONTENTS:</b>	
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<sup>&</sup>lt;sup>1</sup>Do not apply when temperature is greater than 90°F or less than 40°F

# PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Wear long-sleeved shirt, long pants, shoes, socks and waterproof gloves when using or handling this product.

#### **ENVIRONMENTAL HAZARDS**

This product is toxic to fish. To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run off to water bodies or drainage systems. Apply this product only as specified on the label.

#### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

<u>Pesticide Storage:</u> Store and transport in an upright position. Keep container tightly closed to prevent evaporation. Do not use, pour, spill or store near heat or open flame. Store in a cool dry area inaccessible to children or pets.

<u>Pesticide Disposal:</u> If partly filled – Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

<u>Container Disposal:</u> *If empty* – Nonrefillable container. Do not reuse or refill this container. Place in trash or offer for recycling if available.

SEE ATTACHED BOOKLET FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND COMPLETE DIRECTIONS FOR USE.

For information on pesticide products (including health concerns, medical emergencies, or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378.

Bonide Products, Inc. 6301 Sutliff Road Oriskany, NY 13424

[batch code inserted at production]

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[ATTACHED BOOKLET – VERSION B -RESIDENTIAL]





# BONIDE® HORTICULTURAL AND DORMANT SPRAY OIL

[Additional Brand Names: All Seasons®<sup>1</sup> Horticultural and Dormant Spray Oil Ready to Spray; Bonide All Seasons®<sup>1</sup> Horticultural & Dormant Spray Oil]

## **Optional Marketing Statements:**

Kills insects by smothering.

For use on the types of fruit trees, shade trees, evergreens, ornamentals, and flowers that are listed on this label.

Use year-round<sup>1</sup>.

For use on Fruit Trees, Shade Trees, Roses, Ornamental Shrubs, and Vegetables as listed on this label. Dormant and Growing Season Insect Spray

CONTROLS Scale Insects, Mealybugs, Apple Aphids, European Red Spider Mites, Leafminers, Leaf rollers [redbanded, obliquebanded, fruittree], Light Brown Apple Moth, Powdery Mildew, Rust and other insects and diseases listed on this label. USE on pears, cherries, peaches, asparagus, corn, peppers, roses, and other crops as directed on this label.

Controls insects and diseases as listed on this label.

3-in-1 [product] provides protection against insects, mites & diseases listed on this label.

## **ACTIVE INGREDIENT:**

Mineral Oil* (CAS #8012-95-1)	98%
OTHER INGREDIENTS:	
TOTAL	
(Superior type U.R. Min 92%)	
*Contains petroleum distillates	

## KEEP OUT OF REACH OF CHILDREN

## **CAUTION**

NET	CONTENTS:
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<sup>&</sup>lt;sup>1</sup>Do not apply when temperature is greater than 90°F or less than 40°F

## FIRST AID

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact the National Pesticide Information Center at 1-800-858-7378 for emergency medical treatment information.

## 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.

**Note to Physician:** This product contains petroleum distillates and may pose an aspiration pneumonia problem.

## PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Wear long-sleeved shirt, long pants, shoes, socks and waterproof gloves when using or handling this product.

## **ENVIRONMENTAL HAZARDS**

This product is toxic to fish. To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run off to water bodies or drainage systems. Apply this product only as specified on the label.

## **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 any way that it will contact other persons or pets, either directly or through drift. Keep other persons out of the treated area during application. Do not allow persons or pets to enter the treated area until sprays have dried.

**NOTE:** DO NOT APPLY HORTICULTURAL SPRAY OIL WITH SULFUR SPRAYS OR WHERE SULFUR IS ON THE FOLIAGE. TO DO SO MAY CAUSE FOLIAGE INJURY, LEAF DROP. DO NOT APPLY HORTICULTURAL SPRAY OIL AT ABNORMAL TEMPERATURES (ABOVE 90°F) OR WHEN PLANTS ARE DRY (SUFFERING FOR WANT OF MOISTURE) AS IT MAY CAUSE LEAF DROP DUE TO "SHOCK."

Mixture ratios vary. Read and use according to application directions. Apply using a good pressure spray hose-end or watering can.

**HORTICULTURAL SPRAY OIL** is a self-emulsifying spray oil, composed of paraffinic oil with emulsifier and spreader sticker, which envelop, wet and smother over wintering eggs of European red spider mites, Adelgids, scale insects, apple aphids, bud moth, leaf roller [redbanded, obliquebanded, fruittree], light brown apple moth, red bug, codling moth larvae,

psylla (adults), blister mites, galls, whitefly larvae and mealybugs on fruit trees, shade trees, vegetables, ornamentals, shrubs and roses.

HORTICULTURAL SPRAY OIL may be used at the DORMANT STAGE (before buds show green tissue), GREEN TIP STAGE (when leaves of blossom buds are bursting and show about 1/8 to ½ inch of green color), DELAYED DORMANT STAGE (when the leaves of the blossom buds are out from ½ to ½ inch), and during the GROWING SEASON.

## (WHEN PACKAGED IN MIX & APPLY CONTAINER)

SHAKE WELL. Then add HORTICULTURAL SPRAY OIL to desired amount of water and mix thoroughly. Use a good pressure spray and apply enough liquid per tree to wet entire surface of branches, main limbs and trunk. Give special attention to underside of limbs. Make application when the temperature is above 40°F.

## 2 Tablespoons = 1 fluid ounce

## FRUIT, NUTS & BERRIES

CROP	PESTS	TIMING & DILUTION RATE	RESTRICTIONS
Acerola (Barbados	Aphids, Mites, Beetle Larvae,	Use 2 – 4 tbsp. of oil per 1 gal. of	*Asterisk denotes
Cherry)*	Leafminers, Thrips, Leafhopper,	water.	crop, pest not
Atemoya*	Whitefly, Caterpillars, Alternaria		approved in
Carambola (Star	Leafspot, Gummy Stem Blight,	Spray once or twice weekly	California.
Fruit)*	Powdery Mildew, Rust	depending on the rapid growth of	
Rambutan*		the crop and/or vector pressure	
	Cucumber Mosaic Virus, Papaya	Use 2 tbsp. of oil per 1 gal. of	
	Ringspot Virus, Pepper Mottle	water.	
	Virus, Potato Leafroll Virus,		
	Potato Virus Y, Tobacco Etch	Spray as needed.	
	Virus, Watermelon Mosaic		
	Virus 2, Zucchini Yellow		
	Mosaic Virus		
Almonds	Black Scale, European Fruit	DORMANT AND DELAYED	*Asterisk denotes
Apricots	Lecanium Scale, Frosted Scale,	DORMANT:	crop, pest not
Cherries	Olive Scale, San Jose Scale,	Use $2.5 - 7.5$ tbsp. of oil per 1 gal.	approved in
Nectarines	Brown Mite Eggs, European Red	of water.	California.
Peaches	Mite Eggs, Aphid Eggs, Fruit		
Pistachio	Tree Leafroller* (Eggs),	European Fruit Lecanium Scale	
	Wintering Phytocoris* (only on	and European Red Mite Eggs:	
	pistachio), Tent Caterpillars <mark>*</mark>	Apply from Green Tip to Delayed	
		Dormant.	
		San Jose Scale: Apply from	
		Dormant, Green Tip to Delayed	
		Dormant.	
		Re-spray as needed.	
		re-spray as needed.	
		For use on pistachio, apply as a	
		dormant treatment and/or trees	
		may be sprayed after harvest.	
	Terrapin Scale	DELAYED DORMANT:	
		Use $5 - 7.5$ tbsp. of oil per 1 gal. of	

		water.	
	Cottony Peach Scale	DORMANT:	
	Cottony reach Scale	Use $5 - 7.5$ tbsp. of oil per 1 gal. of	
		1	
	D 1 M'11 * (C1 '	water.	* 4 4 1 1 4
	Powdery Mildew* (Cherries,	Cherries:	*Asterisk denotes
	Nectarines and Peaches only)	Use $2.5 - 5$ tbsp. of oil per 1 gal. of	crop, pest not
		water.	approved in
			California.
		Preharvest Use: Use up to pit	
		hardening stage. Apply at 10-14	
		day intervals – shorten interval	
		and/or use 5 tbsp. of oil per gal. of	
		water when disease conditions are	
		severe. Trees may be sprayed after	
		harvest to maintain control and	
		reduce overwintering inoculum.	
		Nectarines/Peaches:	
		Use $2.5 - 5$ tbsp. of oil per 1 gal. of	
		water.	
		D : 450/11 1 1 1	
		Begin at 5% bloom and continue at	
		10-14 day intervals until terminal	
		growth phase stops. Do not apply	
		to oil sensitive varieties.	
	Scales, Two-spotted Spider	FOLIAR SPRAY:	
	Mite, Pacific Mite, European	Use $1.5 - 4$ tbsp. of oil per 1 gal. of	
	Red Mite, Brown Mite	water.	
		Spray as needed.	
	White Peach Scale on Peaches:	DORMANT:	
	Only for use in Georgia, Florida,	Use 4 – 5 tbsp. of oil per 1 gal. of	
	South Carolina, North Carolina,	water. Apply before buds begin to	
	and Alabama	swell in the spring.	
		Make 2 applications 7-14 days	
		apart, or according to local	
		Cooperative Extension Service	
		recommendations, during the	
	D 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	dormant period.	
Apples	European Fruit Lecanium Scale,	DORMANT OR DELAYED	
	Olive Scale, San Jose Scale,	DORMANT:	
	European Red Mite Eggs, Rust	Use $2.5 - 5$ tbsp. of oil per 1 gal. of	
	Mite, Rosy Apple Aphid Eggs,	water.	
	Apple Aphid Eggs		<u> </u>
	Codling Moth*	Rust Mite: Apply 4 – 5 tbsp. of oil	Restriction: Use to
		per 1 gal. of water during the	control first
		delayed dormant timing.	generation early
			instar stages only.
			*Asterisk denotes
			crop, pest not
			approved in
			California.
			California.

	Leafroller (red banded, oblique	GREEN TIP TO DELAYED	
	banded, fruit tree), Apple Red	DORMANT:	
	Bug, Scurfy Scale, European	Use 2.5 – 7.5 tbsp. of oil per 1 gal.	
	Red Mite, Bud Moth, Light	of water.	
	Brown Apple Moth, Red Bug		
		Re-spray as needed.	
	San Jose Scale, Forbes Scale	DORMANT, GREEN TIP TO	
	2007 0 000 2 0002, 1 010 00 2 0002	DELAYED DORMANT:	
		Use 2.5 – 5 tbsp. of oil per 1 gal. of	
		water.	
		water.	
		Spray as needed.	
,	Powdery Mildew	Use 2.5 – 5 tbsp. of oil per 1 gal. of	
	Fowdery Wildew	water.	
		Apply at tight cluster and continue	
		every 10-14 days through second	
		cover spray.	
		Use 5 tbsp./gal. and/or shorter	
		spray interval when disease	
		conditions are severe.	
	Scales, Mites including: Two-	FOLIAR SPRAY (Post Bloom):	*Asterisk denotes
	spotted Spider Mite, Pacific Red	Use 1 – 4 tbsp. of oil per 1 gal. of	crop, pest not
	Mite, European Red Mite, Rust	water.	approved in
	Mite, Leafhopper*, San Jose		California.
	Scale, Rosy Apple Aphid*, Fruit	For rust mite, summer use, use 2.5	
	Tree Leafroller*	- 4 tbsp. of oil per 1 gal. of water.	
		Apply every 10-14 days depending	
		on level of pest pressure. Trees	
		may be sprayed after harvest to	
		maintain control and reduce over-	
		wintering pressure. Do not apply	
		oil to sensitive varieties.	
Avocados	Avocado Brown Mite, Thrips,	Use 1.5 – 2.5 tbsp. of oil per 1 gal.	California: Consult
Avocados	Persea Mite	of water. Apply through late fall.	with your local
			University of
		Re-apply as needed.	California
			Cooperative
			Extension Service
			for proper timing
			and application
			parameters.
Bananas	Black Leaf Streak	Use 1.5 – 4 tbsp. of oil per 1 gal. of	Restriction: Do not
Plantains	(Mycosphaerella fijiensis), Black	water.	apply when daytime
1 10111011110	Sigatoka ( <i>Mycosphaerella</i>		temperatures exceed
	fijiensis var. difformis), Yellow	Begin application when disease	80° F as injury may
	Sigatoka ( <i>Mycosphaerella</i>	first appears and continue every	occur. Phytotoxicity
	musicola)	10-15 days during rainy periods or	may be affected by
		as is needed.	the quantity of oil
			used, vigor of trees
			and temperature at
			the time of
			application. Bag
			fruits, or use a

			directed spray on unbagged fruits. Bagged fruit improves crop safety whereas unbagged fruit may show phytotoxicity. This application is also effective in loosening Sooty Mold Fungus and in preventing its formulation by the control of Aphids, Mealybugs, Scales and Whitefly.
Blueberries	Mites, Powdery Mildew, Rust,	Use 2 – 4 tbsp. of oil per 1 gal. of	Spray for optimum
Bushberries	Sawfly (eggs)*, Scales*, Aphids,	water.	coverage of leaf
Caneberries	Mealybug		surfaces.
Raspberries		Spray as needed.	
			*Asterisk denotes
			crop, pest not approved in
			California.
Figs	Fig Scale	DORMANT OR DELAYED	Cumomu
		DORMANT: Use $2.5 - 7.5$ tbsp. of	
		oil per 1 gal. of water.	
	Mites, Mealybug, Scale	Spray as needed. Use 2. 5 – 5 tbsp. of oil per 1 gal.	Apply as foliar
	Writes, Wearyoug, Scale	of water.	spray.
Grapes	Mealybug, Mites, Leafhopper*,	Use 2.5 – 7.5 tbsp. of oil per 1 gal.	Oil will remove the
	Whiteflies*, Powdery Mildew,	of water. Spray for optimum	bloom on grapes.
	Botrytis	coverage of leaf surfaces.	
		D 10.14.1	Restriction: Table
		Repeat sprays every 10-14 days.  For Powdery Mildew – Use 2.5 –	grapes must not be sprayed within 60
		7.5 tbsp. of oil per 1 gal. of water.	days of harvest.
		7.5 tosp. of on per 1 gai. of water.	
		Make first application pre-bloom	Restriction: On
		and continue every ten days to	grapes, do not mix
		three weeks depending on level of	oil and copper more than once/season.
		disease pressure. Use 7.5 tbsp./gal. and/or shorter spray interval when	man once/season.
		disease conditions are severe.	Restriction: Do not
		For Botrytis Bunch Rot – Use 2.5	use copper and oil
		- 5 tbsp. of oil per 1 gal. of water.	together with fruit
		Initiate sprays at bloom and repeat	present.
		prior to bunch closing and	*Asterisk denotes
		véraison. Final application at harvest if needed. Use 5 tbsp./gal.	crop, pest not
		when disease conditions are	approved in
		severe.	California.
Kiwi	Latania Scale, Greedy Scale,	Use $10 - 15$ tbsp. of oil per 1 gal.	Restriction: Do not
	Oleander Scale, San Jose Scale	of water. Use 15 tbsp./gal. when	use on weak or
	-	scale populations are high.	stressed vines, or

			where soil moisture
		Spray as needed.	is inadequate.
		Do not apply after budbreak.	
Mango	Mites, Powdery Mildew	Use 2.5 – 4 tbsp. of oil per 1 gal. of water. Apply every 2-3 weeks as necessary depending on level of pest pressure.	
		For Powdery Mildew – Begin application before bloom. Repeat at bloom and every 2-3 weeks as necessary.	
Olives	Olive (Parlatoria) Scale, Oleander Scale, Black Scale	POSTBLOOM THROUGH AUGUST AND AFTER HARVEST: Use 2.5 – 4 tbsp. of oil per 1 gal. of water.	
		Spray as needed.	
	Mites	PREBLOOM TO POSTBLOOM BUCKSHOT: Use 4 tbsp. of oil per 1 gal. of water.	
Domorro	Mitas Davidami Mildavi Danavia	Spray as needed.	
Papaya	Mites, Powdery Mildew, Papaya Ringspot Virus	Use 2 – 4 tbsp. of oil per 1 gal. of water.	
		For Powdery Mildew and Mites: Spray every 10-14 days depending on the level of pest pressure.	
		For Virus: Spray weekly. Initiate spray when seeds are germinated.	
Pears	European Fruit Lecanium Scale,	DORMANT:	
	Olive Scale, San Jose Scale, European Red Mite Eggs	Use 2.5 – 5 tbsp. per 1 gal. of water.	
		Spray as needed.	
	Pear Psylla	Apply before eggs are laid in early spring.	
	Codling Moth*	Use to control first generation early instar stages only.	*Asterisk denotes crop, pest not approved in California.
	Fruit Tree Leafroller, Pear Leaf	DORMANT: Use 2.5 – 7.5 tbsp. of	
	Blister Mite Powdery Mildew	oil per 1 gal. of water. Use 2.5 – 5 tbsp. of oil per 1 gal. of	
	1 owdery windew	water. Apply at bud burst and continue every 10-14 days.	
		Use 5 tbsp./gal. and/or 10-day spray interval when disease conditions are severe.	
	Scales, Two-spotted Spider Mite, Pacific Red Mite, European Red Mite, San Jose	FOLIAR SPRAY (Post Bloom): Use 1 – 4 tbsp. of oil per 1 gal. of water. Trees may be sprayed after	*Asterisk denotes crop, pest not approved in

	Scale and Italian Pear Scale (Summer forms), Leafhopper*, Pear Psylla	harvest to maintain control and reduce over-wintering inoculum.  Do not apply oil to sensitive varietes.	California.
Pecans	Scales, Aphids (eggs), Mites (eggs)	Use 5 – 7.5 tbsp. of oil per 1 gal. of water. Use 5 tbsp. of oil in 1 gal. of water when trees are in a weakened condition.	
		Apply from late February until buds first break. Re-spray as needed.	
Pineapple	Mealybugs, Bud Moth, Chinese Rose Beetle	Spray: Use 2.5 – 5 tbsp. of oil per 1 gal. of water. Spray as needed.	Allow fruit to dry for 1 hour before being stored.
		Dip: Use 2.5 – 5 tbsp. of oil per 1	
Plums	Black Scale, European Fruit	gal. of water. Dip for 30 seconds.  DORMANT AND DELAYED	*Asterisk denotes
Prunes	Lecanium Scale, Frosted Scale, Olive Scale, San Jose Scale, Brown Mite Eggs, European Red	DORMANT: Use 2.5 – 7.5 tbsp. of oil per 1 gal. of water.	crop, pest not approved in California.
	Mite Eggs, Aphids Eggs, Fruit Tree Leafroller Eggs, Tent Caterpillars*	Preferred times of application for European Fruit Lecanium Scale and European Red Mite Eggs are Green Tip to Delayed Dormant and for San Jose Scale are Dormant, Green Tip to Delayed Dormant.	
		Spray as needed.	
	Terrapin Scale	DELAYED DORMANT: Use 5 –	
		7.5 tbsp. per 1 gal. of water. Spray as needed.	
	Cottony Peach Scale	DORMANT: Use 5 – 7.5 tbsp. per 1 gal. of water. Spray as needed.	
	Two-spotted Spider Mite, Pacific Mite, European Red Mite, Brown Mite	FOLIAR SPRAY: Use 1.5 – 4 tbsp. of oil per 1 gal. of water. Spray as needed.	Restriction: Certain varieties of plums and prunes may be injured by oil
		Trees may be sprayed after harvest to maintain control and reduce over-wintering pressure. Do not apply oil to sensitive varieties.	sprays; check for tolerance prior to treatment. Do not apply to trees lacking moisture.
Strawberries	Aphids*, Botrytis, Leafminers*, Mites, Powdery Mildew, Sawfly, Scale, Whiteflies	2 tbsp. of oil per 1 gal. of water. Spray as needed.	*Asterisk denotes crop, pest not approved in California.
Walnuts	Black Scale, Calico Scale, European Fruit Lecanium Scale, Frosted Scale, Olive Scale, San	DELAYED DORMANT: Use 10 - 15 tbsp. of oil per 1 gal. of water.	Restrictions: Do not apply after husk split. Do not spray
	Jose Scale, European Red Mite	Spray as needed.	oil on sensitive
	Eggs, Walnut Aphid Eggs Spider Mites, Soft Scales	SUMMER FOLIAR: Use 10 – 15 tbsp. of oil per 1 gal. of water. Spray as needed.	varieties.

**CITRUS (California Only)** Do not exceed a maximum of 4.8 pounds active ingredient per 1,000 square feet in California.

CROP	PESTS	TIMING & DILUTION RATE	RESTRICTIONS
		Central California: Use 1.5 – 4 tbsp. of oil per 1 gal. of water.  Lemons and Limes: make applications in all months except December through February.  Grapefruit: make applications July through October.  Navel Oranges: make applications July through September.	RESTRICTIONS  Restriction: Do not apply prior to or during a period of excessively high temperatures. Do not apply oil spray when trees show stress.  Consult with your local University of California Cooperative Extension Specialist
	Mites: Citrus Bud, Citrus Flat, Citrus Red, Citrus Rust Scales: Black, Brown Soft,	Valencia Oranges, Tangelos, Tangerines and other citrus hybrids: make applications July through October.  Spray as needed.  Southern California: Use 1.5 – 4 tbsp. of oil per 1 gal. of water.	for proper timing and spray program.
	California Red, Citricola, Purple, Yellow, Red	Coastal Lemons and Limes: apply May and June and/or September through December.  Interior Lemons and Limes: apply in April and May and/or September through November.  Grapefruit: make applications July through October.	
		Navel Oranges: make applications July through September.  Valencia Oranges, Tangelos, Tangerines and other citrus hybrids: make applications July through October.  Spray as needed.	
	Mites: Citrus Bud, Citrus Flat, Citrus Red, Citrus Rust Scales: Black, Brown Soft, California Red, Citricola, Purple, Yellow, Red	Oxnard Plains Area: Use 1.5 – 4 tbsp. of oil per 1 gal. of water.  Make applications as needed throughout the year.	

**CITRUS:** (Florida and Texas) Do not exceed a maximum of 3.6 pounds active ingredient per 1,000 square feet in Texas and Florida.

CROP	PESTS	TIMING & DILUTION RATE	RESTRICTIONS
Citrons	Citrus Rust Mite, Spider Mites,	Use 1.5 – 4 tbsp. of oil	Precautions in the use of oil
Grapefruits	Bud Mites, Flat Mites.	per 1 gal. of water.	include: Do not apply oil
Lemons	Scales: Black Soft, Brown Soft,	]	spray when trees are wilting.
Limes	Chaff, Glover, Purple, Red,	Summer spray only. Re-	Do not apply oil and sulfur
Mandarins	Yellow	spray as needed.	within 3 weeks of each other.
Oranges			Sensitive foliage may be
Tangelos	<b>Does not control Citrus Snow</b>		injured.
Tangerines	Scale.		In Florida, consult the Florida
	Whitefly, Blackfly		Citrus Spray and Dust
Other citrus	Greasy Spot (Grapefruit)	]	Schedule, or your
hybrids	Greasy Spot (all other varieties)	]	Agricultural Experiment
			Station or State Extension
DO NOT APPLY			Service Specialist for
TO NAVEL			complete details on the
ORANGES.			spraying program best suited
			to your locale. In Texas,
			consult with your
			Agricultural Experiment
			Station or State Extension
			Specialist for complete
			details on the spraying
in			program suited to your locale.
	Loosening sooty mold		Use 4 tbsp./gal. when disease
			pressure is heavy.

## **VEGETABLE GARDENS**

CROP	PESTS	TIMING & DILUTION	RESTRICTIONS
		RATE	
Asparagus, Beans, Beets,	Aphids, Mites, Beetle Larvae,	Use $2 - 4$ tbsp. of oil per	*Asterisk denotes
Broccoli, Chinese Broccoli,	Leafminers, Thrips,	1 gal. of water. Spray	crop, pest not
Broccoli Raab, Brussels Sprouts,	Leafhopper, Whitefly,	once or twice weekly	approved in
Cabbage, Cauliflower, Chinese	Alternaria Leafspot, Gummy	depending on the rapid	California.
Cabbage (Bok Choy and Mapa),	Stem Blight, Powdery	growth of the crop and/or	
Chinese Mustard Cabbage (Gai	Mildew, Rust	vector pressure.	
Choy), Cavalo Broccoli,	Cucumber Mosaic Virus,	Use 2 tbsp. of oil per 1	
Collards, Kale, Kohlrabi,	Papaya Ringspot Virus,	gal. of water.	
Mizuna, Mustard Greens,	Pepper Mottle Virus, Potato		
Mustard Spinach, Rape Greens,	Leafroll Virus, Potato Virus	Spray as needed.	
Celery, Chayote, Chinese	Y, Tobacco Etch Virus,		
Waxgourd, Citron Melon,	Watermelon Mosaic Virus 2,		
Cucumber, Gherkin, Hyotan,	Zucchini Yellow Mosaic		
Cucuzza, Hechima, Chinese	Virus.		
Okra, Balsam Apple, Balsam			
Pear, Bitter Melon, Chinese			
Cucumber, True Cantaloupe,			
Cantaloupe, Casaba, Crenshaw			
Melon, Golden Pershaw Melon,			
Honeydew Melon, Honey Galls,			
Mango Melon, Persian Melon,			
Pumpkin, Summer Squash,			
Winter Squash, Watermelon,			

Dasheen (Taro)*, Eggplant, Ginger*, Ginseng*, Herbs and Spices* (Curly Leaf Basil, Lemon Balm), Japanese Radish (Daikon)*, Lettuce, Okra*, Peppers, Potatoes, Radishes, Sweet Potatoes			
Chinese Artichoke* (Japanese Artichoke), Cilantro*, Herbs and Spices* (Mexican Oregano, Mint)	Aphids, Mites, Beetle Larvae, Leafminers, Thrips, Leafhopper, Whitefly, Alternaria Leafspot, Gummy Stem Blight, Powdery Mildew, Rust, Pepper Psyllids, Cucumber Mosaic Virus 2, Papaya Ringspot Virus, Pepper Mottle Virus, Potato Leafroll Virus, Potato Virus Y, Tobacco Etch Virus, Watermelon Mosaic Virus 2, Zucchini Yellow Mosaic Virus	Use 2.5 – 5 tbsp. of oil per 1 gal. of water.  Spray once or twice weekly depending on the rapid growth of the crop and/or vector pressure.	*Asterisk denotes crop, pest not approved in California.
Corn (Sweet)	Aphids, Mites, Leafhopper*, Leafminers, Corn Earworm, Rootworm, Armyworm, Whitefly, Cercospora*	Use 2.5 – 5 tbsp. per 1 gal. of water.  Spray as needed.	*Asterisk denotes crop, pest not approved in California.
Tomatoes	Aphids, Mites, Beetle Larvae, Leafminers, Thrips, Leafhopper, Whitefly, Alternaria Leafspot, Gummy Stem Blight, Powdery Mildew, Rust, Tomato Psyllid*, Tomato Pin Worm*, Fruit Worm*, Army Worm*, Horn Worm*, Lygus Bug*, Stink Bug*, Cucumber Mosaic Virus, Papaya Ringspot Virus, Pepper Mottle Virus, Potato Leafroll Virus, Potato Virus Y, Tobacco Etch Virus, Watermelon Mosaic Virus 2, Zucchini Yellow Mosaic Virus	Use 2 – 4 tbsp. of oil per 1 gal. of water. Spray once or twice weekly depending on the rapid growth of the crop and/or vector pressure.	*Asterisk denotes crop, pest not approved in California.

## ROSES, FLOWERING SHRUBS & ORNAMENTALS

PLANT	PESTS	TIMING & DILUTION RATE	RESTRICTIONS
Flowering and Foliage	Aphids, Adelgids, Eriophyid	Winter Dormant Period:	
Plants including Roses	Mites, Gall Mites, Honey	Use $5 - 7.5$ tbsp. of oil per 1 gal.	
and Other Flowering	Locust Plant Bug, Lace	of water.	
Shrubs	Bug, Leaf Beetle Larvae,		
	Leafminer (non-larvae),	Summer (Foliar or Cover):	
	Leafrollers, Mealybugs,	Use $2-5$ tbsp. of oil per 1 gal.	
	Psyllids (immature), Red	of water.	
	Mites, Sawfly (larvae),		
	Scales (immature), Spider	For blackspot and powdery	
	Mites, Webworms,	mildew control during the	

	Whiteflies D11	grammon do 1 4 .1 C	
	Whiteflies, Blackspot,	summer do not exceed 4 tbsp. of	
	Powdery Mildew, Young Caterpillars	oil per 1 gal. of water.	
		Spray as needed.	
Foliage Ornamentals & Bedding Plants	Aphids, Adelgids	Winter Dormant Period: Use 5 – 7.5 tbsp. of oil per 1 gal. of water.  Summer (Foliar or Cover): Use 2 – 5 tbsp. of oil per 1 gal. of water.	Application safety during bloom period must be determined for each individual species of plant to be treated by conducting a small test.
N. E. C. D	3.6	Spray as needed.	
Non-Fruit-Bearing Trees: Apple, Cherry, Peach, Pear	Mites	Use 2.5 – 5 tbsp. of oil per 1 gal. of water. Apply every 10-14 days.	
	Powdery Mildew	Use 2.5 – 5 tbsp. of oil per 1 gal. of water. Spray before disease first appears. Apply every 10-14 days.	
Shade Trees** Ornamental Trees** Shrubs (including Conifers, Deciduous and Broadleaf Evergreens & Woody Ornamentals)	Aphids, Adelgids, Eriophyid Mites, Gall Mites, Hemlock Wooly Adelgids, Honey Locust Plant Bug, Lace Bug, Leaf Beetle Larvae, Leafminer (non-larvae), Leafrollers, Mealybugs, Psyllids (immature), Red Mites, Sawfly (larvae), Scales (immature), Spider Mites, Webworms, Whiteflies, Blackspot, Powdery Mildew, Young Caterpillars	Winter Dormant Period: Use 5 – 7.5 tbsp. of oil per 1 gal. of water.  Summer (Foliar or Cover): Use 2 – 5 tbsp. of oil per 1 gal. of water.  For blackspot and powdery mildew control during the summer, do not exceed 5 tbsp. of oil per 1 gal. of water.  Spray as needed.	Restriction: Do not spray when there is obvious moisture deficit in leaves, or the plant is under stress. For fall dormant applications, reduce rate to 5 tbsp. of oil per 1 gal. of water and limit use only to: American Red Oak, Japanese Black Pine, Dogwood, Weeping Cherry, Cornelian Cherry, Crabapple, Norway Maple, Purple Plum.  Restriction: This product may cause discoloration of Blue Spruce. Do not use on conifers or ferns not tolerant to oil sprays (e.g. Alberta Dwarf Spruce). Use enough spray solution to completely penetrate the leaf canopy and cover both top and bottom of all the leaves and stems until wet but without significant runoff.

Use the lowest concentration indicated in the above table if sensitive plants are to be treated.

\*\*This product removes the glaucous (blue) bloom from such evergreens as Colorado Blue Spruce and Koster Spruce.

Always use most dilute concentration indicated in the preceding table for the type of plant to be treated or test spray oil sensitive plants such as Cryptomeria, Smoke Tree, Chamaecypris, Juniper, Japanese Holly and Spruce. Tendency toward sensitivity: Red Cedar and Douglas Fir.

## **HOBBY GREENHOUSES**

Frequency of Application: Use once a week initially, then as the pest is controlled, decrease the frequency to every 2-3 weeks as needed. Application safety during bloom period must be determined for each individual species of

plant to be treated by conducting a small test.

PLANT	PESTS	TIMING & DILUTION RATE	RESTRICTIONS
Ageratum, Crown of Thorns, Dieffenbachia, Dogwood*, Dracaena*, Ferns, Ficus, Holly*, Lisianthus, Magnolia*, Orchid, Palms, Petunia, Poinsettia, Schefflera, Sunflower  Aglaonema, Aster, Azaleas, Begonias, Browallia, Camellias, Carnation, Celosia, Chrysanthemum, Coleus, Cosmos, Crepe Myrtle*, Dusty Miller, Easter Lilies, Fuchsia*, Gardenias, Gerbera, Hellichrysum, Hibiscus Foliage, Hydrangea, Impatiens*, Jade	Aphids, Fungus Gnats, Leafminers, Mealybugs, Scales (soft & hard), Spider Mites, Thrips, Whitefly, Powdery Mildew*  Aphids, Fungus Gnats, Leafminers, Mealybugs, Scales (soft & hard), Spider Mites, Thrips, Whitefly, Powdery Mildew*	RATE  Summer (Foliar or Cover): Use 1.5 – 2.5 tbsp. of oil per 1 gal. of water.  Spray as needed.  Summer (Foliar or Cover): Use 2.5 – 5 tbsp. of oil per 1 gal. of water.  Spray as needed.	Due to varietal differences in response to a treatment of this product at the labeled rate, conduct a small test on 1 or 2 plants of the specific variety to be treated.  Some plants are more sensitive to oil treatments if any of the following conditions are present when application is made: high humidity (74%), an overcast or cloudy day, inadequate air flow, a
Plant, Marigold, New Guinea Impatiens, Nicotonia, Philodendron, Portulaca, Reiger Begonias, Snapdragon, Zinnias			small greenhouse where the sunlight is magnified causing a fast build-up of temperature and light
Leaf Polish for Hardy Plants		Use 2.5 tbsp. of oil per 1 gal. of water.	*Asterisk denotes crop, pest not approved in California.

## **HOUSEPLANTS**

Plant	Pest	Dilution Rate	Restrictions
		per 1 Gallon Water	
Chrysanthemum, Dieffenbachia, Dracaena, Ferns, Gardenias, Jade Plant, Palms, Philodendron, Schefflera	Aphids, Leafminers, Mealybugs, Scales, Spider Mites, Whitefly*	2.5 – 5.0 Tbs. (1 <sup>1</sup> / <sub>4</sub> -2 <sup>1</sup> / <sub>2</sub> fl. oz.)	Protect floor, floor coverings and furnishings from overspray.  Do not exceed 3 consecutive applications without allowing a
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		two week application interval. Do not apply to plants in direct sunlight behind glass. Do not use on Coconut Palms or Maidenhair Ferns. Chrysanthemum blooms have shown phytotoxic symptoms at 5.0 Tbs. per gallon of water.

	*Horticultural and Dormant Spray Oil is most effective on Whitefly during immature stages.
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#### FOR HOUSEPLANTS AND HOBBY GREENHOUSES

- Do not exceed the maximum rates or apply more often than indicated on this label.
- Certain plant species may be sensitive to oil. A small number of plants should be test sprayed prior to general spraying.
- Use caution on open blooms bleaching and spotting have been observed on the open bloom of certain plants.

## (WHEN PACKAGED IN READY-TO-SPRAY CONTAINER)

Do not use hose-end sprayer application in home greenhouses or on houseplants. Hose-end sprayer applications may be made only when specified application rates are between  $2\frac{1}{2}$  and 5 tablespoons oil/1 gallon of water.

SHAKE WELL. Spray until plant is thoroughly saturated and spray solution runs off plant. For trees, wet entire surface of branches, main limbs and trunk. Give special attention to underside of limbs. Make application when the temperature is above 40°F.

#### HOW TO USE READY-TO-SPRAY CONTAINER

Make sure water control knob on hose sprayer is in the "OFF" position. Hold by handle and shake vigorously, turning bottle as you shake. Attach hose to spray nozzle. Bend safety tab back and break off. Turn control to "WATER" position. Slowly turn on water supply to moderate rate of flow. Point nozzle toward spray area, turn control knob to "ON." Product will automatically mix with the water. Slowly sweep the area to be treated. To stop spraying, turn control valve to the "OFF" position. Turn off water at faucet. To relieve pressure, turn control valve to the "WATER" position pointing sprayer away from self. Remove hose-end sprayer from hose.

[Optional Ready-To-Spray directions

## HOW TO USE READY-TO-SPRAY CONAINER

- 1. Shake container thoroughly, then attach to garden hose.
- 2. Turn on water supply at the source. Water pressure will build in hose since the sprayer is already in the "OFF" position.
- 3. To apply product, bend safety tab and turn the control valve clockwise to the "ON" position.
- 4. When spraying is complete, turn the control valve back (counterclockwise). Turn the water off. Disconnect hose from applicator and store product in original container.]

## FRUIT, NUTS & BERRIES

FRUIT, NUTS	X DEKKIES	
CROP	PESTS	TIMING/
*Asterisk denotes	*Asterisk denotes pest not	RESTRICTIONS
crop not approved	approved in California.	
in California.		
Acerola (Barbados	Aphids, Mites, Beetle Larvae,	Spray once or twice weekly depending on the rapid growth
Cherry)*	Leafminers, Thrips, Leafhopper,	of the crop and/or vector pressure
Atemoya*	Whitefly, Caterpillars, Alternaria	
Carambola (Star	Leafspot, Gummy Stem Blight,	
Fruit)*	Powdery Mildew, Rust	
Rambutan*		
	Cucumber Mosaic Virus, Papaya	Spray as needed.
	Ringspot Virus, Pepper Mottle	
	Virus, Potato Leafroll Virus,	
	Potato Virus Y, Tobacco Etch	
	Virus, Watermelon Mosaic	
	Virus 2, Zucchini Yellow	
	Mosaic Virus	
Almonds	Black Scale, European Fruit	DORMANT AND DELAYED DORMANT:
Apricots	Lecanium Scale, Frosted Scale,	Re-spray as needed.
Cherries	Olive Scale, San Jose Scale,	
Nectarines	Brown Mite Eggs, European Red	European Fruit Lecanium Scale and European Red Mite
Peaches	Mite Eggs, Aphid Eggs, Fruit	Eggs: Apply from Green Tip to Delayed Dormant.
Pistachio	Tree Leafroller* (Eggs),	
	Wintering Phytocoris* (only on	San Jose Scale: Apply from Dormant, Green Tip to
	pistachio), Tent Caterpillars*	Delayed Dormant.
	F	,
		For use on pistachio, apply as a dormant treatment and/or
		trees may be sprayed after harvest.
		1 1
	Powdery Mildew* (Cherries,	Cherries:
	Nectarines and Peaches only)	Preharvest Use: Use up to pit hardening stage. Apply at
		10-14 day intervals – shorten interval when disease
		conditions are severe. Trees may be sprayed after harvest
		to maintain control and reduce overwintering inoculum.
		Nectarines/Peaches:
		Begin at 5% bloom and continue at 10-14 day intervals
		until terminal growth phase stops. Do not apply to oil
		sensitive varieties.
	Scales, Two-spotted Spider	FOLIAR SPRAY:
	Mite, Pacific Mite, European	Spray as needed.
	Red Mite, Brown Mite	
	White Peach Scale on Peaches:	DORMANT:
	Only for use in Georgia, Florida,	Apply before buds begin to swell in the spring.
	South Carolina, North Carolina,	
	and Alabama	Make 2 applications 7-14 days apart, or according to local
		Cooperative Extension Service recommendations, during
		the dormant period.
Apples	European Fruit Lecanium Scale	DORMANT OR DELAYED DORMANT:
	Olive Scale, San Jose Scale,	Spray as needed.
	European Red Mite Eggs, Rust	
	Mite, Rosy Apple Aphid Eggs,	Rust Mite: Apply during the delayed dormant timing.
	Apple Aphid Eggs	

	Codling Moth*	Restriction: Use to control first generation early instar
		stages only.
	Leafroller (red banded, oblique	GREEN TIP TO DELAYED DORMANT:
	banded, fruit tree), Apple Red	Spray as needed.
	Bug, Scurfy Scale, European	
	Red Mite, Bud Moth, Light	
	Brown Apple Moth, Red Bug	
	San Jose Scale, Forbes Scale	DORMANT, GREEN TIP TO DELAYED DORMANT: Spray as needed.
	Powdery Mildew	Apply at tight cluster and continue every 10-14 days through second cover spray.
		Use the 10-day spray interval when disease conditions are severe.
	Scales, Mites including: Two-	FOLIAR SPRAY (Post Bloom):
	spotted Spider Mite, Pacific Red	Apply every 10-14 days depending on level of pest
	Mite, European Red Mite, Rust	pressure. Trees may be sprayed after harvest to maintain
	Mite, Leafhopper*, San Jose	control and reduce over-wintering pressure. Do not apply
	Scale, Rosy Apple Aphid*, Fruit Tree Leafroller*	oil to sensitive varieties.
Avocados	Avocado Brown Mite, Thrips, Persea Mite	Apply through late fall.
		Re-apply as needed.
		California: Consult with your local University of California Cooperative Extension Service for proper timing and application parameters.
Bananas	Black Leaf Streak	Begin application when disease first appears and continue
Plantains	(Mycosphaerella fijiensis), Black Sigatoka (Mycosphaerella	every 10-15 days during rainy periods.
	fijiensis var. difformis), Yellow	Restriction: Do not apply when daytime temperatures
	Sigatoka (Mycosphaerella	exceed 80° F as injury may occur. Phytotoxicity may be
	musicola)	affected by the quantity of oil used, vigor of trees and
	,	temperature at the time of application. Bag fruits, or use a
		directed spray on unbagged fruits. Bagged fruit improves
		crop safety whereas unbagged fruit may show
		phytotoxicity. This application is also effective in
		loosening Sooty Mold Fungus and in preventing its
		formulation by the control of Aphids, Mealybugs, Scales
		and Whitefly.
Blueberries	Mites, Powdery Mildew, Rust,	Spray for optimum coverage of leaf surfaces.
Bushberries	Sawfly (eggs)*, Scales*, Aphids,	
Caneberries	Mealybug	Spray as needed.
Raspberries	T: 0 1	DODALANTE OD DEL AVED DODALANTE G
Figs	Fig Scale	DORMANT OR DELAYED DORMANT: Spray as
	NC M 11 C 1	needed.
	Mites, Mealybug, Scale	Apply as foliar spray.

Grapes	Mealybug, Mites, Leafhopper*, Whiteflies*, Powdery Mildew, Botrytis	Spray for optimum coverage of leaf surfaces. Repeat sprays every 10-14 days.
		For Powdery Mildew – Make first application pre-bloom and continue every ten days to three weeks depending on level of disease pressure. Use 10-day spray interval when disease conditions are severe.
		For Botrytis Bunch Rot –Initiate sprays at bloom and repeat prior to bunch closing and véraison. Make a final application at harvest if needed.
		Oil will remove the bloom on grapes.
		Restriction: Table grapes must not be sprayed within 60 days of harvest.
		Restriction: On grapes, do not mix oil and copper more than once/season.
		Restriction: Do not use copper and oil together with fruit present.
Mango	Mites, Powdery Mildew	Apply every 2-3 weeks as necessary depending on level of pest pressure.
		For Powdery Mildew – Begin application before bloom. Repeat at bloom and every 2-3 weeks as necessary.
Olives	Olive (Parlatoria) Scale, Oleander Scale, Black Scale	POSTBLOOM THROUGH AUGUST AND AFTER HARVEST: Spray as needed.
	Mites	PREBLOOM TO POSTBLOOM BUCKSHOT: Spray as needed.
Papaya	Mites, Powdery Mildew, Papaya Ringspot Virus	For Powdery Mildew and Mites: Spray every 10-14 days depending on the level of pest pressure.
		For Virus: Spray weekly. Initiate spray when seeds are germinated.
Pears	European Fruit Lecanium Scale, Olive Scale, San Jose Scale, European Red Mite Eggs	DORMANT: Spray as needed.
	Pear Psylla	Apply before eggs are laid in early spring.
	Codling Moth*	Use to control first generation early instar stages only.
	Fruit Tree Leafroller, Pear Leaf Blister Mite	DORMANT: Spray as needed.
	Powdery Mildew	Apply at bud burst and continue every 10-14 days.
		Use the 10-day spray interval when disease conditions are severe.
	Scales, Two-spotted Spider Mite, Pacific Red Mite, European Red Mite, San Jose Scale and Italian Pear Scale (Summer forms), Leafhopper*, Pear Psylla	FOLIAR SPRAY (Post Bloom): Trees may be sprayed after harvest to maintain control and reduce over-wintering inoculum. Do not apply oil to sensitive varieties.

Pineapple	Mealybugs, Bud Moth, Chinese Rose Beetle	Spray as needed.
Plums Prunes	Black Scale, European Fruit Lecanium Scale, Frosted Scale, Olive Scale, San Jose Scale, Brown Mite Eggs, European Red Mite Eggs, Aphids Eggs, Fruit Tree Leafroller Eggs, Tent Caterpillars*	DORMANT AND DELAYED DORMANT: Spray as needed.  Preferred times of application for European Fruit Lecanium Scale and European Red Mite Eggs are Green Tip to Delayed Dormant and for San Jose Scale are Dormant, Green Tip to Delayed Dormant.
	Two-spotted Spider Mite, Pacific Mite, European Red Mite, Brown Mite	FOLIAR SPRAY: Spray as needed.  Trees may be sprayed after harvest to maintain control and reduce over-wintering pressure. Do not apply oil to sensitive varieties.  Restriction: Certain varieties of plums and prunes may be injured by oil sprays; check for tolerance prior to treatment. Do not apply to trees lacking moisture.
Strawberries	Aphids*, Botrytis, Leafminers*, Mites, Powdery Mildew, Sawfly, Scale, Whiteflies	Spray as needed.

**CITRUS (California Only)** Do not exceed a maximum of 4.8 pounds active ingredient per 1,000 square feet in California.

CROP	PESTS	TIMING	RESTRICTIONS
Grapefruit	Mites: Citrus Bud, Citrus Flat,	Central California:	Restriction: Do not
Lemons	Citrus Red, Citrus Rust	Lemons and Limes: make	apply prior to or
Limes	Citrus Rea, Citrus Rust	applications in all months except	during a period of
Oranges (Navel &	Scales: Black, Brown Soft,	December through February.	excessively high
Valencia)	California Red, Citricola, Purple,	December unough reordary.	temperatures. Do
Tangelos	Yellow, Red	Grapefruit: make applications July	not apply oil spray
Tangerines	Tellow, Red	through October.	when trees show
Tangernies		unough October.	
Other citrus		Navel Oranges: make applications	stress.
			Companit with warm
hybrids		July through September.	Consult with your
		Valencia Orangas, Tancalas	local University of California
		Valencia Oranges, Tangelos,	
		Tangerines and other citrus	Cooperative
		hybrids: make applications July	Extension Specialist
		through October.	for proper timing
		S 1 1	and spray program.
	Mr. C. P. I.C. Fl.	Spray as needed.	
	Mites: Citrus Bud, Citrus Flat,	Southern California:	
	Citrus Red, Citrus Rust	Coastal Lemons and Limes: apply	
		May and June and/or September	
	Scales: Black, Brown Soft,	through December.	
	California Red, Citricola, Purple,		
	Yellow, Red	Interior Lemons and Limes: apply	
		in April and May and/or	
		September through November.	
		Grapefruit: make applications July	
		through October.	

	Navel Oranges: make applications July through September.  Valencia Oranges, Tangelos, Tangerines and other citrus hybrids: make applications July through October.	
	Spray as needed.	
Mites: Citrus Bud, Citrus Flat,	Oxnard Plains Area:	
Citrus Red, Citrus Rust	Make applications as needed throughout the year.	
Scales: Black, Brown Soft,	an sugas as the year.	
California Red, Citricola, Purple,		
Yellow, Red		

CITRUS: (Florida and Texas) Do not exceed a maximum of 3.6 pounds active ingredient per 1,000 square feet in Texas and Florida.

CROP	PESTS	TIMING	RESTRICTIONS
Citrons Grapefruits Lemons	Citrus Rust Mite, Spider Mites, Bud Mites, Flat Mites. Scales: Black Soft, Brown Soft,	Summer spray only. Re-spray as	Precautions in the use of oil include: Do not apply oil spray when trees are wilting. Do not apply oil and sulfur within 3 weeks
Limes Mandarins Oranges Tangelos	Chaff, Glover, Purple, Red, Yellow  Does not control Citrus Snow	needed.	of each other. Sensitive foliage may be injured. In Florida, consult the Florida Citrus Spray and Dust Schedule, or your Agricultural
Tangerines Other citrus hybrids	Scale. Whitefly, Blackfly Greasy Spot (Grapefruit) Greasy Spot (all other varieties) Loosening sooty mold		Experiment Station or State Extension Service Specialist for complete details on the spraying program best suited to your locale. In Texas, consult with your Agricultural Experiment Station or State
DO NOT APPLY TO NAVEL ORANGES.			Extension Specialist for complete details on the spraying program suited to your locale.

## **VEGETABLE GARDENS**

CROP	PESTS	TIMING/
*Asterisk denotes crop not approved in	*Asterisk denotes pest not approved in	RESTRICTIONS
California.	California.	
Asparagus, Beans, Beets, Broccoli,	Aphids, Mites, Beetle Larvae,	Spray once or twice weekly
Chinese Broccoli, Broccoli Raab,	Leafminers, Thrips, Leafhopper,	depending on the rapid
Brussels Sprouts, Cabbage, Cauliflower,	Whitefly, Alternaria Leafspot, Gummy	growth of the crop and/or
Chinese Cabbage (Bok Choy and Mapa),	Stem Blight, Powdery Mildew, Rust	vector pressure.
Chinese Mustard Cabbage (Gai Choy),	Cucumber Mosaic Virus, Papaya	Spray as needed.
Cavalo Broccoli, Collards, Kale,	Ringspot Virus, Pepper Mottle Virus,	
Kohlrabi, Mizuna, Mustard Greens,	Potato Leafroll Virus, Potato Virus Y,	
Mustard Spinach, Rape Greens, Celery,	Tobacco Etch Virus, Watermelon	
Chayote, Chinese Waxgourd, Citron	Mosaic Virus 2, Zucchini Yellow	
Melon, Cucumber, Gherkin, Hyotan,	Mosaic Virus.	
Cucuzza, Hechima, Chinese Okra,		
Balsam Apple, Balsam Pear, Bitter		
Melon, Chinese Cucumber, True		
Cantaloupe, Cantaloupe, Casaba,		

Crenshaw Melon, Golden Pershaw Melon, Honeydew Melon, Honey Galls, Mango Melon, Persian Melon, Pumpkin, Summer Squash, Winter Squash, Watermelon, Dasheen (Taro)*, Eggplant, Ginger*, Ginseng*, Herbs and Spices* (Curly Leaf Basil, Lemon Balm), Japanese Radish (Daikon)*, Lettuce, Okra*, Peppers, Potatoes, Radishes, Sweet Potatoes		
Chinese Artichoke* (Japanese Artichoke), Cilantro*, Herbs and Spices* (Mexican Oregano, Mint)	Aphids, Mites, Beetle Larvae, Leafminers, Thrips, Leafhopper, Whitefly, Alternaria Leafspot, Gummy Stem Blight, Powdery Mildew, Rust, Pepper Psyllids, Cucumber Mosaic Virus 2, Papaya Ringspot Virus, Pepper Mottle Virus, Potato Leafroll Virus, Potato Virus Y, Tobacco Etch Virus, Watermelon Mosaic Virus 2, Zucchini Yellow Mosaic Virus	Spray once or twice weekly depending on the rapid growth of the crop and/or vector pressure.
Corn (Sweet)	Aphids, Mites, Leafhopper*, Leafminers, Corn Earworm, Rootworm, Armyworm, Whitefly, Cercospora*	Spray as needed.
Tomatoes	Aphids, Mites, Beetle Larvae, Leafminers, Thrips, Leafhopper, Whitefly, Alternaria Leafspot, Gummy Stem Blight, Powdery Mildew, Rust, Tomato Psyllid*, Tomato Pin Worm*, Fruit Worm*, Army Worm*, Horn Worm*, Lygus Bug*, Stink Bug*, Cucumber Mosaic Virus, Papaya Ringspot Virus, Pepper Mottle Virus, Potato Leafroll Virus, Potato Virus Y, Tobacco Etch Virus, Watermelon Mosaic Virus 2, Zucchini Yellow Mosaic Virus	Spray once or twice weekly depending on the rapid growth of the crop and/or vector pressure.

## ROSES, FLOWERING SHRUBS & ORNAMENTALS

PLANT	PESTS	TIMING/ RESTRICTIONS
Flowering and Foliage Plants including Roses and Other Flowering Shrubs	Aphids, Adelgids, Eriophyid Mites, Gall Mites, Honey Locust Plant Bug, Lace Bug, Leaf Beetle Larvae, Leafminer (non-larvae), Leafrollers, Mealybugs, Psyllids (immature), Red Mites, Sawfly (larvae), Scales (immature), Spider Mites, Webworms, Whiteflies, Blackspot, Powdery Mildew, Young Caterpillars	Summer (Foliar or Cover): Spray as needed.
Foliage Ornamentals & Bedding Plants	Aphids, Adelgids	Summer (Foliar or Cover): Spray as needed.  Application safety during bloom period must be determined for each individual species of plant to be treated by conducting a small test.

Non-Fruit-Bearing	Mites	Apply every 10-14 days.
Trees: Apple, Cherry,	Powdery Mildew	Spray before disease first appears. Apply every
Peach, Pear	1 5 7 401 / 171140 77	10-14 days.
Shade Trees**	Aphids, Adelgids, Eriophyid Mites,	Summer (Foliar or Cover):
Ornamental Trees**	Gall Mites, Hemlock Wooly	Spray as needed.
Shrubs (including	Adelgids, Honey Locust Plant Bug,	
Conifers, Deciduous	Lace Bug, Leaf Beetle Larvae,	Use enough spray solution to completely penetrate
and Broadleaf	Leafminer (non-larvae), Leafrollers,	the leaf canopy and cover both top and bottom of
Evergreens & Woody	Mealybugs, Psyllids (immature), Red	all the leaves and stems until wet but without
Ornamentals)	Mites, Sawfly (larvae), Scales	significant runoff.
	(immature), Spider Mites,	
	Webworms, Whiteflies, Blackspot,	Fall Dormant applications: Limit use only to:
	Powdery Mildew, Young Caterpillars	American Red Oak, Japanese Black Pine,
		Dogwood, Weeping Cherry, Cornelian Cherry,
		Crabapple, Norway Maple, Purple Plum.
		Restriction: Do not spray when there is obvious
		moisture deficit in leaves, or the plant is under
		stress. This product may cause discoloration of
		Blue Spruce. Do not use on conifers or ferns not
		tolerant to oil sprays (e.g. Alberta Dwarf Spruce).

<sup>\*\*</sup>This product removes the glaucous (blue) bloom from such evergreens as Colorado Blue Spruce and Koster Spruce.

Tendency toward sensitivity: Red Cedar and Douglas Fir.

## STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

<u>Pesticide Storage:</u> Store and transport in an upright position. Keep container tightly closed to prevent evaporation. Do not use, pour, spill or store near heat or open flame. Store in a cool dry area inaccessible to children or pets.

<u>Pesticide Disposal:</u> If partly filled – Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

<u>Container Disposal:</u> *If empty* – Nonrefillable container. Do not reuse or refill this container. Place in trash or offer for recycling if available.

For information on pesticide products (including health concerns, medical emergencies, or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378.

#### **WARRANTY**

Seller warrants that this product complies with the specifications expressed in this label. To the extent consistent with applicable law, Seller makes no other warranties, and disclaims all other warranties, express or implied, including but not limited to warranties of merchantability and fitness for the intended purpose. To the extent consistent with applicable law, Seller's liability or default, breach or failure under this label shall be limited to the amount of the purchase price. To the extent consistent with applicable law, Seller shall have no liability for consequential damages.

Bonide Products, Inc. 6301 Sutliff Road Oriskany, NY 13424

Always test spray oil sensitive plants such as Cryptomeria, Smoke Tree, Chamaecypris, Juniper, Japanese Holly and Spruce.