

# Chapter 8. Eggplant Production<sup>1</sup>

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## Botany and Planting

**Eggplant, Oriental, Thai, and Indian eggplant**—*Solanum melongena*

Information on “Asian” solanums is included in this chapter. The Asian solanum group includes three types of eggplant and bird’s eye pepper (Thai pepper). Pea eggplant, which was discussed in previous editions of this Handbook, is on the Federal Noxious Weed list, so it is not included in the current version. The harvestable product includes fruits that are eaten at the immature or mature stage. All can be grown on raised beds with or without plastic mulch, using either drip or subsurface irrigation. As with most eggplants, these types tend to be short-lived perennials, especially the Thai eggplant, which is a relatively compact, stocky plant. They can be severely pruned or ratooned and allowed to regrow if staking does not prohibit this operation. Fertilizer recommendations for eggplant should be used for the three types of eggplant, while those for peppers should be followed for bird’s eye peppers. These crops can be started from seed or transplants. All the indeterminate types of eggplant need some type of staking support.

Table 8.1. Planting information for eggplant.

Planting Dates	Eggplant	Japanese/Chinese/ Indian Eggplant	Thai Eggplant
North Florida	Aug; Feb–Mar	Feb–Mar	Feb–Mar
Central Florida	Aug–Sept; Jan–Feb	Aug–Sept; Jan–Feb	Aug–Sept; Jan–Feb
South Florida	Aug–Feb	Aug–Feb	Aug–Feb
Planting Information			
Distance between rows (in)	36–72	36–72	36–72
Distance between plants (in)	18–40	18–40	36–60
Seeding depth (in)	0.5–0.75	0.5–0.75	0.5–0.75
Seed per acre to seed (lb)	1	0.25–0.5	0.25–0.5
Seed per acre to transplant (lb)	0.25–0.50		
Days to maturity from seed	90–115		
Days to maturity from transplant	70–90		
Plant population (acre)	9,680	9,680	9,680

## Cultivars

For more information on eggplant variety descriptions and disease resistance, see EDIS publication HS1243, *Conventional and Specialty Eggplant Varieties in Florida*, at <https://edis.ifas.ufl.edu/hs1243>.

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**Disease Key:** CM = cucumber mosaic, ToM = tomato mosaic, R = resistant, IR = intermediate resistance, T = tolerant.

## Traditional Types

**Classic.** Erect, vigorous plant; glossy deep-purple-black elongated-oval, green-calyxed fruit; medium-tall upright plant; fancy fruit appearance. Heavy yields of high-quality fruit. Does not perform well in cooler weather. R to ToM.

**Nadia.** Oval, long, vigorous plant with good fruit set under cool conditions. Very firm, attractive, purple-black fruit with long harvest period, and sets well under cool conditions.

**Night Shadow.** Elongate oval, widely adapted with high-yield potential. Strong plants produce firm fruit that maintain rich, dark glossy black color right through harvest. R to ToM.

**Santana.** Tall, upright plant with few spines; firm, white flesh; glossy black-purple exterior with attractive bright green calyx. Continuous setting.

**Triviata.** Fruit are half-long in shape, very uniform in size and very attractive shiny purple in color. Strong-growing, well-balanced plant.

## Specialty Types

**Birgah.** A Sicilian-style eggplant with a round, heavy, firm fruit, deep purple color, sweet taste, and white flesh.

**Ghostbuster.** Hybrid variety that produces oval-shaped white fruit 6–7 inches long.

**Italian Pink.** Open-pollinated cultivar; oval fruit; cream/rose color; mature fruit color is rose pink, purple calyx.

**Megal.** Italian cylindrical fruit; purple black color, very uniform; excellent shelf life and flavor; few spines; early maturity. R to CM, ToM.

**Millionaire.** Slender, oriental type; dark purple fruit color; purple calyx; early maturing.

**Vitoria.** Very long cylindrical, deep purple Imperial type; green calyx; mild flavor. R to ToM.

**Zebra.** Elongated oval; purple with white stripes; very attractive with good flavor.

Table 8.2. Ethnic eggplant cultivars.

Oriental (Japanese) Eggplant	
Black Shine	Money Maker 2
Hybrid Mangan	
Oriental (Chinese) Eggplant	
Bride Hybrid	Ma-Zu Purple
Hybrid Purple Charm	
Thai Eggplant	
White: Hybrid White Ball	Purple: Round Purple
Green: Green Beauty	Variegated: Hybrid Tiger
Purple: Hybrid Violet Prince	Variegated: Petch Slam
Indian Eggplant (Dark, Wine-Colored)	
Hybrid Bharata	Hybrid Chu-Chu

Table 8.3. Herbicides approved for managing weeds in eggplant.

Active Ingredient lb a.i./Acre	Trade Name Product/Acre	MOA Code	Weeds Controlled/Remarks
<b>Labels change frequently. Be sure to read a current product label before applying any chemical.</b>			
<b>Bensulide</b> 5.0–6.0	(Prefar) 4 E 5–6 qt	8	Annual broadleaves and grasses. Incorporate 2–4 inches with mechanical cultivation or irrigation.
<b>Carfentrazone</b> up to 0.031	(Aim) 2 EC up to 2 fl oz	14	Apply as a preplant burndown for emerged broadleaf weeds up to 4 inches tall or rosettes less than 3 inches across. Good coverage is essential. A nonionic surfactant, methylated seed oil, or crop oil concentrate is recommended. No pretransplant interval.
<b>Flumioxazin</b> up to 0.128	(Chateau) 51 WDG up to 4 oz	14	Annual broadleaves. Apply to row middles of raised plastic-mulched beds that are at least 4 inches higher than the treated row middles and 24-inch bed width. Label is a Third-Party Registration (TPR, Inc.). Use without a signed authorization and waiver of liability is a misuse of the product. Tank-mix with a burndown herbicide to control emerged weeds.
<b>Glyphosate</b>	(various formulations) consult labels	9	Emerged broadleaves, grasses, and nutsedge. Apply as a preplant burndown. Consult label for individual product directions.
<b>Halosulfuron</b> 0.024–0.05	(Sanda, Profine) 75 DF 0.5–1.0 oz	2	Broadleaves and yellow/purple nutsedge. Apply to row middles only. Do not exceed 2 oz/A per 12-month period. 30-day PHI.
<b>Lactofen</b> 0.25–0.5	(Cobra) 2 EC 16–32 fl oz	14	Broadleaves. Label is a Third-Party Registration (TPR, Inc.). Use without a signed authorization and waiver of liability is a misuse of the product. Apply to row middles only with shielded or hooded sprayers. Cobra contacting green foliage or fruit can cause excessive injury. Drift of Cobra-treated soil particles onto plants can cause injury. Limit of 1 PRE and 1 POST application per growing season. 30-day PHI.
<b>S-metolachlor</b> 0.64–0.95	(Dual Magnum) 7.62 EC 0.67–1.0 pt	15	Annual broadleaves, grasses, and yellow/purple nutsedge suppression. Label is a Third Party Registration (TPR, Inc.). Use without a signed authorization and waiver of liability is a misuse of the product. Apply to the finished bed immediately before laying the plastic. Do not exceed 1.68 pt of Dual Magnum/A per crop cycle. 60-day PHI.
<b>Napropamide</b> 1.0–2.0	(Devrinol) 50 DF 2.0–4.0 lb (Devrinol 2-XT) 2–4 quarts	15	Annual broadleaves and grasses. Transplanted eggplant only. Use the lower rate on light soils (coarse-textured–sandy). Do not apply more than 4 lb/A per crop cycle.
<b>Paraquat</b> 0.5–1.0	(Gramoxone) 2 SL 2.0–4.0 pt (Firestorm) 3 SL 1.3–2.7 pt	22	Emerged broadleaf and grass weeds. Apply as a preplant burndown treatment. Surfactant recommended. <b>Consult label for new restrictions.</b>
<b>Pelargonic acid</b>	(Scythe) 4.2 EC 3%–10% v/v	27	Emerged broadleaves and grasses. Apply as a preplant burndown treatment. Product is a contact, nonselective, foliar-applied herbicide with no residual control. May be tank-mixed with soil residual compounds.
<b>Pendimethalin</b> 0.48–0.72	(Prowl H2O) 3.8 1.0–1.5 pt	3	Broadleaves and grasses. Apply to row middles or under the plastic. Do not exceed 3.0 pt/A per year. 70-day PHI.
<b>Pyraflufen</b> 0.001–0.003	(ET Herbicide) 0.208 EC 0.5–2.0 fl oz	14	Emerged broadleaves less than 4 inches tall or rosettes less than 3 inches diameter. Apply as a preplant burndown treatment. Nonionic surfactant or crop oil concentrate recommended.
<b>Sulfentrazone</b> 0.09	Willowood Sulfentrazone 3 fl oz	14	Broadleaves, grasses, and nutsedge. Apply under the plastic mulch or in row middles. Do not use on soils with less than 1% organic matter.
<b>Trifluralin</b> 0.5	(Treflan, Triflurex) 4 EC 1 pt	3	Annual broadleaves and grasses. Do not apply in Dade County. Incorporate 4 inches or less within 8 hours of application. Results in Florida are erratic on soils with low organic matter and clay contents. Do not apply after transplanting. Not all trifluralin herbicides are labeled in eggplant, so consult labels before application.
<b>*** POSTTRANSPLANT ***</b>			
<b>Carfentrazone</b> up to 0.031	(Aim) 2 EC up to 2 fl oz	14	Emerged broadleaves. Apply as a hooded application to row middles only. Do not exceed 6.1 fl oz/A per cropping season. A nonionic surfactant, methylated seed oil, or crop oil concentrate is recommended. 0-day PHI.
<b>Clethodim</b> 0.09–0.13 0.07–0.25	(Select, Arrow) 2 EC 6–8 fl oz (Select Max) 1 EC 9–16 fl oz	1	Perennial and annual grasses. In fields with heavy grass pressure or larger grass weeds, use higher rates or repeat applications 14 days apart. Use a crop oil concentrate at 1% v/v or a nonionic surfactant with Select Max. 20-day PHI.
<b>DCPA</b> 6.0–7.5	(Dacthal) 6 F 8–10 pt	3	Annual broadleaves and grasses. Apply to weed-free soil 6 to 8 weeks after crop is established and growing rapidly or to moist soil in row middles after crop establishment. Note label precautions against replanting nonregistered crops within 8 months.
<b>Diquat</b> 0.5	(Reglone Dessiccant) 1 qt	22	Broadleaves and grasses. Apply to row middles only. Maximum of 2 applications per season. Prevent drift to crop. Nonionic surfactant recommended. 30-day PHI.
<b>Halosulfuron</b> 0.024–0.05	(Sanda, Profine) 75 DF 0.5–1.0 oz	2	Broadleaves and yellow/purple nutsedge. Apply to row middles only. Include a nonionic surfactant. Do not exceed 2 oz/A per 12-month period. 30-day PHI.
<b>Lactofen</b> 0.25–0.5	(Cobra) 2 EC 16–32 fl oz	14	Broadleaves. Apply to row middles only with shielded or hooded sprayers. Cobra contacting green foliage or fruit can cause excessive injury. Drift of Cobra-treated soil particles onto plants can cause contact injury. Limit of 1 PRE and 1 POST application per growing season. Surfactant recommended. 30-day PHI.

Active Ingredient lb a.i./Acre	Trade Name Product/Acre	MOA Code	Weeds Controlled/Remarks
<b>S-metolachlor</b> 0.95	(Dual Magnum) 7.62 EC 1.0 pt	15	Annual broadleaves and grasses. Yellow/purple nutsedge suppression. Label is a Third-Party Registration (TPR, Inc.). Use without a signed authorization and waiver of liability is a misuse of the product. Direct spray solution to row middles only. Do not exceed 1.68 pt of Dual Magnum/A per crop. 60-day PHI.
<b>Paraquat</b> 0.5	(Gramoxone) 2 SL 2.0 pt (Firestorm) 3 SL 1.3 pt	22	Emerged broadleaves and grasses. Direct spray over emerged weeds 1 to 6 inches tall in row middles between mulched beds. Use low pressure and shields to control drift. Do not apply more than 3 times per season. Nonionic surfactant recommended. <b>Consult label for new restrictions.</b>
<b>Pelargonic acid</b>	(Scythe) 4.2 EC 3%–10% v/v	27	Emerged broadleaves and grasses. Direct spray to row middles. Product is a contact, nonselective, foliar-applied herbicide with no residual control. May be tank-mixed with several soil residual compounds.
<b>Pendimethalin</b> 0.48–0.72	(Prowl H20) 3.8 1.0–1.5 pt	3	Broadleaves and grasses. May be applied posttransplant to row middles if previously untreated. Do not exceed 3.0 pt/A per year. 70-day PHI.
<b>Sethoxydim</b> 0.19–0.28	(Poast) 1.5 EC 1.0–1.5 pt	1	Actively growing grasses. A total of 4.5 pt/A applied in one season. Unsatisfactory results may occur if applied to grasses under stress. Crop oil concentrate recommended. 20-day PHI.
<b>*** POSTHARVEST ***</b>			
<b>Diquat</b> 0.5	(Reglone Dessiccant) 2.0 pt	22	Minimum of 35 gal/A. Thorough coverage is required. Nonionic surfactant recommended.

Table 8.4. Insecticides approved for management of arthropod pests of eggplant.

Insect	MOA Code <sup>1</sup>	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Rate per Season	Days to Harvest	REI (Hours)	Remarks
<b>Labels change frequently. Be sure to read a current product label before applying any chemical. Please refer to Chapter 19 for information on biopesticides, including materials labeled for certified organic production.</b>							
Aphids (including green peach aphid, potato aphid, aphid-transmitted viruses)	1A	*Lannate LV; *SP (methomyl)	LV: 0.75–3.0 pt SP: 0.25–1.0 lb	No more than 15 pints/A per crop. No more than 5 lb/A per crop.	5	48	No more than 10 applications per crop.
	1A	*Vydate L (oxamyl)	2–4 pt (foliar)	Do not apply more than 24 pt per acre per season.	1	48	
	1B	*Dibrom 8 EC (naled)	1 pt	Do not apply more than 6 pints/A per season.	1	48	Apply no more than 1 pt/acre in Florida. Do not apply when temperature is over 90°F.
	1B	Malathion 8F (malathion)	1.56 pt	Maximum application/A per crop is 6.24 pints.	3	12	Maximum number of applications is 4.
	3A	*Baythroid XL (beta-cyfluthrin)	1.6–2.8 fl oz	Maximum amount per season: 16.8 fl oz per acre.	7	12	Do not apply at less than 7-day intervals.
	3A	*Proaxis Insecticide (gamma-cyhalothrin)	1.92–3.84 fl oz	Do not apply more than 2.88 pints per acre per season.	5	24	
	3A	<b>Pyganic Crop Protection EC 5.0</b> (pyrethrins)	4.5–18.0 fl oz	11.25 pints	0	12	Pyrethrins degrade rapidly in sunlight. Thorough coverage is important. OMRI-listed. Do not apply more than 10 times per season.
	3A	*Warrior II (lambda-cyhalothrin)	0.96–1.92 fl oz	Do not apply more than 0.36 lb a.i./acre per season.	5	24	
	3A & 4A	*Endigo ZC (lambda-cyhalothrin & thiamethoxam)	4.0–4.5 fl oz	Do not exceed a total of 19.0 fl oz per acre per season.	5	24	This product can kill bees and other insect pollinators.
	4A	Actara (thiamethoxam)	2.0–5.5 oz	Maximum of 11 oz/acre per season.	0	12	Do not use if a soil application of a neonicotinoid has been used.
	4A	Admire Pro (imidacloprid) (for rates for other brands, see labels)	7–10.5 fl oz	Maximum 10.5 fl oz/A per crop per season.	21	12	Application restrictions exist for this product because of risk to bees and other insect pollinators. Follow application restrictions found in the directions for use to protect pollinators. Most effective if applied to soil at transplanting.
	4A	Admire Pro (imidacloprid)	0.44 fl oz/10,000 plants		21	12	Planthouse: 1 application. See label.
4A	Assail 30 SG (acetamiprid)	1.5–4.0 oz	Do not exceed a total of 16.0 oz/A per growing season, including any pretransplant applications of acetamiprid.	7	12	Begin applications for whiteflies when first adults are noticed. Do not apply more than 4 times per season or apply more often than every 7 days.	
4A	Belay 50 WDG (clothianidin)	1.6–3.2 oz	Do not apply more than 6.4 oz per acre per season.	7	12	Do not use an adjuvant. Toxic to bees. Do not release irrigation water from the treated area.	
4A	Belay 50 WDG (clothianidin)	4.8–6.4 oz (soil application)	Do not apply more than 6.4 oz per acre per season.	Apply at planting	12	See label for application instructions. Do not release irrigation water from the treated area.	
4A	Platinum (thiamethoxam)	5.0–11.0 fl oz	Do not exceed a total of 11 fl oz Platinum/A per growing season.	30	12	For most crops that are not on the label, a 120-day plant-back interval must be observed. To manage resistance, avoid using related pesticides (Actara, Assail) in conjunction with Platinum.	
4A	Platinum 75SG (thiamethoxam)	1.66–3.67 oz	Do not exceed a total of 3.67 oz Platinum 75 SG/A per growing season.	30	12	For most crops that are not on the label, a 120-day plant-back interval must be observed. To manage resistance, avoid using related pesticides (Actara, Assail) in conjunction with Platinum.	
4A	Provado 1.6F (imidacloprid)	3.8–6.2 oz	Maximum per crop per season 19.2 fl oz/A.	0	12	Do not apply if imidacloprid or thiamethoxam have been used at planting.	

Insect	MOA Code <sup>1</sup>	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Rate per Season	Days to Harvest	REI (Hours)	Remarks
	4A	<b>Scorpion 35SL Insecticide</b> (dinotefuran)	<b>Foliar:</b> 2–7 fl oz <b>Soil:</b> 9–10.5 fl oz	Do not apply more than 10.5 fl oz per acre per season as foliar sprays or more than 21 fl oz to soil.	<b>Foliar:</b> 1 <b>Soil:</b> 21	12	Use only one application method.
	4A	<b>Venom Insecticide</b> (dinotefuran)	<b>Foliar:</b> 1–4 oz <b>Soil:</b> 5–6.0 oz	Do not apply more than 6 oz foliar or 12 oz soil per season.	<b>Foliar:</b> 1 <b>Soil:</b> 21	12	Do not use both application methods. No more than 3 applications per season.
	4A & 28	<b>Durivo</b> (thiamethoxam & chlorantraniliprole)	10–13 oz	Do not exceed a total of 13 fl oz/A.	30	12	May be applied to soil by one of several methods—see label.
	4A & 28	<b>VoliAm Flexi</b> (thiamethoxam & chlorantraniliprole)	4.0–7.0 oz	Limited to 14 oz/acre per growing season.	1	12	
	4D	<b>Sivanto Prime</b> (flupyradifurone)	7.0–14.0 fl oz	Do not apply more than 28.0 fl oz/A per year.	1	4	Minimum interval between applications: 7 days.
	9B	<b>Fulfill</b> (pymetrozine)	2.75 oz	Do not apply more than 5.5 oz/acre per crop.	0	12	Apply before populations build to damaging levels. Minimum of 7 days between applications. Do not make more than two applications.
	9B	<b>PQZ</b> (pyrifluquinazon)	2.4–3.2 fl oz	Do not apply more than 4.8 fl oz (0.070 lb a.i.) per acre per crop cycle. Do not apply more than 9.6 fl oz (0.140 lb a.i.) per year.	1	12	Do not apply by air. Do not make more than 2 applications per crop cycle. Do not make more than 4 applications per year.
	9C	<b>Beleaf 50 SG</b> (flonicamid)	2.0–2.8 oz	Do not apply more than 8.4 oz/acre per season.	0	12	Begin applications before pests reach damaging levels.
	9D	<b>Sefina</b> (afidopyropen)	3.0 fl oz	Do not apply more than 28 fl oz of Sefina (0.09 lb afidopyropen a.i.) per acre per season.	0	12	Do not make more than 2 sequential applications of Sefina before using an effective insecticide with a different mode of action.
	23	<b>Movento</b> (spirotetramat)	4.0–5.0 fl oz	Maximum of 10 fl oz per acre per season.	1	24	
	28	<b>Exirel</b> (cyantraniliprole)	13.5–20.5 fl oz	Do not apply more than 0.4 lb a.i./A per crop	1	12	Application restrictions exist for this product because of risk to bees and other pollinators. Follow application restrictions found in the directions for use to protect pollinators. Minimum application interval between treatments is 5 days.
	28	<b>Verimark</b> (cyantraniliprole)	6.75–13.5 fl oz	Do not apply more than 0.4 lb a.i./A per crop	1	4	
	-	<b>Aza-Direct</b> (azadirachtin)	1–2 pt, up to 3.5 pt if needed		0	4	Antifeedant, repellent, insect growth regulator. OMRI-listed.
	-	<b>Azatin XL</b> (azadirachtin)	5–21 oz		0	4	Antifeedant, repellent, insect growth regulator. See label for rates for specific pests.
	-	<b>Molt-X</b> (azadirachtin)	10 fl oz		0	4	Antifeedant, repellent, insect growth regulator. OMRI-listed.
	-	<b>M-Pede 49% EC</b> (Soap, insecticidal)	1%–2% v/v		0	12	OMRI-listed.
	-	<b>BotaniGard ES</b> ( <i>Beauveria bassiana</i> strain GHA)	0.25–1 quart per acre. Apply in sufficient water to cover foliage, typically 5–100 gallons per acre.		0	4	May be used in greenhouses. Contact dealer for recommendations if an adjuvant must be used. Compatible in tank mixes with some fungicides.
	-	<b>Mycotrol ESO</b> ( <i>Beauveria bassiana</i> strain GHA)	0.25–1 quart per acre. Apply in sufficient water to cover foliage, typically 5–100 gallons per acre.		0	4	May be used in greenhouses. Contact dealer for recommendations if an adjuvant must be used. Compatible in tank mixes with some fungicides. OMRI-listed.

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	-	<b>PFR-97</b> ( <i>Isaria fumosorosea</i> Apopka strain 97)	1.0–2.0 lb		0	4	Repeat applications at 3–10 days are needed to maintain control. Can be used in greenhouse for food crop transplants raised to be planted into the field. OMRI-listed.
	-	<b>Requiem 25EC</b> (extract of <i>Chenopodium ambrosioides</i> )	2–4 qt		0	4	Begin applications before pests reach damaging levels.
	-	<b>SuffOil-X</b> (mineral oil)	1–2 gallons per 100 gallons of water.		0	4	OMRI-listed.
	-	<b>Ultra-Fine Oil JMS Stylet-Oil Saf-T-Side</b> (oil, insecticidal)	3–6 qt/100 gal (JMS); 1–2 gal/100 gal water		0	4	Do not exceed four applications per season. Stylet-oil will not control aphids or beetles. Organic Stylet-Oil and Saf-T-Side are OMRI-listed.
<b>Beetles</b> (including blister beetle, Colorado potato beetle, cucumber beetle, flea beetle)	1A	<b>Carbaryl 4L</b> (carbaryl)	0.5–2 qt	Do not apply more than a total of 8 quarts/A per crop per year.	3	12	Toxic to honeybees and other bees.
	1A	<b>Sevin 80 S; XLR; 4F</b> (carbaryl)	<b>80S:</b> 0.63–2.5 lb <b>XLR, 4F:</b> 0.5–2 qt	Do not apply more than 8 qt or 10 lb per acre per crop.	3	12	Do not apply more than seven times. Applications must be at least 7 days apart. Do not apply to crops or weeds in bloom.
	1A	<b>*Vydate L</b> (oxamyl)	2–4 pt (foliar)	Do not apply more than 24 pt per acre per season.	1	48	
	1B	<b>*Dibrom 8 EC</b> (naled)	1 pt	Do not apply more than 6 pints/A per season.	1	48	Apply no more than 1 pt/acre in Florida. Do not apply when temperature is over 90°F.
	3A	<b>*Ambush 25W</b> (permethrin)	6.4–12.8 oz	Do not apply more than 2 lb a.i. per acre per season (128 oz).	3	12	
	3A	<b>*Asana XL (0.66 EC)</b> (esfenvalerate)	5.8–9.6 fl oz	Do not apply more than 0.35 lb a.i. per acre per season.	7	12	
	3A	<b>*Baythroid XL</b> (beta-cyfluthrin)	1.6–2.8 fl oz	Maximum amount per season: 16.8 fl oz per acre.	7	12	Do not apply at less than 7-day intervals.
	3A	<b>*Brigade 2EC</b> (bifenthrin)	2.1–6.4 fl oz	Do not apply more than 0.2 lb active ingredient per acre per season.	7	12	Do not make applications less than 7 days apart.
	3A	<b>*Hero</b> (bifenthrin & zeta-cypermethrin)	4.5–11.2 oz	Do not apply more than 43.26 fl oz/A per season.	7	12	
	3A	<b>*Mustang</b> (zeta-cypermethrin)	2.4–4.3 oz	Do not apply more than 0.3 lb a.i./acre per season.	1	12	Do not make applications less than 7 days apart.
	3A	<b>*Pounce 25 W</b> (permethrin)	6.4–9.6 oz	Do not apply more than 0.6 lb a.i./acre per season.	3	12	
	3A	<b>*Proaxis Insecticide</b> (gamma-cyhalothrin)	1.92–3.84 fl oz	Do not apply more than 2.88 pints per acre per season.	5	24	
	3A	<b>Pyganic Crop Protection EC 5.0</b> (pyrethrins)	4.5–18.0 fl oz	11.25 pints	0	12	Pyrethrins degrade rapidly in sunlight. Thorough coverage is important. OMRI-listed. Do not apply more than 10 times per season.
	3A & 4A	<b>*Endigo ZC</b> (lambda-cyhalothrin & thiamethoxam)	4.0–4.5 fl oz	Do not exceed a total of 19.0 fl oz per acre per season.	5	24	This product can kill bees and other insect pollinators.
	3A & 28	<b>*Besiege</b> (lambda-cyhalothrin & chlorantraniliprole)	5.0–9.0 fl oz	Do not exceed a total of 31 fl oz of Besiege per acre per year.	5	24	
	4A	<b>Actara</b> (thiamethoxam)		Maximum of 11 oz/acre per season.	0	12	Do not use if a soil application of a neonicotinoid has been used.



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	4A	<b>Admire Pro</b> (imidacloprid) (for rates for other brands, see labels)	7–10.5 fl oz	Maximum 10.5 fl oz/A per crop per season.	21	12	Application restrictions exist for this product because of risk to bees and other insect pollinators. Follow application restrictions found in the directions for use to protect pollinators. Most effective if applied to soil at transplanting.
	4A	<b>Assail 30 SG</b> (acetamiprid)	1.5–4.0 oz	Do not exceed a total of 16.0 oz/A per growing season, including any pretransplant applications of acetamiprid.	7	12	Do not apply more than 4 times per season or apply more often than every 7 days.
	4A	<b>Belay 50 WDG</b> (clothianidin)	1.6–3.2 oz	Do not apply more than 6.4 oz per acre per season.	7	12	Do not use an adjuvant. Toxic to bees. Do not release irrigation water from the treated area.
	4A	<b>Platinum</b> (thiamethoxam)	5.0–11.0 fl oz	Do not exceed a total of 11 fl oz Platinum/A per growing season.	30	12	For most crops that are not on the label, a 120-day plant-back interval must be observed. To manage resistance, avoid using related pesticides (Actara, Assail) in conjunction with Platinum.
	4A	<b>Platinum 75SG</b> (thiamethoxam)	1.66–3.67 oz	Do not exceed a total of 3.67 oz Platinum 75 SG/A per growing season.	30	12	For most crops that are not on the label, a 120-day plant-back interval must be observed. To manage resistance, avoid using related pesticides (Actara, Assail) in conjunction with Platinum.
	4A	<b>Provado 1.6F</b> (imidacloprid)	3.8–6.2 oz	Maximum per crop per season 19.2 fl oz/A.	0	12	Do not apply if imidacloprid or thiamethoxam have been used at planting.
	4A	<b>Scorpion 35SL Insecticide</b> (dinotefuran)	<b>Foliar:</b> 2–7 fl oz <b>Soil:</b> 9–10.5 fl oz	Do not apply more than 10.5 fl oz per acre per season as foliar sprays or more than 21 fl oz to soil.	<b>Foliar:</b> 1 <b>Soil:</b> 21	12	Use only one application method.
	4A	<b>Venom Insecticide</b> (dinotefuran)	<b>Foliar:</b> 1–4 oz <b>Soil:</b> 5–6.0 oz	Do not apply more than 6 oz foliar or 12 oz soil per season.	<b>Foliar:</b> 1 <b>Soil:</b> 21	12	Do not use both application methods. No more than 3 applications per season.
	4A & 28	<b>Durivo</b> (thiamethoxam & chlorantraniliprole)	10–13 oz	Do not exceed a total of 13 fl oz/A.	30	12	May be applied to soil by one of several methods—see label.
	4A & 28	<b>Voliam Flexi</b> (thiamethoxam & chlorantraniliprole)	4.0–7.0 oz	Limited to 14 oz/acre per growing season.	1	12	
	4D	<b>Sivanto Prime</b> (flupyradifurone)	7.0–14.0 fl oz	Do not apply more than 28.0 fl oz/A per year.	1	4	Minimum interval between applications: 7 days.
	5	<b>Entrust SC</b> (spinosad)	1.5–10 fl oz	Do not use more than 29 oz per acre per crop.	1	4	Do not apply to seedlings grown for transplant. OMRI-listed.
	5	<b>Radiant SC</b> (spinetoram)	5–10 fl oz	Maximum of 34 fl oz per acre per season.	1	4	
	6	<b>*Agri-Mek SC</b> (abamectin)	1.7–3.5 fl oz	Do not apply more than 10.25 fl oz/A in a growing season.	7	12	Do not make more than 2 sequential applications. Must be used with a nonionic activator-type wetting, spreading, or penetrating adjuvant.
	15	<b>Rimon 0.83EC</b> (novaluron)	9–12 fl oz	Do not apply more than 36 fl oz per acre per season.	1	12	Do not use with an adjuvant.
	28	<b>Coragen</b> (rynaxypyr)	3.5–7.5 fl oz	Do not apply more than 15.4 fl oz per acre per crop.	1	4	Can be applied by drip chemigation or as a soil application at planting as well as a foliar spray. See label. For hornworms, can use as little as 2.0 fl oz/acre when applied as a foliar spray.
	28	<b>Exirel</b> (cyantraniliprole)	7.0–13.5 fl oz		1	12	For control of Colorado potato beetle. This product has pollinator protection warning information on the label.
	28	<b>Verimark</b> (cyantraniliprole)	6.75–13.5 fl oz	Do not apply more than 0.4 lb a.i./A per crop.	1	4	Colorado potato beetle and flea beetles



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	-	<b>Aza-Direct</b> (azadirachtin)	1–2 pt, up to 3.5 pt if needed		0	4	Antifeedant, repellent, insect growth regulator. OMRI-listed.
	-	<b>Azatin XL</b> (azadirachtin)	5–21 oz		0	4	Antifeedant, repellent, insect growth regulator. See label for rates for specific pests.
	-	<b>Neemix 4.5</b> (azadirachtin)	4–16 fl oz		0	12	IGR and feeding repellent. OMRI-listed.
	-	<b>SuffOil-X</b> (mineral oil)	1–2 gallons per 100 gallons of water.		0	4	OMRI-listed.
<b>Caterpillars</b> (including cabbage looper, imported cabbageworm, corn earworm, garden webworm, hornworms, tobacco budworm, tomato fruitworm, beet armyworm, fall armyworm, southern armyworm)	1A	<b>Carbaryl 4L</b> (carbaryl)	0.5–2 qt	Do not apply more than a total of 8 quarts/A per crop per year.	3	12	Toxic to honeybees and other bees.
	1A	<b>*Lannate LV; *SP</b> (methomyl)	<b>LV:</b> 0.75–3.0 pt <b>SP:</b> 0.25–1.0 lb	<b>LV:</b> No more than 15 pints/A per crop. <b>SP:</b> No more than 5 lb/A per crop.	5	48	No more than 10 applications per crop.
	1A	<b>Sevin 80 S; XLR; 4F</b> (carbaryl)	<b>80S:</b> 0.63–2.5 lb <b>XLR, 4F:</b> 0.5–2 qt	Do not apply more than 8 qt or 10 lb per acre per crop.	3	12	Do not apply more than seven times. Applications must be at least 7 days apart. Do not apply to crops or weeds in bloom.
	3A	<b>*Ambush 25W</b> (permethrin)	6.4–12.8 oz	Do not apply more than 2 lb a.i. per acre per season (128 oz).	3	12	
	3A	<b>*Asana XL (0.66 EC)</b> (esfenvalerate)	5.8–9.6 fl oz	Do not apply more than 0.35 lb a.i. per acre per season.	7	12	
	3A	<b>*Baythroid XL</b> (beta-cyfluthrin)	1.6–2.8 fl oz	Maximum amount per season: 16.8 fl oz per acre.	7	12	Do not apply at less than 7-day intervals.
	3A	<b>*Brigade 2EC</b> (bifenthrin)	2.1–6.4 fl oz	Do not apply more than 0.2 lb active ingredient per acre per season.	7	12	Do not make applications less than 7 days apart.
	3A	<b>*Danitol 2.4 EC</b> (fenpropathrin)	10.67 fl oz	Do not exceed 42.67 fl oz total application/A per season.	3	24	Maximum of 4 applications (0.8 lb a.i./acre) per season.
	3A	<b>*Hero</b> (bifenthrin & zeta-cypermethrin)	4.5–11.2 oz	Do not apply more than 43.26 fl oz/A per season.	7	12	
	3A	<b>*Mustang</b> (zeta-cypermethrin)	2.4–4.3 oz	Do not apply more than 0.3 lb a.i./acre per season.	1	12	Do not make applications less than 7 days apart.
3A	<b>*Pounce 25 W</b> (permethrin)	6.4–9.6 oz	Do not apply more than 0.6 lb a.i./acre per season.	3	12		
3A	<b>*Proaxis Insecticide</b> (gamma-cyhalothrin)	1.92–3.84 fl oz	Do not apply more than 2.88 pints per acre per season.	5	24		
3A	<b>Pyganic Crop Protection EC 5.0</b> (pyrethrins)	4.5–18.0 fl oz	11.25 pints	0	12	Pyrethrins degrade rapidly in sunlight. Thorough coverage is important. OMRI-listed. Do not apply more than 10 times per season.	
3A	<b>*Warrior II</b> (lambda-cyhalothrin)	0.96–1.92 fl oz	Do not apply more than 0.36 lb a.i./acre per season.	5	24		
3A & 4A	<b>*Endigo ZC</b> (lambda-cyhalothrin & thiamethoxam)	4.0–4.5 fl oz	Do not exceed a total of 19.0 fl oz per acre per season.	5	24	This product can kill bees and other insect pollinators.	
3A & 28	<b>*Besiege</b> (lambda-cyhalothrin & chlorantraniliprole)	5.0–9.0 fl oz	Do not exceed a total of 31 fl oz of Besiege per acre per year.	5	24		
4A & 28	<b>Durivo</b> (thiamethoxam & chlorantraniliprole)	10–13 oz	Do not exceed a total of 13 fl oz/A.	30	12	May be applied to soil by one of several methods—see label.	

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	4A & 28	<b>Voliam Flexi</b> (thiamethoxam & chlorantraniliprole)	4.0–7.0 oz	Limited to 14 oz/acre per growing season.	1	12	
	5	<b>Entrust SC</b> (spinosad)	1.5–10 fl oz	Do not use more than 29 oz per acre per crop.	1	4	Do not apply to seedlings grown for transplant. OMRI-listed.
	5	<b>Radiant SC</b> (spinetoram)	5–10 fl oz	Maximum of 34 fl oz per acre per season.	1	4	
	6	<b>*Proclaim</b> (emamectin benzoate)	2.4–4.8 oz	No more than 28.8 oz/acre per season.	7	12	
	6 & 28	<b>*Minecto Pro</b> (abamectin & cyantraniliprole)	5.5–10 fl oz	Do not apply more than 20 fl oz per acre per year.	7	24	This label contains pollinator warnings.
	11A	<b>Crymax WDG</b> ( <i>Bacillus thuringiensis</i> subspecies <i>kurstaki</i> )	0.5–2.0 lb		0	4	Use high rate for armyworms. Treat when larvae are young. Not for organic production.
	11A	<b>Deliver</b> ( <i>Bacillus thuringiensis</i> subspecies <i>kurstaki</i> )	0.25–1.5 lb		0	4	Use higher rates for armyworms. OMRI- listed.
	11A	<b>DiPel DF</b> ( <i>Bacillus thuringiensis</i> subspecies <i>kurstaki</i> )	0.5–2.0 lb		0	4	Treat when larvae are young. Good coverage is essential. Can be used in greenhouses. OMRI-listed <sup>2</sup> .
	11A	<b>Javelin WG</b> ( <i>Bacillus thuringiensis</i> subspecies <i>kurstaki</i> )	0.12–1.50 lb		0	4	Treat when larvae are young. Thorough coverage is essential. OMRI-listed.
	11A	<b>Biobit HP</b> ( <i>Bacillus thuringiensis</i> subspecies <i>kurstaki</i> )	0.5–2.0 lb		0	4	Treat when larvae are young. Good coverage is essential. Can be used in the greenhouse. OMRI-listed.
	11A	<b>Xentari DF</b> ( <i>Bacillus thuringiensis</i> subspecies <i>aizawai</i> )	0.5–2.0 lb		0	4	Treat when larvae are young. Thorough coverage is essential. May be used in the greenhouse. Can be used in organic production.
	15	<b>Rimon 0.83EC</b> (novaluron)	9–12 fl oz	Do not apply more than 36 fl oz per acre per season.	1	12	Do not use with an adjuvant.
	18	<b>Confirm 2F</b> (tebufenozide)	6–16 fl oz	Do not apply more than 64 oz product per season.	7	4	Do not apply more than 16 oz per application.
	18	<b>Intrepid 2F</b> (methoxyfenozide)	4–16 fl oz	Do not apply more than 64 oz product per season.	1	4	Do not apply more than 16 oz per application.
	28	<b>Coragen</b> (chlorantraniliprole/rynaxypyr)	3.5–7.5 fl oz	Do not apply more than 15.4 fl oz per acre per crop.	1	4	Can be applied by drip chemigation or as a soil application at planting as well as a foliar spray. See label. For hornworms, can use as little as 2.0 fl oz/acre when applied as a foliar spray.
	28	<b>Exirel</b> (cyantraniliprole)	7–20.5 fl oz	Do not apply a total of more than 0.4 lb a.i./A per crop.	1	12	Application restrictions exist for this product because of risk to bees and other pollinators. Follow application restrictions found in the directions for use to protect pollinators. Minimum application interval between treatments is 5 days.
	28	<b>Verimark</b> (cyantraniliprole)	5–13.5 fl oz	Do not apply more than 0.4 lb a.i./A per crop	1	4	
	-	<b>Aza-Direct</b> (azadirachtin)	1–2 pt, up to 3.5 pt if needed		0	4	Antifeedant, repellent, insect growth regulator. OMRI-listed.
	-	<b>Azatin XL</b> (azadirachtin)	5–21 oz		0	4	Antifeedant, repellent, insect growth regulator. See label for rates for specific pests.

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	-	<b>Molt-X</b> (azadirachtin)	10 fl oz		0	4	Antifeedant, repellent, insect growth regulator. OMRI-listed.
	-	<b>Checkmate TPW-F</b> (pheromone)	1.2–6.0 fl oz		0	0	For mating disruption of tomato pinworm. See label for details of use.
	-	<b>Grandevo</b> ( <i>Chromobacterium subsugae</i> strain PRAA4-1)	1–3 lb		0	4	Can be used in organic production. OMRI-listed.
	-	<b>MBI-203 EP</b> ( <i>Chromobacterium subsugae</i> )	4.0–12.0 qt		0	4	OMRI-listed. Can be used in the greenhouse.
	-	<b>Neemix 4.5</b> (azadirachtin)	4–16 fl oz		0	12	IGR and feeding repellent. OMRI-listed.
<b>Fire ants</b>	7A	<b>Extinguish</b> (S-methoprene)	1.0–1.5 lb		0	4	Slow-acting IGR (insect growth regulator). Best applied early spring and fall where crop will be grown. Colonies will be reduced after three weeks and eliminated after 8 to 10 weeks. May be applied by ground equipment or aerially.
	7C	<b>Esteem Ant Bait</b> (pyriproxyfen)	1.5–2.0 lb		1	12	Apply when ants are actively foraging.
<b>Grasshoppers</b>	3A	<b>*Hero</b> (bifenthrin & zeta-cypermethrin)	4.5–11.2 oz	Do not apply more than 43.26 fl oz/A per season.	7	12	
	3A	<b>*Mustang</b> (zeta-cypermethrin)	2.4–4.3 oz	Do not apply more than 0.3 lb a.i./acre per season.	1	12	Do not make applications less than 7 days apart.
	3A	<b>*Proaxis Insecticide</b> (gamma-cyhalothrin)	1.92–3.84 fl oz	Do not apply more than 2.88 pints per acre per season.	5	24	
	3A	<b>Pyganic Crop Protection EC 5.0</b> (pyrethrins)	4.5–18.0 fl oz	11.25 pints	0	12	Pyrethrins degrade rapidly in sunlight. Thorough coverage is important. OMRI-listed. Do not apply more than 10 times per season.
	3A	<b>*Warrior II</b> (lambda-cyhalothrin)	0.96–1.92 fl oz	Do not apply more than 0.36 lb a.i./acre per season.	5	24	
	3A & 4A	<b>*Endigo ZC</b> (lambda-cyhalothrin & thiamethoxam)	4.0–4.5 fl oz	Do not exceed a total of 19.0 fl oz per acre per season.	5	24	This product can kill bees and other insect pollinators.
	3A & 28	<b>*Besiege</b> (lambda-cyhalothrin & chlorantraniliprole)	5.0–9.0 fl oz	Do not exceed a total of 31 fl oz of Besiege per acre per year.	5	24	
	4A	<b>Scorpion 355L Insecticide</b> (dinotefuran)	<b>Foliar:</b> 2–7 fl oz <b>Soil:</b> 9–10.5 fl oz	Do not apply more than 10.5 fl oz per acre per season as foliar sprays or more than 21 fl oz to soil.	<b>Foliar:</b> 1 <b>Soil:</b> 21	12	Use only one application method.
<b>Lace bugs</b>	4A	<b>Venom Insecticide</b> (dinotefuran)	<b>Foliar:</b> 1–4 oz <b>Soil:</b> 5–6.0 oz	Do not apply more than 6 oz foliar or 12 oz soil per season.	<b>Foliar:</b> 1 <b>Soil:</b> 21	12	Do not use both application methods. No more than 3 applications per season.
	1A	<b>Carbaryl 4L</b> (carbaryl)	0.5–2 qt	Do not apply more than a total of 8 quarts/A per crop per year.	3	12	Toxic to honeybees and other bees.
	1A	<b>Sevin 80 S; XLR; 4F</b> (carbaryl)	<b>80S:</b> 0.63–2.5 lb <b>XLR, 4F:</b> 0.5–2 qt	Do not apply more than 8 qt or 10 lb per acre per crop.	3	12	Do not apply more than seven times. Applications must be at least 7 days apart. Do not apply to crops or weeds in bloom.
	1B	<b>Malathion 8F</b> (malathion)	1.56 pt	Maximum application/A per crop is 6.24 pints.	3	12	Maximum number of applications is 4.

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Leafhoppers	1A	<b>Carbaryl 4L</b> (carbaryl)	0.5–2 qt	Do not apply more than a total of 8 quarts/A per crop per year.	3	12	Toxic to honeybees and other bees.
	1A	<b>Sevin 80 S; XLR; 4F</b> (carbaryl)	<b>80S:</b> 0.63–2.5 lb <b>XLR, 4F:</b> 0.5–2 qt	Do not apply more than 8 qt or 10 lb per acre per crop.	3	12	Do not apply more than seven times. Applications must be at least 7 days apart. Do not apply to crops or weeds in bloom.
	3A	<b>*Baythroid XL</b> (beta-cyfluthrin)	1.6–2.8 fl oz	Maximum amount per season: 16.8 fl oz per acre.	7	12	Do not apply at less than 7-day intervals.
	3A	<b>*Hero</b> (bifenthrin & zeta-cypermethrin)	4.5–11.2 oz	Do not apply more than 43.26 fl oz/A per season.	7	12	
	3A	<b>*Mustang</b> (zeta-cypermethrin)	2.4–4.3 oz	Do not apply more than 0.3 lb a.i./acre per season.	1	12	Do not make applications less than 7 days apart.
	3A	<b>*Proaxis Insecticide</b> (gamma-cyhalothrin)	1.92–3.84 fl oz	Do not apply more than 2.88 pints per acre per season.	5	24	
	3A	<b>Pyganic Crop Protection EC 5.0</b> (pyrethrins)	4.5–18.0 fl oz	11.25 pints	0	12	Pyrethrins degrade rapidly in sunlight. Thorough coverage is important. OMRI-listed. Do not apply more than 10 times per season.
	3A	<b>*Warrior II</b> (lambda-cyhalothrin)	0.96–1.92 fl oz	Do not apply more than 0.36 lb a.i./acre per season.	5	24	
	3A & 4A	<b>*Endigo ZC</b> (lambda-cyhalothrin & thiamethoxam)	4.0–4.5 fl oz	Do not exceed a total of 19.0 fl oz per acre per season.	5	24	This product can kill bees and other insect pollinators.
	4A	<b>Actara</b> (thiamethoxam)	2.0–5.5 oz	Maximum of 11 oz/acre per season.	0	12	Do not use if a soil application of a neonicotinoid has been used.
	4A	<b>Admire Pro</b> (imidacloprid) (for rates for other brands, see labels)	7–10.5 fl oz	Maximum 10.5 fl oz/A per crop per season.	21	12	Application restrictions exist for this product because of risk to bees and other insect pollinators. Follow application restrictions found in the directions for use to protect pollinators. Most effective if applied to soil at transplanting.
	4A	<b>Belay 50 WDG</b> (clothianidin)	1.6–3.2 oz	Do not apply more than 6.4 oz per acre per season.	7	12	Do not use as adjuvant. Toxic to bees. Do not release irrigation water from the treated area.
	4A	<b>Belay 50 WDG</b> (clothianidin)	4.8–6.4 oz (soil application)	Do not apply more than 6.4 oz per acre per season.	Apply at planting	12	See label for application instructions. Do not release irrigation water from the treated area.
	4A	<b>Platinum</b> (thiamethoxam)	5.0–11.0 fl oz	Do not exceed a total of 11 fl oz Platinum/A per growing season.	30	12	For most crops that are not on the label, a 120-day plant-back interval must be observed. To manage resistance, related pesticides (Actara, Assail) in conjunction with Platinum.
	4A	<b>Platinum 75SG</b> (thiamethoxam)	1.66–3.67 oz	Do not exceed a total of 3.67 oz Platinum 75 SG/A per growing season.	30	12	For most crops that are not on the label, a 120-day plant-back interval must be observed. To manage resistance, avoid using Prova-related pesticides (Actara, Assail) in conjunction with Platinum.
	4A	<b>Scorpion 35SL Insecticide</b> (dinotefuran)	<b>Foliar:</b> 2–7 fl oz <b>Soil:</b> 9–10.5 fl oz	Do not apply more than 10.5 fl oz per acre per season as foliar sprays or more than 21 fl oz to soil.	<b>Foliar:</b> 1 <b>Soil:</b> 21	12	Use only one application method.
	4A & 28	<b>Durivo</b> (thiamethoxam & chlorantraniliprole)	10–13 oz	Do not exceed a total of 13 fl oz/A.	30	12	May be applied to soil by one of several methods—see label.
	4A & 28	<b>Voliam Flexi</b> (thiamethoxam & chlorantraniliprole)	4.0–7.0 oz	Limited to 14 oz/acre per growing season.	1	12	

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	4D	<b>Sivanto Prime</b> (flupyradifurone)	7.0–14.0 fl oz	Do not apply more than 28.0 fl oz/A per year.	1	4	Minimum interval between applications: 7 days.
	9B	<b>PQZ</b> (pyrifluquinazon)	3.2 fl oz	Do not apply more than 4.8 fl oz (0.070 lb a.i.) per acre per crop cycle. Do not apply more than 9.6 fl oz (0.140 lb a.i.) per acre per year.	1	12	Do not apply by air. Do not make more than 2 applications per crop cycle. Do not make more than 4 applications per year.
	16	<b>Courier 40SC</b> (buprofezin)	9.0–13.6 fl oz	Do not apply more than 27.2 fl oz/A per crop cycle.	1	12	Immature insects only. No more than 2 applications per crop cycle.
	-	<b>Aza-Direct</b> (azadirachtin)	1–2 pt, up to 3.5 pt if needed		0	4	Antifeedant, repellent, insect growth regulator. OMRI-listed.
	-	<b>Azatin XL</b> (azadirachtin)	5–21 oz		0	4	Antifeedant, repellent, insect growth regulator. See label for rates for specific pests.
	-	<b>Molt-X</b> (azadirachtin)	10 fl oz		0	4	Antifeedant, repellent, insect growth regulator. OMRI-listed.
	-	<b>M-Pede 49% EC</b> (soap, insecticidal)	1%–2% v/v		0	12	OMRI-listed.
	-	<b>SuffOil-X</b> (unsulfonated residue of petroleum oil)	1–2 gallons per 100 gallons of water.		0	4	OMRI-listed.
	-	<b>Ultra-Fine Oil JMS Stylet-Oil Saf-T-Side</b> (oil, insecticidal)	3–6 qt/100 gal (JMS); 1–2 gal/100 gal water		0	4	Do not exceed four applications per season. Stylet-oil will not control aphids or beetles. Organic Stylet-Oil and Saf-T-Side are OMRI-listed.
<b>Liriomyza leafminers</b>	1A	<b>*Vydate L</b> (oxamyl)	2–4 pt (foliar)	Do not apply more than 24 pt per acre per season.	1	48	
	1B	<b>*Dibrom 8 EC</b> (naled)	1 pt	Do not apply more than 6 pints/A per season.	1	48	Apply no more than 1 pt/acre in Florida. Do not apply when temperature is over 90°F.
	3A	<b>*Ambush 25W</b> (permethrin)	6.4–12.8 oz	Do not apply more than 2 lb a.i. per acre per season (128 oz).	3	12	
	3A	<b>*Brigade 2EC</b> (bifenthrin)	2.1–6.4 fl oz	Do not apply more than 0.2 lb active ingredient per acre per season.	7	12	Do not make applications less than 7 days apart.
	3A	<b>*Hero</b> (bifenthrin & zeta-cypermethrin)	4.5–11.2 oz	Do not apply more than 43.26 fl oz/A per season.	7	12	
	3A	<b>*Pounce 25 W</b> (permethrin)	6.4–9.6 oz	Do not apply more than 0.6 lb a.i./acre per season.	3	12	
	3A	<b>Pyganic Crop Protection EC 5.0</b> (pyrethrins)	4.5–18.0 fl oz	11.25 pints	0	12	Pyrethrins degrade rapidly in sunlight. Thorough coverage is important. OMRI-listed. Do not apply more than 10 times per season.
	4A	<b>Belay 50 WDG</b> (clothianidin)	1.6–3.2 oz	Do not apply more than 6.4 oz per acre per season.	7	12	Do not use an adjuvant. Toxic to bees. Do not release irrigation water from the treated area.
	4A	<b>Belay 50 WDG</b> (clothianidin)	4.8–6.4 oz (soil application)	Do not apply more than 6.4 oz per acre per season.	Apply at planting	12	See label for application instructions. Do not release irrigation water from the treated area.
	4A	<b>Scorpion 35SL Insecticide</b> (dinotefuran)	<b>Foliar:</b> 2–7 fl oz <b>Soil:</b> 9–10.5 fl oz	Do not apply more than 10.5 fl oz per acre per season as foliar sprays or more than 21 fl oz to soil.	<b>Foliar:</b> 1 <b>Soil:</b> 21	12	Use only one application method.
	5	<b>Entrust SC</b> (spinosad)	1.5–10 fl oz	Do not use more than 29 oz per acre per crop.	1	4	Do not apply to seedlings grown for transplant. OMRI-listed.
	5	<b>Radiant SC</b> (spinetoram)	5–10 fl oz	Maximum of 34 fl oz per acre per season.	1	4	

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	6	<b>*Agri-Mek SC</b> (abamectin)	1.7–3.5 fl oz	Do not apply more than 10.25 fl oz/A in a growing season.	7	12	Do not make more than 2 sequential applications. Must be used with a nonionic activator-type wetting, spreading, or penetrating adjuvant.
	6 & 28	<b>*Minecto Pro</b> (abamectin & cyantraniliprole)	5.5–10 fl oz	Do not apply more than 20 fl oz per acre per year.	7	24	This label contains pollinator warnings.
	15	<b>Rimon 0.83EC</b> (novaluron)	9–12 fl oz	Do not apply more than 36 fl oz per acre per season.	1	12	
	28	<b>Coragen</b> (chlorantraniliprole/rynaxypyr)	5.0–7.5 fl oz	Do not apply more than 15.4 fl oz per acre per crop.	1	4	Can be applied by drip chemigation or as a soil application at planting as well as a foliar spray. See label. For hornworms, can use as little as 2.0 fl oz/acre when applied as a foliar spray.
	28	<b>Exirel</b> (cyantraniliprole)	13.5–20.5 fl oz	Do not apply a total of more than 0.4 lb a.i./A per crop.	1	12	Application restrictions exist for this product because of risk to bees and other pollinators. Follow application restrictions found in the directions for use to protect pollinators. Minimum application interval between treatments is 5 days.
	28	<b>Verimark</b> (cyantraniliprole)	6.75–13.5 fl oz	Do not apply a total of more than 0.4 lb a.i./A per crop.	1	4	
	-	<b>Aza-Direct</b> (azadirachtin)	1–2 pt, up to 3.5 pt if needed		0	4	Antifeedant, repellent, insect growth regulator. OMRI-listed.
	-	<b>Azatin XL</b> (azadirachtin)	5–21 oz		0	4	Antifeedant, repellent, insect growth regulator. See label for rates for specific pests.
	-	<b>Molt-X</b> (azadirachtin)	10 fl oz		0	4	IGR and feeding repellent. OMRI-listed.
	-	<b>Neemix 4.5</b> (azadirachtin)	4–16 fl oz		0	12	Antifeedant, repellent, insect growth regulator. OMRI-listed.
	-	<b>PFR-97</b> ( <i>Isaria fumosorosea</i> Apopka strain 97)	1.0–2.0 lb		0	4	Repeat applications at 3–10 days are needed to maintain control. Can be used in greenhouse for food crop transplants raised to be planted into the field. OMRI-listed.
	-	<b>Requiem 25EC</b> (extract of <i>Chenopodium ambrosioides</i> )	2–4 qt		0	4	Begin applications before pests reach damaging levels.
	-	<b>SuffOil-X</b> (mineral oil)	1–2 gallons per 100 gallons of water.		0	4	OMRI-listed.
	-	<b>Ultra-Fine Oil JMS Stylet-Oil Saf-T-Side</b> (oil, insecticidal)	3–6 qt/100 gal (JMS); 1–2 gal/100 gal water		0	4	Do not exceed four applications per season. Stylet-oil will not control aphids or beetles. Organic Stylet-Oil and Saf-T-Side are OMRI-listed.
<b>Mealybug</b>	16	<b>Courier 40SC</b> (buprofezin)	9.0–13.6 fl oz	Do not apply more than 27.2 fl oz/A per crop cycle.	1	12	Immature insects only. No more than 2 applications per crop cycle.
<b>Mites</b> (including banks grass mite, broad mite, carmine spider mite, tomato russett mite, two-spotted spider mite)	1A	<b>*Vydate L</b> (oxamyl)	2–4 pt (foliar)	Do not apply more than 24 pt per acre per season.	1	48	
	1B	<b>*Dibrom 8 EC</b> (naled)	1 pt	Do not apply more than 6 pints/A per season.	1	48	Apply no more than 1 pt/acre in Florida. Do not apply when temperature is over 90°F.
	1B	<b>Malathion 8F</b> (malathion)	1.56 pt	Maximum application/A per crop is 6.24 pints.	3	12	Maximum number of applications is 4.



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	3A	<b>*Brigade 2EC</b> (bifenthrin)	2.1–6.4 fl oz	Do not apply more than 0.2 lb active ingredient per acre per season.	7	12	Do not make applications less than 7 days apart.
	3A	<b>*Danitol 2.4 EC</b> (fenpropathrin)	10.67 fl oz	Do not exceed 42.67 fl oz total application/A per season.	3	24	Maximum of 4 applications (0.8 lb a.i./acre) per season.
	3A	<b>*Hero</b> (bifenthrin & zeta-cypermethrin)	4.5–11.2 oz	Do not apply more than 43.26 fl oz/A per season.	7	12	
	3A	<b>*Proaxis Insecticide</b> (gamma-cyhalothrin)	1.92–3.84 fl oz	Do not apply more than 2.88 pints per acre per season.	5	24	
	3A	<b>Pyganic Crop Protection EC 5.0</b> (pyrethrins)	4.5–18.0 fl oz	11.25 pints	0	12	Pyrethrins degrade rapidly in sunlight. Thorough coverage is important. OMRI-listed. Do not apply more than 10 times per season.
	3A	<b>*Warrior II</b> (lambda-cyhalothrin)	0.96–1.92 fl oz	Do not apply more than 0.36 lb a.i./acre per season.	5	24	
	6	<b>*Agri-Mek SC</b> (abamectin)	1.7–3.5 fl oz	Do not apply more than 10.25 fl oz/A in a growing season.	7	12	Do not make more than 2 sequential applications. Must be used with a nonionic activator-type wetting, spreading, or penetrating adjuvant.
	6 & 28	<b>*Minnecto Pro</b> (abamectin & cyantraniliprole)	5.5–10 fl oz	Do not apply more than 20 fl oz per acre per year.	7	24	This label contains pollinator warnings.
	10B	<b>Zeal Miticide</b> (etoxazole)	2–3 oz	Do not apply more than 3 oz/A per season.	7	12	
	12B	<b>*Vendex 50 WP</b> (fenbutatin-oxide)	2–3 lb	Apply no more than 9 lb/A per year.	3	48	Apply when mites first appear. No more than 3 applications per year.
	20B	<b>Kanemite 15 SC</b> (acequinocyl)	31 fl oz	Do not apply more than 62 fl oz/A per season.	1	12	Allow a minimum of 21 days between treatments. Do not make more than two applications per year. Do not use an adjuvant.
	20D	<b>Acramite 50WS</b> (bifenazate)	0.75–1.0 lb	One application per season.	3	12	
	21A	<b>Portal</b> (fenpyroximate)	2.0 pt	Do not apply more than 4.0 pints/A per crop cycle.	1	12	Do not make more than 2 applications per season.
	-	<b>Oberon 23</b> (spiromesifen)	7.0–8.5 fl oz	Maximum amount per crop: 25.5 fl oz/acre.	7	12	No more than 3 applications.
	-	<b>Aza-Direct</b> (azadirachtin)	1–2 pt, up to 3.5 pt if needed		0	4	Antifeedant, repellent, insect growth regulator. OMRI-listed.
	-	<b>MET52 EC</b> ( <i>Metarhizium anisopliae</i> strain F52)	<b>Drench:</b> 40–80 fl oz <b>Foliar:</b> 0.5 pint–2 qt		0	0	
	-	<b>M-Pede 49% EC</b> (soap, insecticidal)	1%–2% v/v		0	12	OMRI-listed.
	-	<b>PFR-97</b> ( <i>Isaria fumosorosea</i> Apopka strain 97)	1.0–2.0 lb		0	4	Repeat applications at 3–10 days are needed to maintain control. Can be used in greenhouse for food crop transplants raised to be planted into the field.
	-	<b>SuffOil-X</b> (mineral oil)	1–2 gallons per 100 gallons of water.		0	4	OMRI-listed.

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Plant bugs and Tarnished plant bug	-	Ultra-Fine Oil JMS Stylet-Oil Saf-T-Side (oil, insecticidal)	3–6 qt/100 gal (JMS); 1–2 gal/100 gal water		0	4	Do not exceed four applications per season. Stylet-oil will not control aphids or beetles. Organic Stylet-Oil and Saf-T-Side are OMRI-listed.
	1A	Sevin 80 S; XLR; 4F (carbaryl)	80S: 0.63–2.5 lb XLR, 4F: 0.5–2 qt	Do not apply more than 8 qt or 10 lb per acre per crop.	3	12	Do not apply more than seven times. Applications must be at least 7 days apart. Do not apply to crops or weeds in bloom.
	3A	*Brigade 2EC (bifenthrin)	2.1–6.4 fl oz	Do not apply more than 0.2 lb active ingredient per acre per season.	7	12	Do not make applications less than 7 days apart.
	3A	*Mustang (zeta-cypermethrin)	2.4–4.3 oz	Do not apply more than 0.3 lb a.i./acre per season.	1	12	Do not make applications less than 7 days apart.
	3A	*Proaxis Insecticide (gamma-cyhalothrin)	1.92–3.84 fl oz	Do not apply more than 2.88 pints per acre per season.	5	24	
	3A	Pyganic Crop Protection EC 5.0 (pyrethrins)	4.5–18.0 fl oz	11.25 pints	0	12	Pyrethrins degrade rapidly in sunlight. Thorough coverage is important. OMRI-listed. Do not apply more than 10 times per season.
	3A	*Warrior II (lambda-cyhalothrin)	0.96–1.92 fl oz	Do not apply more than 0.36 lb a.i./acre per season.	5	24	
	3A & 4A	*Endigo ZC (lambda-cyhalothrin & thiamethoxam)	4.0–4.5 fl oz	Do not exceed a total of 19.0 fl oz per acre per season.	5	24	This product can kill bees and other insect pollinators.
	3A & 28	*Besiege (lambda-cyhalothrin & chlorantraniliprole)	5.0–9.0 fl oz	Do not exceed a total of 31 fl oz of Besiege per acre per year.	5	24	
	4A	Belay 50 WDG (clothianidin)	1.6–3.2 oz	Do not apply more than 6.4 oz per acre per season.	7	12	Do not use an adjuvant. Toxic to bees. Do not release irrigation water from the treated area.
Planthoppers	4A	Belay 50 WDG (clothianidin)	4.8–6.4 oz (soil application)	Do not apply more than 6.4 oz per acre per season.	Apply at planting	12	See label for application instructions. Do not release irrigation water from the treated area.
	29	Beleaf 50 SG (flonicamid)	2.0–2.8 oz	Do not apply more than 8.4 oz/acre per season.	0	12	
	-	M-Pede 49% EC (soap, insecticidal)	1%–2% v/v		0	12	OMRI-listed.
	16	Courier 40SC (buprofezin)	9.0–13.6 fl oz	Do not apply more than 27.2 fl oz/A per crop cycle.	1	12	Immature insects only. No more than 2 applications per crop cycle.
	4A	Scorpion 35SL Insecticide (dinotefuran)	Foliar: 2–7 fl oz Soil: 9–10.5 fl oz	Do not apply more than 10.5 fl oz per acre per season as foliar sprays or more than 21 fl oz to soil.	Foliar: 1 Soil: 21	12	Use only one application method.
	4D	Sivanto Prime (flupyradifurone)	7.0–14.0 fl oz	Do not apply more than 28.0 fl oz/A per year.	1	4	Minimum interval between applications: 7 days.
	23	Movento (spirotetramat)	4.0–5.0 fl oz	Maximum of 10 fl oz per acre per season.	1	24	
	3A	*Baythroid XL (beta-cyfluthrin)	1.6–2.8 fl oz	Maximum amount per season: 16.8 fl oz per acre.	7	12	Do not apply at less than 7-day intervals.
	1A	Carbaryl 4L (carbaryl)	0.5–2 qt	Do not apply more than a total of 8 quarts/A per crop per year.	3	12	Toxic to honeybees and other bees.
	1A	Sevin 80 S; XLR; 4F (carbaryl)	80S: 0.63–2.5 lb XLR, 4F: 0.5–2 qt	Do not apply more than 8 qt or 10 lb per acre per crop.	3	12	Do not apply more than seven times. Applications must be at least 7 days apart. Do not apply to crops or weeds in bloom.
Soil insects (garden symphylans)	3A	*Baythroid XL (beta-cyfluthrin)	1.6–2.8 fl oz	Maximum amount per season: 16.8 fl oz per acre.	7	12	Do not apply at less than 7-day intervals.
	3A	*Baythroid XL (beta-cyfluthrin)	1.6–2.8 fl oz	Maximum amount per season: 16.8 fl oz per acre.	7	12	Do not apply at less than 7-day intervals.

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	3A	<b>*Brigade 2EC</b> (bifenthrin)	2.1–6.4 fl oz	Do not apply more than 0.2 lb active ingredient per acre per season.	7	12	Do not make applications less than 7 days apart.
	3A	<b>*Danitol 2.4 EC</b> (fenpropathrin)	10.67 fl oz	Do not exceed 42.67 fl oz total application/A per season.	3	24	Maximum of 4 applications (0.8 lb a.i./acre) per season.
	3A	<b>*Hero</b> (bifenthrin & zeta-cypermethrin)	4.5–11.2 oz	Do not apply more than 43.26 fl oz/A per season.	7	12	
	3A	<b>*Mustang</b> (zeta-cypermethrin)	2.4–4.3 oz	Do not apply more than 0.3 lb a.i./acre per season.	1	12	Do not make applications less than 7 days apart.
	3A	<b>*Proaxis Insecticide</b> (gamma-cyhalothrin)	1.92–3.84 fl oz	Do not apply more than 2.88 pints per acre per season.	5	24	
	3A	<b>*Warrrior II</b> (lambda-cyhalothrin)	0.96–1.92 fl oz	Do not apply more than 0.36 lb a.i./acre per season.	5	24	
	3A & 4A	<b>*Endigo ZC</b> (lambda-cyhalothrin & thiamethoxam)	4.0–4.5 fl oz	Do not exceed a total of 19.0 fl oz per acre per season.	5	24	This product can kill bees and other insect pollinators.
	4A	<b>Actara</b> (thiamethoxam)	2.0–5.5 oz	Maximum of 11 oz/acre per season.	0	12	Do not use if a soil application of a neonicotinoid has been used.
	4A	<b>Belay 50 WDG</b> (clothianidin)	1.6–3.2 oz	Do not apply more than 6.4 oz per acre per season.	7	12	Do not use an adjuvant. Toxic to bees. Do not release irrigation water from the treated area.
	4A	<b>Scorpion 355L Insecticide</b> (dinotefuran)	<b>Foliar:</b> 2–7 fl oz <b>Soil:</b> 9–10.5 fl oz	Do not apply more than 10.5 fl oz per acre per season as foliar sprays or more than 21 fl oz to soil.	<b>Foliar:</b> 1 <b>Soil:</b> 21	12	Use only one application method.
	4A	<b>Venom Insecticide</b> (dinotefuran)	<b>Foliar:</b> 1–4 oz <b>Soil:</b> 5–6.0 oz	Do not apply more than 6 oz foliar or 12 oz soil per season.	<b>Foliar:</b> 1 <b>Soil:</b> 21	12	Do not use both application methods. No more than 3 applications per season.
	4A & 28	<b>Voliam Flexi</b> (thiamethoxam & chlorantraniliprole)	4.0–7.0 oz	Limited to 14 oz/acre per growing season.	1	12	
	15	<b>Rimon 0.83EC</b> (novaluron)	9–12 fl oz	Do not apply more than 36 fl oz per acre per season.	1	12	Do not use with an adjuvant.
	-	<b>Aza-Direct</b> (azadirachtin)	1–2 pt, up to 3.5 pt if needed		0	4	Antifeedant, repellent, insect growth regulator. OMRI-listed.
<b>Thrips (check label for species controlled)</b> (eastern flower thrips, western flower thrips, Florida flower thrips, foliar feeding thrips, chilli thrips, melon thrips)	1A	<b>Carbaryl 4L</b> (carbaryl)	0.5–2 qt	Do not apply more than a total of 8 quarts/A per crop per year.	3	12	Toxic to honeybees and other bees.
	1A	<b>Sevin 80 S; XLR; 4F</b> (carbaryl)	<b>80S:</b> 0.63–2.5 lb <b>XLR, 4F:</b> 0.5–2 qt	Do not apply more than 8 qt or 10 lb per acre per crop.	3	12	Do not apply more than seven times. Applications must be at least 7 days apart. Do not apply to crops or weeds in bloom.
	3A	<b>*Baythroid XL</b> (beta-cyfluthrin)	1.6–2.8 fl oz	Maximum amount per season: 16.8 fl oz per acre.	7	12	Do not apply at less than 7-day intervals.
	3A	<b>*Brigade 2EC</b> (bifenthrin)	2.1–6.4 fl oz	Do not apply more than 0.2 lb active ingredient per acre per season.	7	12	Do not make applications less than 7 days apart.
	3A	<b>*Hero</b> (bifenthrin & zeta-cypermethrin)	4.5–11.2 oz	Do not apply more than 43.26 fl oz/A per season.	7	12	
	3A	<b>*Proaxis Insecticide</b> (gamma-cyhalothrin)	1.92–3.84 fl oz	Do not apply more than 2.88 pints per acre per season.	5	24	

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	3A	<b>Pyganic Crop Protection EC 5.0</b> (pyrethrins)	4.5–18.0 fl oz	11.25 pints	0	12	Pyrethrins degrade rapidly in sunlight. Thorough coverage is important. OMRI-listed. Do not apply more than 10 times per season.
	4A	<b>Admire Pro</b> (imidacloprid) (for rates for other brands, see labels)	7–10.5 fl oz	Maximum 10.5 fl oz/A per crop per season.	21	12	Application restrictions exist for this product because of risk to bees and other insect pollinators. Follow application restrictions found in the directions for use to protect pollinators. Most effective if applied to soil at transplanting.
	4A	<b>Assail 30 SG</b> (acetamiprid)	1.5–4.0 oz	Do not exceed a total of 16.0 oz/A per growing season, including any pretransplant applications of acetamiprid.	7	12	Begin applications for whiteflies when first adults are noticed. Do not apply more than 4 times per season or apply more often than every 7 days.
	4A	<b>Belay 50 WDG</b> (clothianidin)	4.8–6.4 oz (soil application)	Do not apply more than 6.4 oz per acre per season.	Apply at planting	12	See label for application instructions. Do not release irrigation water from the treated area.
	4A	<b>Platinum</b> (thiamethoxam)	5.0–11.0 fl oz	Do not exceed a total of 11 fl oz Platinum/A per growing season.	30	12	For most crops that are not on the label, a 120-day plant-back interval must be observed. To manage resistance, avoid using Provado or other related pesticides (Actara, Assail) in conjunction with Platinum.
	4A	<b>Platinum 75SG</b> (thiamethoxam)	1.66–3.67 oz	Do not exceed a total of 3.67 oz Platinum 75 SG/A per growing season.	30	12	For most crops that are not on the label, a 120-day plant-back interval must be observed. To manage resistance, avoid using related pesticides (Actara, Assail) in conjunction with Platinum.
	4A	<b>Scorpion 35SL Insecticide</b> (dinotefuran)	<b>Foliar:</b> 2–7 fl oz <b>Soil:</b> 9–10.5 fl oz	Do not apply more than 10.5 fl oz per acre per season as foliar sprays or more than 21 fl oz to soil.	<b>Foliar:</b> 1 <b>Soil:</b> 21	12	Use only one application method.
	4A & 28	<b>Durivo</b> (thiamethoxam & chlorantraniliprole)	<b>Foliar:</b> 1–4 oz <b>Soil:</b> 5–6.0 oz 10–13 oz	Do not apply more than 6 oz foliar or 12 oz soil per season.	<b>Foliar:</b> 1 <b>Soil:</b> 21	12	Do not use both application methods. No more than 3 applications per season.
	4D	<b>Sivanto Prime</b> (flupyradifurone)	7.0–14.0 fl oz	Do not exceed a total of 13 fl oz/A.	30	12	May be applied to soil by one of several methods—see label.
	5	<b>Entrust SC</b> (spinosad)	1.5–10 fl oz	Do not apply more than 28.0 fl oz/A per year.	1	4	Minimum interval between applications: 7 days.
	5	<b>Radiant SC</b> (spinetoram)	5–10 fl oz	Do not use more than 29 oz per acre per crop.	1	4	Do not apply to seedlings grown for transplant. OMRI-listed.
	6	<b>*Agri-Mek SC</b> (abamectin)	1.7–3.5 fl oz	Maximum of 34 fl oz per acre per season.	1	4	Do not apply more than 2 sequential applications. Must be used with a nonionic activator-type wetting, spreading, or penetrating adjuvant.
	6 & 28	<b>*Minecto Pro</b> (abamectin & cyantraniliprole)	5.5–10 fl oz	Do not apply more than 20 fl oz per acre per year.	7	24	This label contains pollinator warnings.
	15	<b>Rimon 0.83EC</b> (novaluron)	9–12 fl oz	Do not apply more than 36 fl oz per acre per season.	1	12	Do not use with an adjuvant.
	28	<b>Exirel</b> (cyantraniliprole)	13.5–20.5 fl oz	Do not apply a total of more than 0.4 lb a.i./A per crop.	1	12	
	28	<b>Verimark</b> (cyantraniliprole)	<b>Tray drench/transplant water:</b> 10.0–13.5 fl oz <b>Drip:</b> 10 fl oz	Do not apply a total of more than 0.4 lb a.i./A per crop.	1	4	

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	-	<b>Aza-Direct</b> (azadirachtin)	1–2 pt, up to 3.5 pt if needed		0	4	Antifeedant, repellent, insect growth regulator. See label for rates for specific pests.
	-	<b>Azatin XL</b> (azadirachtin)	5–21 oz		0	4	
	-	<b>METS2 EC</b> ( <i>Metarhizium anisopliae</i> strain F52)	<b>Drench:</b> 40–80 fl oz <b>Foliar:</b> 0.5 pt–2 qt		0	0	
	-	<b>M-Pede 49% EC</b> (soap, insecticidal)	1%–2% v/v		0	12	OMRI-listed.
	-	<b>BotaniGard ES</b> ( <i>Beauveria bassiana</i> strain GHA)	0.25–1 quart per acre. Apply in sufficient water to cover foliage, typically 5–100 gallons per acre.		0	4	Product contains live spores of a naturally occurring fungus. Some fungicides may interfere with efficacy. OMRI-listed. May be used in greenhouses. Contact dealer for recommendations if an adjuvant may be used. Compatible in tank mixes with some fungicides.
	-	<b>Mycotrol ESO</b> ( <i>Beauveria bassiana</i> strain GHA)	0.25–1 quart		0	4	May be used in greenhouses. Contact dealer for recommendations if an adjuvant may be used. Compatible in tank mixes with some fungicides. OMRI-listed.
	-	<b>PFR-97</b> ( <i>Isaria fumosorosea</i> Apopka strain 97)	1.0–2.0 lb		0	4	
	-	<b>Requiem 25EC</b> (extract of <i>Chenopodium ambrosioides</i> )	2–4 qt		0	4	Begin applications before pests reach damaging levels.
	-	<b>SuffOil-X</b> (mineral oil)	1%–2% v/v		0	4	OMRI-listed.
	-	<b>Ultra-Fine Oil JMS Stylet-Oil Saf-T-Side</b> (oil, insecticidal)	3–6 qt/100 gal (JMS); 1–2 gal/100 gal water		0	4	Do not exceed four applications per season. Stylet-oil will not control aphids or beetles. Organic Stylet-Oil and Saf-T-Side are OMRI-listed.
<b>Weevils</b>	3A	<b>*Mustang</b> (zeta-cypermethrin)	2.4–4.3 oz	Do not apply more than 0.3 lb a.i./acre per season.	1	12	Do not make applications less than 7 days apart.
	3A	<b>*Proaxis Insecticide</b> (gamma-cyhalothrin)	1.92–3.84 fl oz	Do not apply more than 2.88 pints per acre per season.	5	24	
	3A	<b>*Warrior II</b> (lambda-cyhalothrin)	0.96–1.92 fl oz	Do not apply more than 0.36 lb a.i./acre per season.	5	24	
	3A & 4A	<b>*Endigo ZC</b> (lambda-cyhalothrin & thiamethoxam)	4.0–4.5 fl oz	Do not exceed a total of 19.0 fl oz per acre per season.	5	24	This product can kill bees and other insect pollinators.
	-	<b>Aza-Direct</b> (azadirachtin)	1–2 pt, up to 3.5 pt if needed		0	4	Antifeedant, repellent, insect growth regulator. OMRI-listed.
	-	<b>Azatin XL</b> (azadirachtin)	5–21 oz		0	4	Antifeedant, repellent, insect growth regulator. See label for rates for specific pests.
<b>Whiteflies</b>	3A	<b>*Brigade 2EC</b> (bifenthrin)	2.1–6.4 fl oz	Do not apply more than 0.2 lb active ingredient per acre per season.	7	12	Do not make applications less than 7 days apart.
	3A	<b>*Hero</b> (bifenthrin & zeta-cypermethrin)	4.5–11.2 oz	Do not apply more than 43.26 fl oz/A per season.	7	12	
	3A	<b>*Proaxis Insecticide</b> (gamma-cyhalothrin)	1.92–3.84 fl oz	Do not apply more than 2.88 pints per acre per season.	5	24	

Insect	MOA Code <sup>1</sup>	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Rate per Season	Days to Harvest	REI (Hours)	Remarks
	3A	<b>Pyganic Crop Protection EC 5.0</b> (pyrethrins)	4.5–18.0 fl oz	11.25 pints	0	12	Pyrethrins degrade rapidly in sunlight. Thorough coverage is important. OMRI-listed. Do not apply more than 10 times per season.
	3A	<b>*Warrior II</b> (lambda-cyhalothrin)	0.96–1.92 fl oz	Do not apply more than 0.36 lb a.i./acre per season.	5	24	
	4A	<b>Platinum</b> (thiamethoxam)	5.0–11.0 fl oz	Do not exceed a total of 11 fl oz Platinum/A per growing season.	30	12	For most crops that are not on the label, a 120-day plant-back interval must be observed. To manage resistance, avoid using related pesticides (Actara, Assail) in conjunction with Platinum.
	4A	<b>Platinum 75SG</b> (thiamethoxam)	1.66–3.67 oz	Do not exceed a total of 3.67 oz Platinum 75 SG/A per growing season.	30	12	
	4A	<b>Actara</b> (thiamethoxam)	2.0–5.5 oz	Maximum of 11 oz/acre per season.	0	12	Do not use if a soil application of a neonicotinoid has been used.
	4A	<b>Admire Pro</b> (imidacloprid) (for rates for other brands, see labels)	7–10.5 fl oz	Maximum 10.5 fl oz/A per crop per season.	21	12	Application restrictions exist for this product because of risk to bees and other insect pollinators. Follow application restrictions found in the directions for use to protect pollinators. Most effective if applied to soil at transplanting.
	4A	<b>Admire Pro</b> (imidacloprid)	0.44 fl oz/10,000 plants		21	12	Planthouse: 1 application. See label.
	4A	<b>Assail 30 SG</b> (acetamiprid)	1.5–4.0 oz	Do not exceed a total of 16.0 oz/A per growing season, including any pretransplant applications of acetamiprid.	7	12	Begin applications for whiteflies when first adults are noticed. Do not apply more than 4 times per season or apply more often than every 7 days.
	4A	<b>Belay 50 WDG</b> (clothianidin)	1.6–3.2 oz	Do not apply more than 6.4 oz per acre per season.	7	12	Do not use as adjuvant. Toxic to bees. Do not release irrigation water from the treated area.
	4A	<b>Belay 50 WDG</b> (clothianidin)	4.8–6.4 oz (soil application)	Do not apply more than 6.4 oz per acre per season.	Apply at planting	12	See label for application instructions. Do not release irrigation water from the treated area. Do not apply if imidacloprid or thiamethoxam have been used at planting.
	4A	<b>Scorpion 35SL Insecticide</b> (dinotefuran)	<b>Foliar:</b> 2–7 fl oz <b>Soil:</b> 9–10.5 fl oz	Do not apply more than 10.5 fl oz per acre per season as foliar sprays or more than 21 fl oz to soil.	<b>Foliar:</b> 1 <b>Soil:</b> 21	12	
	4A	<b>Venom Insecticide</b> (dinotefuran)	<b>Foliar:</b> 1–4 oz <b>Soil:</b> 5–6.0 oz	Do not apply more than 6 oz foliar or 12 oz soil per season.	<b>Foliar:</b> 1 <b>Soil:</b> 21	12	Do not use both application methods. No more than 3 applications per season.
	4A & 28	<b>Durivo</b> (thiamethoxam & chlorantraniliprole)	10–13 oz	Do not exceed a total of 13 fl oz/A.	30	12	May be applied to soil by one of several methods—see label.
	4A & 28	<b>Voliam Flexi</b> (thiamethoxam & chlorantraniliprole)	4.0–7.0 oz	Limited to 14 oz/acre per growing season.	1	12	
	4D	<b>Sivanto Prime</b> (flupyradifurone)	7.0–14.0 fl oz	Do not apply more than 28.0 fl oz/A per year.	1	4	Minimum interval between applications: 7 days.
	6 & 28	<b>*Minecto Pro</b> (abamectin & cyantraniliprole)	5.5–10 fl oz	Do not apply more than 20 fl oz per acre per year.	7	24	This label contains pollinator warnings.
	7C	<b>Knack IGR</b> (pyriproxyfen)	8–10 fl oz	Do not exceed 20 fl oz/A per season.	1	12	Apply before populations build to damaging levels. Minimum of 7 days between applications. Do not make more than two applications.
	9B	<b>Fulfill</b> (pymetrozine)	2.75 oz	Do not apply more than 5.5 oz/acre per crop.	0	12	



Insect	MOA Code <sup>1</sup>	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Rate per Season	Days to Harvest	REI (Hours)	Remarks
	9B	<b>PQZ</b> (pyrifluquinazon)	2.4–3.2 fl oz	Do not apply more than 4.8 fl oz (0.070 lb a.i.) per acre per crop cycle. Do not apply more than 9.6 fl oz (0.140 lb a.i.) per acre per year.	1	12	Do not apply by air. Do not make more than 2 applications per crop cycle. Do not make more than 4 applications per year.
	9D	<b>Sefina</b> (afidopyropen)	14 fl oz	Do not apply more than 28 fl oz of Sefina (0.09 lb afidopyropen a.i.) per acre per season.	0	12	Do not make more than 2 sequential applications of Sefina before using an effective insecticide with a different mode of action.
	15	<b>Rimon 0.83EC</b> (novaluron)	9–12 fl oz	Do not apply more than 36 fl oz per acre per season.	1	12	
	16	<b>Courier 40SC</b> (buprofezin)	9.0–13.6 fl oz	Do not apply more than 27.2 fl oz/A per crop cycle.	1	12	Immature insects only. No more than 2 applications per crop cycle.
	21A	<b>Portal</b> (fenpyroximate)	2.0 pt	Do not apply more than 4.0 pints/A per crop cycle.	1	12	Do not make more than 2 applications per season.
	23	<b>Movento</b> (spirotetramat)	4.0–5.0 fl oz	Maximum of 10 fl oz per acre per season.	1	24	
	23	<b>Oberon 2SC</b> (spiromesifen)	7.0–8.5 fl oz	Maximum amount per crop: 25.5 fl oz/acre.	7	12	No more than 3 applications.
	28	<b>Exirel</b> (cyantraniliprole)	13.5–20.5 fl oz	Do not apply a total of more than 0.4 lb a.i./A per crop.	1	12	Foliar application.
	28	<b>Verimark</b> (cyantraniliprole)	<b>Tray drench/transplant water:</b> 6.75–13.5 fl oz <b>Drip:</b> 6.75–10 fl oz	Do not apply more than 0.4 lb a.i./A per crop.	1	4	Soil application.
	-	<b>Aza-Direct</b> (azadirachtin)	1–2 pt, up to 3.5 pt if needed		0	4	Antifeedant, repellent, insect growth regulator. See label for rates for specific pests.
	-	<b>Azatin XL</b> (azadirachtin)	5–21 oz		0	4	
	-	<b>Molt-X</b> (azadirachtin)	10 fl oz		0	4	Antifeedant, repellent, insect growth regulator. OMRI-listed.
	-	<b>MET52 EC</b> ( <i>Metarhizium anisopliae</i> strain F52)	<b>Drench:</b> 40–80 fl oz <b>Foliar:</b> 0.5 pt–2 qt		0	0	Product contains live spores of a naturally occurring fungus. Some fungicides may interfere with efficacy. OMRI-listed.
	-	<b>M-Pede 49% EC</b> (soap, insecticidal)	1%–2% v/v		0	12	
	-	<b>BotaniGard ES</b> ( <i>Beauveria bassiana</i> strain GHA)	0.25–1 quart per acre. Apply in sufficient water to cover foliage, typically 5–100 gallons per acre.		0	4	May be used in greenhouses. Contact dealer for recommendations if an adjuvant may be used. Compatible in tank mixes with some fungicides.
	-	<b>Mycotrol ESO</b> ( <i>Beauveria bassiana</i> strain GHA)	0.25–1 qt		0	4	May be used in greenhouses. Contact dealer for recommendations if an adjuvant may be used. Compatible in tank mixes with some fungicides. OMRI-listed.
	-	<b>Neemix 4.5</b> (azadirachtin)	4–16 fl oz		0	12	
	-	<b>PFR-97</b> ( <i>Isaria fumosorosea</i> Apopka strain 97)	1.0–2.0 lb		0	4	OMRI-listed.
	-	<b>Requiem 25EC</b> (extract of <i>Chenopodium ambrosioides</i> )	2–4 qt		0	4	Begin applications before pests reach damaging levels.
	-	<b>SuffOil-X</b> (mineral oil)	1–2 gallons per 100 gallons of water		0	4	OMRI-listed.

Insect	MOA Code <sup>1</sup>	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Rate per Season	Days to Harvest	REI (Hours)	Remarks
	-	<b>Ultra-Fine Oil JMS Stylet-Oil Saf-T-Side</b> (oil, insecticidal)	3-6 qt/100 gal (JMS); 1-2 gal/100 gal water		0	4	Do not exceed four applications per season. Stylet-oil will not control aphids or beetles. Organic Stylet-Oil and Saf-T-Side are OMRI-listed.

<sup>1</sup> Mode of Action (MOA) codes for plant pest insecticides from the Insecticide Resistance Action Committee (IRAC) Mode of Action Classification v. 9.4 March 2020. Number codes (1 through 29) are used to distinguish the main insecticide mode of action groups, with additional letters for certain subgroups within each main group. All insecticides within the same group (with same number) indicate the same active ingredient or similar mode of action. This information must be considered for the insecticide resistance management decisions. - = unknown, or a mode of action that has not been classified yet.

<sup>2</sup> Information provided in this table applies only to Florida. Be sure to read a current product label before applying any product. The use of brand names and any mention or listing of commercial products or services in the publication does not imply endorsement by UF/IFAS Extension nor discrimination against similar products or services not mentioned. OMRI-listed: Listed by the Organic Materials Review Institute for use in organic production.

**\* Restricted use insecticide.**

**Table 8.5. Eggplant fungicides ordered by disease and then FRAC group according to their mode of action.**

Pertinent Diseases or Pathogens	Fungicide Group <sup>1</sup>	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks <sup>2</sup>
			Appl.	Season	Harvest	Reentry	
<b>Alternaria blight/Early blight</b>	M1	(copper compounds) <b>Many brands available:</b> AmeriCop 40DF, Badge SC, Badge X2, Basic Copper 53, C-O-C-S WDG, Champ DP, Champ F2 FL, Champ WG, COC WDG, COC DF, COC WP, Copper Count N, Cueva, Cuprofix Ultra 40D, Kentan DF, Kocide 3000, Kocide 2000, Kocide DF, Master Cop, Nordox, Nordox 75WG, Nu Cop 50WP, Nu Cop 3L, Nu Cop 50DF, Nu Cop HB	<b>SEE INDIVIDUAL LABELS</b>		Varies by product from 0 to 1 day	Varies by product from 4 hr to 2 days	
	M1 & M2	<b>Top Cop with Sulfur</b> (basic copper sulfate + sulfur)	2 qt			1	
	3	<b>Tebuzol Toledo</b> (tebuconazole)	<b>SEE INDIVIDUAL LABELS</b>				
	7	<b>Fontelis</b> (penhitiopyrad)	24 fl oz		0	0.5	
	7	<b>Endura</b> (boscalid)	3.5 oz		0	0.5	
	9	<b>Vango WG</b> (cyprodinil)	7 oz		0	0.5	
	9 & 3	<b>Inspire Super</b> (cyprodinil + difenoconazole)	20 fl oz		0	0.5	
	9 & 12	<b>Switch</b> (cyprodinil + fludioxonil)	14 oz		0	0.5	Follow resistance management recommendations on label.
	9 & 12	<b>Alerity 62.5</b> (cyprodinil + fludioxonil)	14 oz		0	0.5	
	11	<b>Cabrio EG</b> (pyraclostrobin)	16 oz		0	0.5	

**Labels change frequently. Be sure to read a current product label before applying any chemical. Please refer to Chapter 19 for information on biopesticides, including materials labeled for certified organic production.**

Pertinent Diseases or Pathogens	Fungicide Group <sup>1</sup>	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks <sup>2</sup>
			Appl.	Season	Harvest	Reentry	
	11	<b>Aftershock Evito 480 EC</b> (fluoxastrobin)	5.7 fl oz	22.8 fl oz	3	0.5	Do not use in greenhouse production; see label for additional instructions.
	11	<b>Flint Extra Gem</b> (trifloxystrobin)	3.0 oz	16 oz	3	0.5	
	11	<b>Reason 500 SC</b> (fenamidone)	8.2 fl oz	24.6 fl oz	14	0.5	
	7 & 11	<b>Priaxor</b> (fluxapyroxad + pyraclostrobin)	8 fl oz	24 fl oz	7	0.5	
	7 & 11	<b>Luna Sensation</b> (flupyram + trifloxystrobin)	7.6 fl oz	27.1 fl oz	3	0.5	
	7 & 12	<b>Miravis Prime</b> (fludioxonil; pydiflumetofen)	11.4 fl oz	22.8 fl oz/year	0	0.5	
	12	<b>Emblem</b> (fludioxonil)	7 fl oz	28 fl oz/A/year	0	0.5	
	19	<b>Ph-D WDG</b> (polyoxin D zinc salt)	See label	See label	0	4 hr	
	M1	<b>Oso 55C</b> (copper compounds) <b>Many brands available:</b> AmeriCop 40DF, Badge SC, Badge X2, Basic Copper 53, C-O-C-5 WDG, Champ DP, Champ F2 FL, Champ WG, C-O-C-DF, C-O-C-WP, Copper Count N, Cuprofix Ultra 40D, Cueva, Kentan DF, Kocide 3000, Kocide 2000, Kocide DF, Master Cop, Nordox, Nordox 75WG, Nu Cop 50WP, Nu Cop 3L, Nu Cop 50DF, Nu Cop HB	<b>SEE INDIVIDUAL LABELS</b>	<b>SEE INDIVIDUAL LABELS</b>	Varies by product from 0 to 1 day	Varies by product from 4 hr to 2 days	
	M1 & M2	<b>Top Cop with Sulfur</b> (copper sulfate + sulfur)	2 qt			1	
	M5	(chlorothalonil) <b>Many brands available:</b> Bravo Ultrex, Bravo Weather Stik, Chloronil 720, Echo 720, Equus 720 SST, Initiate	<b>SEE INDIVIDUAL LABELS</b>	<b>SEE INDIVIDUAL LABELS</b>	See label	0.5	
	M5 & 49	<b>Orondis Opti</b> (chlorothalonil + oxathiapiprolin)	2.5 pt	10 pt per year	3	0.5	See label.
	M5 & 27	<b>Ariston</b> (chlorothalonil + cymoxanil)	2.44 pt	17.5 pt per 12 month	3	0.5	
	3	<b>Rhyme</b> (flutriafol)	7 fl oz	28 fl oz	0	0.5	Use of silicone- or oil-based additives may result in negative crop response. In situations where an adjuvant is necessary, use of a nonionic surfactant 0.125% v/v is recommended.
	3	<b>Topguard</b> (flutriafol)	14 fl oz/A	56 fl oz	0	0.5	
	3 & 7	<b>Aprovia Top</b> (difenoconazole, benzovindiflupyr)	13.5 fl oz	53.6 fl oz per 12 month	0	0.5	
	7	<b>Fontelis</b> (penthiopyrad)	24 fl oz	72 fl oz	0	See label	Disease suppression only.
	9 & 3	<b>Inspire Super</b> (cyprodinil + difenoconazole)	20 fl oz	47 fl oz	7	0.5	
	11	<b>Cabrio EG</b> (pyraclostrobin)	16 oz	96 oz	0	0.5	

Pertinent Diseases or Pathogens	Fungicide Group <sup>1</sup>	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks <sup>2</sup>
			Appl.	Season	Harvest	Reentry	
Phomopsis blight	11	<b>Flint Extra Gem</b> (trifloxystrobin)	3.0 oz	16 oz	3	0.5	
	11	(azoxystrobin) <b>Many brands available:</b> Quadris, Aframe, Azoxystar, Azixystrobin, Azoxyzone, Equation, Heritage, Satori, Trevo, Willowood Azoxy	15.5 fl oz	61.5 fl oz	0	4 hr	See individual labels.
	11 & 3	<b>Quadris Top</b> (azoxystrobin + difenoconazole)	14 fl oz	55.3 fl oz	0	0.5	
	11 & 3	<b>TopGuard EQ</b> (azoxystrobin + flutiafol)	8 fl oz	32 fl oz	0	0.5	
	7 & 11	<b>Luna Sensation</b> (fluopyram + trifloxystrobin)	7.6 fl oz	27.1 fl oz	3	0.5	
	7 & 11	<b>Priaxor</b> (fluxapyroxad + pyraclostrobin)	8 fl oz	24 fl oz	7	0.5	
	19	<b>Ph-D</b> (polyoxin D zinc salt) (copper compounds) <b>Many brands available:</b> Americop 40DF, Badge SC, Badge X2, Basic Copper 53, C-O-C-5 WDG, Champ DP, Champ F2, FL, Champ WG, C-O-C DF, C-O-C WP, Copper Count N, Cuprofix Ultra 40D, Kentan DF, Kocide 3000, Kocide 2000, Kocide DF, Master Cop, Nordox, Nordox 75WG, Nu Cop 50WP, Nu Cop 3L, Nu Cop 50DF, Nu Cop HB	6.2 oz	See label	0	4 hr	Disease suppression only.
	M1	<b>Top Cop with Sulfur</b> (copper sulfate + sulfur)	<b>SEE INDIVIDUAL LABELS</b>		Varies by product from 0 to 1 day	Varies by product from 4 hr to 2 days	
	M1 & M2	(sulfur) <b>Many brands available:</b> Cosavet DF, Kumulus DF Fungicide-Acaricide, Micro Sulf, Microfine Sulfur, Microthiol Disperss, Sulfia, Sulfur 90 W/ Yellow Jacket Wettable Sulfur	2 qt			1	
	M2	(chlorothalonil) <b>Many brands available:</b> Bravo Ultrex, Bravo Weather Stik, Chloronil 720, Echo 720, Equus 720 SST, Initiate	<b>SEE INDIVIDUAL LABELS</b>		1	1	
	M5	(chlorothalonil + cymoxanil) <b>Many brands available:</b> Bravo Ultrex, Bravo Weather Stik, Chloronil 720, Echo 720, Equus 720 SST, Initiate	<b>SEE INDIVIDUAL LABELS</b>			0.5	
	M5 & 27	<b>Ariston</b> (chlorothalonil + cymoxanil)	2.44 pt	17.5 pt per 12 month	3	0.5	
	M5 & 49	<b>Orondis Opti</b> (chlorothalonil + oxathiapiprolin)	2.5 pt	10 pt per year	3	0.5	See label.
	3	<b>Rally 40WSP</b> <b>Sonoma 40WSP</b> (myclobutanil)	<b>SEE INDIVIDUAL LABELS</b>		0	1	
	3	<b>Mettle 125ME</b> (tetraconazole)	8 fl oz	16 fl oz/A/year	7	0.5	
	3	<b>Topguard</b> (flutriafol)	14 fl oz	56 fl oz	0	0.5	
	3	<b>Rhyme</b> (flutriafol)	7 fl oz	28 fl oz	0	12	Use of silicone- or oil-based additives may result in negative crop response. In situations where an adjuvant is necessary, use of a nonionic surfactant 0.125% v/v is recommended.
	3 & 7	<b>Aprovia Top</b> (difenoconazole, benzovindiflupyr)	13.5 fl oz	53.6 fl oz per 12 month	0	0.5	

Pertinent Diseases or Pathogens	Fungicide Group <sup>1</sup>	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks <sup>2</sup>
			Appl.	Season	Harvest	Reentry	
	7	<b>Fontelis</b> (penthioopyrad)	24 fl oz	72 fl oz	0	0.5	
	7 & 11	<b>Luna Sensation</b> (fluopyram + trifloxystrobin)	7.6 fl oz	27.1 fl oz	3	0.5	
	7 & 11	<b>Priaxor</b> (fluxapyroxad + pyraclostrobin)	8 fl oz	24 fl oz	7	0.5	
	7 & 12	<b>Miravis Prime</b> (fludioxonil; pydiflumetofen)	11.4 fl oz	22.8 fl oz/year	0	0.5	
	9	<b>Vango WG</b> (cyprodinil)	7 oz	28 oz	0	0.5	
	9 & 3	<b>Inspire Super</b> (cyprodinil + difenoconazole)	20 fl oz	47 fl oz	0	0.5	
	9 & 12	<b>Switch</b> <b>Alerity 62.5WG</b> (cyprodinil + fludioxonil)	14 oz	56 oz	0	0.5	Follow resistance management recommendations on label.
	11	<b>Cabrio EG</b> (pyraclostrobin)	16 oz	96 oz	0	0.5	
	11	(azoxystrobin) <b>Many brands available:</b> Quadris, Aframe, Azoxystar, Azixystrobin, Azoxyzone, Equation, Heritage, Satori, Trevo, Willowood Azoxy					See individual labels.
	11 & 3	<b>Quadris Top</b> (azoxystrobin + difenoconazole)	14 fl oz	55.3 fl oz	0	0.5	
	11 & 3	<b>TopGuard EQ</b> (azoxystrobin + flutiafol)	8 fl oz	32 fl oz	0	0.5	
	12	<b>Emblem</b> (fludioxonil)	7 fl oz	28 fl oz/A/year	0	0.5	
	13	<b>Quintec</b> (quinoxifen)	6 fl oz	24 fl oz	3	0.5	See label.
	19	<b>Ph-D WDG</b> (polyoxin D zinc salt)	6.2 oz	See label	0	4 hr	
	50	<b>Vivando</b> (metrafenone)	15.4 fl oz	46.2 fl oz	0	0.5	Apply prior to symptoms of powdery mildew.
<b>Damping off</b> (Pythium, Rhizoctonia and other seed-borne and soilborne fungi)	M3	<b>Signet 480FS</b> <b>42-5 Thiram</b> (thiram)	6.5 fl oz/100 lb seed			1	
	4	(mefenoxam) <b>Many brands available:</b> Apron XL, Ridomil Gold SL, Ridomil Gold EC, Ultra Flourish	<b>SEE INDIVIDUAL LABELS</b>			2	
	4	(metalaxyl) <b>Many brands available:</b> Acquire, Allegiance FL, Metastar 2E, Sebring 2.65 ST, Sebring 318 FS, Sebring 480 FS	<b>SEE INDIVIDUAL LABELS</b>				
	11	<b>Dynasty</b> (azoxystrobin)	0.38 fl oz/100 lb seed			4 hr	
	11	(azoxystrobin) <b>Many brands available:</b> Quadris, Aframe, Azoxystar, Azixystrobin, Azoxyzone, Equation, Heritage, Satori, Trevo, Willowood Azoxy	See label		0	4 hr	For Rhizoctonia seedling rot
	7 & 11	<b>Priaxor</b> (fluxapyroxad + pyraclostrobin)	8 fl oz	24 fl oz	7	0.5	

Pertinent Diseases or Pathogens	Fungicide Group <sup>1</sup>	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks <sup>2</sup>	
			Appl.	Season	Harvest	Reentry		
Crown rot ( <i>Phytophthora capsici</i> )	12	<b>Maxim 4 FS</b> <b>Spirato 480 FS</b> <b>Dynashield</b> (fludioxonil)	0.16 fl oz/100 lb seed			0.5	See individual labels.	
	4	<b>Metastar 2E AG</b> (metalaxyl)	8 pt	12 pt	7	2	See label for specific instructions.	
	4	<b>Ridomil Gold SL</b> <b>Ridomil Gold EC</b> <b>Ultra Flourish</b> (mefenoxam)	<b>SEE INDIVIDUAL LABELS</b>					
	4	<b>Orondis Gold B</b> (mefenoxam)	1 pt	1.5 lb a.i./A	7	2	See label; suppression.	
	40 & 45	<b>Zampro</b> (dimethomorph + ametoctradin)	14 fl oz	42 fl oz	4		See label.	
	49	<b>Orondis Gold</b> (oxathiapiprolin)	9.6 fl oz	19.2 fl oz per year	0	4 hr	Apply at transplant; see label.	
	M1	(copper compounds) <b>Many brands available:</b> Badge SC, Badge X2, Cueva, C-O-C WDG	<b>SEE INDIVIDUAL LABELS</b>					
	11	<b>Aftershock</b> <b>Evito 480 EC</b> (fluoxastrobin)	5.7 fl oz	22.8 fl oz	3	0.5	For disease suppression only. Do not use in greenhouse production.	
	11	<b>Cabrio EG</b> (pyraclostrobin)	16 oz	96 oz	0	0.5		
	11	<b>Flint Gem</b> (trifloxystrobin)	3.0 oz	16 oz	3	0.5		
	11	<b>Reason 500 SC</b> (fenamidone)	8.2 fl oz	24.6 fl oz	14	0.5	Disease suppression only.	
	7 & 11	<b>Priaxor</b> (fluxapyroxad + pyraclostrobin)	8 fl oz	24 fl oz	7	0.5	Disease suppression only.	
21	<b>Ranman</b> (cyazofamid)	2.75 fl oz	16.5 fl oz	0	0.5			
22	<b>Elumin</b> (ethaboxam)	8 fl oz	16 fl oz	2	0.5	See label.		
29	<b>Omega 500F</b> (fluzinam)	1.5 pt	9 pt	12	30			
33	(phosphites) <b>Many brands and formulations:</b> Confine Extra, Fosphite, Fungi-Phite, K-Phite, Rampart	<b>SEE INDIVIDUAL LABELS</b>						
40	<b>Forum</b> (dimethomorph)	6 oz	30 oz	0	0.5			
40	<b>Revus</b> (mandipropamid)	8 fl oz	32 fl oz per season	1	4 hr	Disease suppression only.		
40	<b>Orondis Ultra B</b> (mandipropamid)	1 pt	1.5 lb a.i.	7	2			
40 & 45	<b>Zampro</b> (dimethomorph + ametoctradin)	14 fl oz	42 fl oz	4		See label.		
43	<b>Presidio</b> (fluopicolide)	4 fl oz	12 fl oz	2	0.5			



Pertinent Diseases or Pathogens	Fungicide Group <sup>1</sup>	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks <sup>2</sup>	
			Appl.	Season	Harvest	Reentry		
Gray leaf spot ( <i>Stemphylium</i> )	49 & 40	<b>Orondis Ultra</b> (oxathiapiprolin + manipropamid)	8 fl oz	32 fl oz/A/yr	1	4 hr	See label.	
	49	<b>Orondis Ultra A</b> (oxathiapiprolin)	9.6 fl oz	19.2 fl oz	0	4 hr	Apply at transplant; see label.	
	3 & 9	<b>Inspire Super</b> (cyprodinil + difenoconazole)	20 fl oz	47 fl oz	0	0.5		
	3 & 4	<b>Aprovia Top</b> (difenoconazole, benzovindiflupyr)	13.5 fl oz	53.6 fl oz per 12 month	0	0.5		
	7 & 11	<b>Luna Sensation</b> (fluopyram + trifloxystrobin)	7.6 fl oz	27.1 fl oz	3	0.5		
	7 & 12	<b>Miravis Prime</b> (fludioxonil; pydiflumetofen)	11.4 fl oz/A	22.8 fl oz/year	0	0.5		
	11	<b>Flint Extra Gem</b> (trifloxystrobin)	3.0 oz	16 oz	3	0.5		
	11 & 3	<b>Quadris Top</b> (azoxystrobin + difenoconazole)	14 fl oz	55.3 fl oz	0	0.5		
	M1	<b>Cueva</b> (copper octanoate)	SEE LABEL					
	7	<b>Fontelis</b> (penthiopyrad)	24 fl oz	72 fl oz	0	0.5		
	7 & 11	<b>Luna Sensation</b> (fluopyram + trifloxystrobin)	7.6 fl oz	27.1 fl oz	3	0.5		
7 & 11	<b>Priaxor</b> (fluxapyroxad + pyraclostrobin)	8 fl oz	24 fl oz	7	0.5			
7 & 12	<b>Miravis Prime</b> (fludioxonil; pydiflumetofen)	11.4 fl oz	22.8 fl oz/year	0	0.5			
9 & 3	<b>Inspire Super</b> (cyprodinil + difenoconazole)	20 fl oz	47 fl oz	0	0.5			
11	<b>Cabrio EG</b> (pyraclostrobin)	16 oz	96 oz	0	0.5			
11	<b>Flint Extra Gem</b> (trifloxystrobin)	3.0 oz	16 oz	3	0.5	Disease suppression only. See individual labels.		
11	<b>Reason 500 SC</b> (fenamidone)	8.2 fl oz	24.6 fl oz	14	0.5	Disease suppression only.		
<b>Botrytis gray mold</b>	9	<b>Vango WG</b> (cyprodinil)	7 oz	28 oz	0	0.5		
	9	<b>Alerity 62.5WG</b> (cyprodinil)	7 oz	14 oz	0	0.5		
<b>White mold</b>	7 & 11	<b>Luna Sensation</b> (fluopyram + trifloxystrobin)	7.6 fl oz	27.1 fl oz	3	0.5	Disease suppression only.	
<b>Sclerotinia</b>	7 & 11	<b>Priaxor</b> (fluxapyroxad + pyraclostrobin)	8 fl oz	24 fl oz	7	0.5		

<sup>1</sup> FRAC code (fungicide group); Number (1 through 46) and letters (U and P) are used to distinguish the fungicide mode of action groups. All fungicides within the same group (with same number or letter) indicate the same active ingredient or similar mode of action. This information must be considered for the fungicide resistance management decisions. U = unknown, or a mode of action that has not been classified yet and is typically associated with another number; P = host plant defense inducers. Source: FRAC Code List 2019; <http://www.frac.info/> (FRAC = Fungicide Resistance Action Committee).

<sup>2</sup> Information provided in this table applies only to Florida. Be sure to read a current product label before applying any chemical. The use of brand names and any mention or listing of commercial products or services in the publication does not imply endorsement by UF/IFAS Extension nor discrimination against similar products or services not mentioned.

Table 8.6. Nonfumigant nematicides for eggplants in Florida.

Product	Application Directions
Vydate L (a.i. oxamyl)	Apply ½ to 1 gal/acre at planting, preferably via drip application. Make additional applications on a 10-to-14-day interval. Do not apply more than 3 gal per acre per season. Minimum retreatment interval is 7 days unless a longer interval is stated. Do not make more than 8 applications per season.
Nimitz (a.i. fluensulfone)	All applications must be incorporated either physically or via drip or overhead irrigation. Make preplant applications at a rate of 3.5 to 7 pints (56.0 to 80.0 fl oz) per acre, a minimum of seven days before planting. Do not plant any unlisted crops into treated land for 365 days after application of the product. Do not apply more than one application per crop and no more than 112 fl oz of product per acre per year (365 days). Provides control only for nematodes. Growers applying Nimitz must consult the product label to observe the plant-back (recropping) intervals for a variety of leafy vegetables and brassica crops, onions, bananas, sugarcane, and other crops.
Velum (a.i. fluopyram)	Apply max 6.84 fl oz/acre using only chemigation into root-zone through low-pressure drip, trickle, microsprinkler, or equivalent equipment. Observe minimum 5-day interval between soil applications. Do not apply more than 13.7 fl oz of Velum (0.446 lb Fluopyram) per acre per year, regardless of formulation (Velum and/or Luna) or method of application (soil or foliar). For soil application, to limit the potential for development of disease resistance to this chemical class, the first foliar fungicide application after Velum should be a product from a different FRAC group.

Vydate is an insecticide/nematicide; Velum is a fungicide/nematicide; Nimitz is a true nematicide. Unlike fumigants, these products are not volatile and will move through the soil via water; depending on the water solubility, these products will have different recommendations as far as how to best apply them (see specific label recommendations); when nematode pressure is high, they may not be as consistently effective against root nematodes as the fumigants.

Table 8.7. Fumigant nematicides for eggplants in Florida.

Nematicide	Broadcast Application <sup>1</sup>		In-the-Row Applications
	Gallons or lb per Acre	fl oz/1000 ft/ chisel-spaced 12" apart	
Telone II <sup>2,3</sup>	9 to 12 gal	26 to 35	For any row spacing, application rates given may be concentrated in the row but shall never exceed the labeled maximum for broadcast applications. Consult the product label for additional detail.
Telone C-17 <sup>2,3</sup>	10.8 to 17.1 gal	31.8 to 50.2	For any row spacing, application rates given may be concentrated in the row but shall never exceed the labeled maximum for broadcast applications. Consult the product label for additional detail.
Telone C-35 <sup>2,3</sup>	13 to 20.5 gal	38 to 60	For any row spacing, application rates given may be concentrated in the row but shall never exceed labeled maximum for broadcast applications. Consult the product label for additional detail.
Telone InLine <sup>2,3</sup>	13 to 20.5 gal	-	For drip fumigation, consult the product label for overall rate, drip concentration, and flow-modifying application directions.
Pic Clor 60 <sup>2,3</sup>	19.5 to 31.5 gal	57 to 90	Consult product label for overall rate and chisel flow-modifying application directions.
Pic Clor 60 EC <sup>2,3</sup>	19.5 to 31.5 gal	-	For drip fumigation, consult product label for proportionately reduced overall rates, drip concentration, and drip flow-modifying directions and procedures.
Vapam HL	75 gal	-	For drip or in-row fumigation and crop termination, consult product label for proportionately reduced overall rates, drip concentration, and flow-modifying directions and procedures.
KPam HL	60 gal	-	For drip or in-row fumigation and crop termination, consult product label for proportionately reduced overall rates, drip concentration, and flow-modifying directions.
Allyl Isothiocyanate (AITC) Dominus	40 gal	-	For drip or in-row fumigation and crop termination, consult product label for overall rates, drip concentration, and flow-modifying directions

<sup>1</sup>Gallons/acre and fl oz/1000 feet provided only for mineral soils. Higher rates may be possible for heavier-textured (loam, silt, clay) or highly organic soils.  
<sup>2</sup>All of the fumigants mentioned are for retail sale and use only by state-certified applicators or persons under their direct supervision. New supplemental labeling for the Telone products must be in the hands of the user at the time of application. See label details for additional use restrictions based on soil characteristics, buffer zones, requirements for personal protective equipment (PPE), mandatory good agricultural practices (GAPs), product and applicator training certification, and rate-modifying recommendations with use of highly retentive Totally Impermeable mulch films (TIF).  
<sup>3</sup>Higher application rates are possible in the presence of cyst-forming nematodes.

Rates are believed to be correct for products named, and similar products of other brand names, when applied to mineral soils. Higher rates are required for muck (organic) soils. However, the **grower** has the final responsibility to see that each product is used legally; **read the label** of the product to be sure that you are using it properly.