

Fruit and Nuts – Commercial

Small Fruit Spray Schedule (Grape, Blueberry, and Bramble)

Grape

Dormant spray

Insect	Spray Materials in 1 Gallon and Remarks
Scales	Copper sulfate (bluestone) – 6 teaspoons; apply after pruning; burn all pruned vines. Complete coverage is important for scale control. Do not use dormant oils after the buds start to open.
	Superior oil 1% – Follow manufacturer’s recommendations.

Just before bloom

Insect	Spray Materials in 1 Gallon and Remarks
Grape berry moths, leaf-chewing insects	Carbaryl 50WP (Sevin) – 2 tablespoons/gal water. PHI=7 days; Carbaryl is highly toxic to bees. Read label.
	Imidan 70W (Phosmet) – 1 $\frac{1}{3}$ -2 $\frac{1}{8}$ pounds/acre. PHI=14 days; do not use Imidan in home and gardens.

Postbloom sprays: just after bloom and later at 10- to 14-day intervals to harvest

Insect	Spray Materials in 1 Gallon and Remarks
Citrus blackflies, citrus leafminers, citrus whiteflies,	Esteem 0.86EC (Pyriproxyfen) – 10 fl. ounces/acre. Be sure to apply in sufficient water to ensure thorough coverage of tree. Apply before populations build; 1 day pre-harvest interval. Do not make more than 2 applications/season. Allow 21 days between applications.
European red mites, two-spotted mites	Vendex 50WP (Fenbutatin-oxide) – PHI=14 days; apply 1-2 pounds/acre when mites first appear. Limit to 2 applications/season; efficacy reduced at temperatures below 70 F.
Grape berry moths, leaf-chewing insects	Carbaryl 50WP (Sevin) – 2 tablespoons/gal water. PHI=7 days; Carbaryl is highly toxic to bees. Read label.
	Imidan 70W (Phosmet) – 1 $\frac{1}{3}$ -2 $\frac{1}{8}$ pounds/acre. PHI=14 days; do not use Imidan in home and gardens.
Leafhoppers, mealybugs	Admire Pro (Imidacloprid) – 1.0-1.4 ounce/acre; no pre-harvest interval limitation. Allow 14 days between applications. Limit to 2.8 ounces/acre/year.

Warning: Re-entry times for workers entering groves and/or treated fields should be strictly observed. Be sure to check the label for this information.

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Blueberry

Dormant spray oil

Insect	Insecticide	Remarks
Scales	Esteem 0.86EC (Pyriproxyfen) – 16 ounces/acre + Oil – 1.5 gallons	PHI=7days; limit to 2 applications/growing season. Allow 14 days between Esteem applications.
	Summer or Superior oil (2%-3% actual oil)	Follow manufacturer's directions when using or mixing oil. Thorough coverage is necessary when using any foliar product to control scale insects.

Petal fall and cover spray: 10-14 days apart

Insect	Insecticide	Remarks
Maggots, weevils	Carbaryl 50WP (Sevin) 3-4 pounds/100 gallons	PHI=7 days; highly toxic to bees. A diluted spray of 125-150 gallons/acre is recommended first application, 3 weeks before harvest. Repeat 10 days later if needed.
	Lannate SP (Methomyl) – ½ pound/acre	PHI=3 days; highly toxic to bees. Do not apply during bloom. Toxic to fish, aquatic invertebrates, and mammals. Limit to 4 applications/season. Use with care.
	Lannate (2.4) LV (Methomyl) – 1½ pints/acre	
Fruitworms	Esteem 0.86EC (Pyriproxyfen) – 16 ounces/acre	PHI=7 days; see preceding remarks; follow label.
Fruitworms (suppression)	SpinTor 2SC (Spinosad) – 4-6 fl. ounces/acre	PHI=3 days; see preceding remarks.
Fruitworms, maggots, weevils	Imidan 70W (Phosmet) – 1 ⅓ pounds/acre	PHI=3 days; do not make more than 5 applications/acre/year.
Maggots, weevils, maggots	Carbaryl 50WP (Sevin) 3-4 pounds/100 gallons	PHI=7 days; highly toxic to bees. A diluted spray of 125-150 gallons/acre is recommended first application, 3 weeks before harvest. Repeat 10 days later if needed.
	Lannate SP (Methomyl) – ½ pound/acre	
	Lannate (2.4) LV (Methomyl) – 1½ pints/acre	PHI=3 days; highly toxic to bees. Do not apply during bloom. Toxic to fish, aquatic invertebrates, and mammals. Limit to 4 applications/season. Use with care.

Postharvest

Insect	Insecticide	Remarks
Fire ants	Extinguish IGR (Methoprene) – 1.0-1.5 pounds/acre (Broadcast)	Apply in April when ants are actively foraging and in October prior to cool weather. Apply to dry soil.

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Bramble (Blackberry, etc.)

Dormant

Insect	Time of Application and Insecticide/Gallon	Remarks
Mites, scales	Summer or Superior oil	Follow the manufacturer's directions. Complete spray coverage is necessary.

Delayed dormant as buds begin to break

Insect	Time of Application and Insecticide/Gallon	Remarks
Scales	Summer or Superior oil	Follow the manufacturer's directions. Complete spray coverage is necessary.

Prebloom just before blossoms open

Insect	Time of Application and Insecticide/Gallon	Remarks
Aphids	Malathion 57EC (Malathion) – 3 pints/acre	PHI=1 day; highly toxic to bees. Do not apply at bloom or when bees may be exposed.
Leafhoppers, leafrollers, sawflies, thrips	Carbaryl 50W (Sevin) – 1 tablespoon	PHI=7 days; highly toxic to bees; do not apply at bloom or when bees may be exposed.
	SpinTor 2SC (Spinosad) – 4-6 fl. ounces/acre	SpinTor is toxic to bees exposed to treatment within 3 hours of spray; toxic to aquatic invertebrates. Rotate products after 2 continuous applications of SpinTor. Limit to 29 fl. ounces/acre/ season. Allow 3 days before harvest.
Leafrollers	Brigade WSB (Bifenthrin) – 8-16 ounces/acre	PHI=3 days; highly toxic to bees and extremely toxic to fish and aquatic invertebrates. May not be used if endangered species may get into contact with the treatment. Read label. Consult local agents.
Mites	Brigade WSB (Bifenthrin) – 16 ounces/acre	
Mites, thrips	Malathion 57EC (Malathion) – 1½ pints/100 gallons water	PHI=1 day; highly toxic to bees. Do not apply at bloom or when bees may be exposed.

After blossom to harvest

Insect	Time of Application and Insecticide/Gallon	Remarks
Blackberry and raspberry crown borers, leafhoppers, mites, sawflies, thrips	Malathion 57EC (Malathion) – 1½ pints/100 gallons water	August-September: Ideal time for fall applications; PHI=1 day; highly toxic to bees. Do not apply at bloom or when bees may be exposed.

April/October

Insect	Time of Application and Insecticide/Gallon	Remarks
Fire ants	Extinguish (Methoprene) – 1.0-1.5 pounds	Broadcast in April when ants are actively foraging and in October prior to cool weather. Apply on dry soil.

Note: Various borers cause problems in the canes. Infested or galled canes should be cut out and destroyed. Thorough spray coverage is important for any foliar product used. The volume of spray used should increase throughout the season.