

Chapter 11. Legume Production¹

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Botany and Planting

Cluster bean/Guar—*Cyamopsis tetragonolobus*

Edamame—*Glycine max*

Fenugreek/Methi—*Trigonella foenum-gracum*

Hyacinth bean/Lablab bean—*Lablab purpureus*

Lima bean—*Phaseolus lunatus*

Pigeon pea—*Cajanus cajan*

Snapbean—*Phaseolus vulgaris*, Fabaceae (Leguminosae)

Snowpea—*Pisum sativum*

Southernpea/Yard-long bean—*Vigna unguiculata*

Winged bean—*Psophocarpus tetragonolobus*

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Table 1. Planting information for legumes.

Planting Dates	Snapbean Bush	Snapbean Pole	Lima Bean Bush	Lima Bean Pole	Southern Pea	Snowpea
North Florida	Mar–Apr Aug–Sept	Mar–Apr Aug–Sept	Mar–Apr Aug	Mar–Apr Aug	Mar–July	Jan–Mar
Central Florida	Feb–Apr Aug–Sept	Feb–Apr Aug–Sept	Feb–Mar Aug–Sept	Feb–Mar Aug–Sept	Feb–Aug	Nov–Feb
South Florida	Sept–Apr	Sept–Apr	Sept–Apr	Sept–Apr	Sept–Apr	Nov–Feb
Planting Information						
Distance between rows (in)	18–40	36–48	18–36	36–48	20–42	36, 2-row beds
Number of rows/bed	1–2					
Distance between rows/bed (in)	10–12					
Distance between plants (in)	2–4	3–5	3–6	8–12	2–6	2–6
Seeding depth (in)	1–1.5	1–1.5	1–1.5	1–1.5	1–1.5	1–1.5
Seed per acre (lb)	45–80	30–45	40–60	20–40	15–30	25–50
Days to maturity from seed	45–60	50–70	60–80	80–100	75–90	60–80
Plant populations	52,272–172,240	58,000	116,160	21,780	104,544	87,120

Cultivars

Table 2. Commercial legume cultivars.

Green Bush			Yellow Bush	Green Pole	Lima
Southern Pea			Snowpea		
Affirmed	Greencrop	PV 857	Carson	Dade	Bridgeton
BA 0958	Jackson	PV 959	Golden Rod	Macaslan	Fordhook 242
Caprice	LaSalle	Sybaris (BA 1007)	Gold Strike		Jackson Wonder
Coyote	Momentum	Valentino	SV 1003		Thorogreen
Desoto	PV 575				
CA Blackeye No.5	Pinkeye Purplehull	Top Pick Pinkeye	Oregon Sugarpod II		
Cream 8	Quickpick	White Acre			
Cream 12	Texas Cream 40	Zipper Cream			
Coronet Pinkeye	Top Pick Cream				
Knuckle Purplehull	Top Pick Crowder				

Asian Legumes

The Asian legume group includes fruits (usually known as pods), which are eaten at the immature stage with edible immature seeds (green shell) and some young leaves and stem tips. For instance, the winged bean has edible leaves and roots, though the latter are rarely cultivated commercially in the continental United States. Pole bean, long (or yard long) bean (both dark- and light-green colors), broad bean, and lablab beans are commercially grown in south Florida. All the pole or indeterminate types can be grown on raised beds with or without plastic mulch using drip, overhead, or subsurface irrigation. Fenugreek does not grow well in rocky soils, such as those found in Miami-Dade County. Pigeon peas are a semi perennial shrub in warmer areas. Many pigeon pea and winged bean varieties are short day and only flower during the fall. There are

some day-neutral varieties available for both crops. Many edamame varieties are sensitive to daytime length, so care must be taken to select varieties for one's growing area. Japanese varieties are classified as "summer" or "fall" types, indicating when they flower. Fertilizer recommendations for pole, long, or broad beans are generally applicable to this group. All of these crops start from seed, though winged beans require scarification prior to planting. All the indeterminate types need some kind of support, ranging from individual bamboo stakes to trellises. However, some bush-type broad beans (Indian type) do not need trellises. For pest control products, these crops are included in the legume crop chapter.

The following tables list registered pesticides that should be integrated with other pest management methods.

Additional information on integrated management methods can be requested from UF/IFAS Extension horticulture or agriculture agents. A list of local UF/IFAS Extension offices is available at <https://sfyl.ifas.ufl.edu/find-your-local-office/>.

Table 3. Planting information for Asian legumes.

Planting Dates	Cluster Bean/Guar	Edamame	Fenugreek	Hyacinth Bean
North Florida	Mar–Apr; Aug	Mar–Apr; Aug	Mar–Apr; Aug	Mar–Apr; Aug
Central Florida	Feb–Mar; Aug–Sept	Feb–Mar; Aug–Sept	Feb–Mar; Aug–Sept	Feb–Mar; Aug–Sept
South Florida	Sept–Apr	Sept–Apr	Sept–Apr	Sept–Apr
Planting Information				
Distance between rows (in)	24	20–30	9	20
Distance between plants (in)	6	2–6	2–3	4–6
Seeding depth (in)	1–1.5	1–1.5	1–1.5	1–1.5
Days to maturity from seed	90–120	80–120	90–120	90–120
Plant populations	43,560	87,120	348,480	78,409
Planting Dates	Pigeon Pea	Snowpea	Winged Bean	Yard-long Bean
North Florida	Not recommended	Jan–Mar	Not recommended	Mar–July
Central Florida	Not recommended	Nov–Feb	Not recommended	Feb–Aug
South Florida	Nov–Feb	Nov–Feb	Mar–Apr	Sept–Apr
Planting Information				
Distance between rows (in)	24–36	36, 2-row beds	36	20–42
Distance between plants (in)	2–6	2–6	8	2–6
Seeding depth (in)	1–1.5	1–1.5	1–1.5	1–1.5
Days to maturity from seed	180 (early); 270–365 (late)	60–80	90 (day-neutral varieties)	75–90
Plant populations	10,890	87,120	21,780	104,544

Table 4. Cultivars for Asian legumes.

Crop	Life Cycle	Cultivars	Trellising
Broad bean	Annual		Yes
Bush-type broad bean	Annual	Indian type	No
Cluster bean, Guar	Annual		Yes
Edamame	Annual	Green Legend, Lucky Lion, Tohya, Triple Play	No
Fenugreek, Methi	Annual		No
Hyacinth bean, Lablab bean	Annual	Akahana Fugimame, Asia Purple, Asia White	No
Long bean (dark- and light-green color)	Annual		Yes
Pigeon pea (a short-lived perennial)	Short-lived perennial		No
Snow/snap (edible podded) pea	Annual	Oregon Sugarpod II	Yes
Winged bean, Goa bean	Annual	Winged Bean, Youdou	Yes
Yard-long bean	Annual	Bia-long, Orient Wonder, Stickless Wonder	Yes

Table 5. Herbicides approved for managing weeds in beans and peas. Contact: Peter J. Dittmar, UF/IFAS Department of Horticultural Sciences, Gainesville.

Active Ingredient lb a.i./Acre	Trade Name Product/Acre	MOA Code	Crops	Weeds Controlled/Remarks
Labels change frequently. Be sure to read a current product label before applying any chemical.				
*** PREEMERGENCE ***				
Carfentrazone up to 0.031	(Aim) 2.0 EC up to 2 fl oz	14	Bean (all), pea (all)	Apply as a preplant burndown for emerged broadleaf weeds. Use crop oil concentrate, methylated seed oil, or nonionic surfactant at recommended rates. Maximum rate of 0.096 lb a.i./A per season. No pretransplant interval.
EPTC 2.0–4.0	(Eptam) 7E 2.25–4.5 pt	8	Bean (green, dry)	Broadleaf and nutsedge weeds. Incorporate in the same operation to reduce volatilization. Do not exceed 9 pt/A per crop.
Fomesafen 0.25–0.38	(Reflex) 2 EC 1.0–1.5 pt	14	Bean (dry, snap)	Annual broadleaf and grass weeds and nutsedge. Not for use in Miami-Dade County. Do not apply more than 1.5 pt/A per year.
Glyphosate	(various formulations) consult labels	9	Bean (all), pea (all)	Emerged broadleaf and grass weeds. Consult individual labels for restrictions.
Halosulfuron 0.02	(Sandea) 75 DF 0.5 oz	2	Bean (black-eyed, cowpea, southern pea)	Broadleaf weeds and nutsedge. Apply after planting but before crop emergence. May cause significant, temporary stunting and delayed maturity of peas, resulting in delayed harvest.
Imazethapyr 0.02	(Pursuit) 2 L 1.5 fl oz	2	Bean (snap)	Only 1 application a year. Preplant incorporate within 1 week of planting or preemergence application within 1 week of planting or preemergence application within 1 day after planting. PHI 3 days.
Imazethapyr 0.05	(Pursuit) 2 L 3.0 fl oz	2	Bean (dry, lima, southern pea, cowpea), pea (dry, English), chickpea	Only 1 application a year. Preplant incorporate within 1 week of planting or preemergence application within 1 day after planting. Can apply up to 4 oz/A to southern pea only. Consult label for preharvest interval.
Paraquat 0.5–1.0	(Gramoxone) 2 SL 2–4 pt (Firestorm) 3 SL 1.3–2.7 pt.	22	Bean (lima, snap), pea (all)	Emerged weeds. Apply prior, during, or after planting, but before crop emergence. Only 3 applications a season. Use a nonionic surfactant.
Pelargonic acid	(Scythe) 4.2 EC 3%–10% v/v	27	Bean (all), pea (all)	Emerged weeds. Apply before crop emergence. Product is a contact, nonselective, foliar-applied herbicide.
Pendimethalin 0.5–0.75	(Prowl) 3.3 EC 1.2–1.8 pt (Prowl H2O) 3.8 1.0–1.5 pt	3	Bean (dry, lima, snap, garbanzo), Bean (southern pea, cowpea), chickpea	Annual broadleaf and grass weeds. Incorporate 1–2 inches deep within 7 days of application.
Pyraflufen ethyl 0.0008–0.003	(ET Herbicide/ Defoliant) 0.5–2.0 fl. oz	14	Bean (all), pea (all)	Emerged broadleaf and grass weeds. Plant 1 day after application. Apply as a preplant burndown treatment.
Saflufenacil 0.027	(Sharpen) 3.42 SL 1.0 fl oz	14	Bean (garbanzo), bean (dry, chickpea)	Broadleaf weeds. Apply as a preplant/preemergence burndown. Sequential application can be applied within 14 days between timings. Do not apply more than 2 fl oz/A per season.
S-metolachlor 0.95–1.27	(Brawl, Dual Magnum) 7.62 EC 1.0–1.33 pt	15	Bean (lima, mung, pinto, snap), bean (southern pea), pea (English)	Annual broadleaf and grass weeds and yellow nutsedge. Consult label for rate based on soil type and specific tank mix directions.
Sulfentrazone 0.07–0.09	(Willowood sulfentrazone) 4 SC 2.25–3.0 fl oz	14	Bean and pea (dry shelled)	Broadleaf and grass weed control, nutsedge suppression. Do not apply on sands with less than 1% organic matter. Do not apply more than 8 fl oz/A within a 12-month period. Trial on a small area.

Active Ingredient lb a.i./Acre	Trade Name Product/Acre	MOA Code	Crops	Weeds Controlled/Remarks
Labels change frequently. Be sure to read a current product label before applying any chemical.				
*** PREEMERGENCE ***				
Sulfentrazone 0.07–0.12	(Willowood sulfentrazone) 4 SC 2.25–3.75 fl oz	14	Succulent pea	Broadleaf and grass weed. Nutsedge suppression. Do not apply on sands with less than 1% organic matter. Do not apply more than 6 fl oz/A within a 12-month period. Trial on a small area.
Trifluralin 0.5–0.75	(Treflan, Trust) 4 EC 1.0–1.5 pt (Treflan, Trifluralin) 10 G 5.0–7.5 lb	3	Bean (lima, mung, guar, snap), bean (southern pea), pea (dry, English)	Annual broadleaf and grass weeds. Incorporate 4 inches or less within 8 hr. Results in Florida are erratic on soils with low organic matter and clay content. Consult label for rotation restrictions.
POSTEMERGENCE				
Bentazon 0.5–1.0	(Basagran) 4 L 1.0–2.0 pt	6	Bean (dry, succulent), bean (southern pea), pea (garden, English)	Broadleaf weeds. Apply after the first trifoliate leaf is fully expanded in bean and 3 pairs of leaves in pea. Yellowing, bronzing, speckling, or leaf burning may occur under certain conditions. This injury is generally outgrown without delaying pod set or maturity. PHI 30 days.
Carfentrazone Up to 0.031	(Aim) 2 EC up to 2 fl oz	14	Bean (all), pea (all)	Emerged broadleaf control. Direct application to row middles. Include crop oil concentrate or nonionic surfactant in recommended rates. PHI 0 days.
Clethodim 0.094–0.25 0.07–0.25	(Arrow) 2 EC 6–16 fl oz (Select Max) 1 EC 9–32 fl oz	1	Bean (succulent), pea (succulent)	Annual and perennial grass control. Consult label for bean types. PHI 21 days.
EPTC 3.1–4.0	(Eptam) 7 E 3.5–4.5 pt	8	Bean (green, dry)	Broadleaf and nutsedge weeds. Apply as layby treatment during the last cultivation of the season. Direct spray solution to the base of the crop. Do not exceed 9 pt/A per crop.
Fluazifop 0.19–0.38	(Fusilade DX) 2 EC 12–24 fl oz	1	Bean (dry)	Annual and perennial grass weeds. Do not apply to cowpea. Do not apply more than 48 fl oz/A per season. Include a COC or NIS in the spray solution. PHI 60 days.
Fomesafen 0.25–0.38	(Reflex) 2 EC 1.0–1.5 pt	14	Bean (dry, snap)	Annual broadleaf and grass weeds and nutsedge. Not for use in Miami-Dade County. Consult label for rate based on size of specific weed species. Do not apply more than 1.5 pt/A per year.
Halosulfuron 0.02–0.03	(Sanda) 75 DF 0.5–0.66 oz	2	Bean (dry)	Broadleaf weeds and nutsedge. Row middles only. Avoid contact with planted crop. Do not apply more than 1 oz/A per crop.
Halosulfuron 0.02–0.03	(Sanda) 75 DF 0.5–0.66 oz	2	Bean (snap, lima)	Broadleaf weeds and nutsedge. Directed sprays. Apply after the 2–4 trifoliate leaf stage, but before flowering.
Imazethapyr 0.14	(Pursuit) 2 L 3.0 oz	2	Bean (dry), bean (southern pea), pea (dry, English)	Do not apply before bean has at least 1 trifoliate leaf. Apply to peas at least 3 inches in height, but prior to the fifth node and before flowering. Consult label for preharvest intervals.
Pelargonicacid	(Scythe) 4.2 EC 3%–10% v/v	27	Bean (all), pea (all)	Emerged weeds, row middles only. Use a shielded sprayer directed to the row middles to reduce drift to the crop.
Quizalofop 0.04–0.08	(Assure II) 6–12 fl oz	1	Bean (snap, dry), pea (succulent, dry)	Annual and perennial grass weeds. Allow 7 days between sequential applications to allow for regrowth. Include a COC or NIS in the spray solution. PHI 30 days for succulent pea and dry bean. PHI 60 days for dry pea.
Sethoxydim 0.19–0.47	(Poast) 1.5 EC 1.0–2.5 pt	1	Bean (dry, succulent), pea (dry, succulent)	Growing grass weeds. Do not exceed 4.0 pt/A per season. Include a COC in the spray solution. PHI 30 days for dry bean and dry pea. PHI days for succulent bean and succulent pea.

Table 6. Insecticides approved for managing insect pests of beans and peas. Contact: Anna Meszaros, UF/IFAS Extension Palm Beach County.

Insect or Mite Pest	MOA Code ¹	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Max Rate Product per Season	REI (Hours)	Days to Harvest	Remarks ²
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.							
Aphids	1A	*Lannate LV; *SP (methomyl)	LV: 1.50–3 pt SP: 0.25–1.0 lb	LV: 15 pt SP: 5.0 lb	48	See label; varies with rate and crop use.	
	1B	*Dibrom 8E (naled)	1.0 pt	4.5 pt	48	1	Ground application only; not for cowpeas and fieldpeas intended for livestock feed.
	1B	Dimethoate 4EC (dimethoate)	0.5–1.0 pt	2.0 pt per year	48	Mechanical harvesting: 0	Do not use on field peas.
	1B	Malathion 8F (malathion)	1.0 pt	2.0 pt	12	3	Green and dried peas only. Do not graze or feed forage to livestock.
	1B	Orthene 97 (acephate)	0.50–1.0 lb	2.0 lb a.i.	24	Dry succulent: 14 Lima beans succulent form: 1	Do not apply to succulent beans for fresh market or processing. Do not feed treated vines or seeds to livestock.
	3A	*Asana XL (esfenvalerate)	5.8–9.6 fl oz	38.4 fl oz	12	Snap: 3 Dry beans and peas: 21	Do not feed or graze livestock on treated vines.
	3A	*Brigade 2 EC (bifenthrin)	2.1–6.4 fl oz	Succulent: 12.8 fl oz Dry: 19.2 fl oz	12	Succulent: 3 Dry: 14	
	3A	PyGanic 5.0 (pyrethrins)	4.5–17 fl oz	10 applications	12	0	OMRI-listed. ² Treat when insects first appear.
	4A	Admire Pro (imidacloprid)	Soil: 7–10.5 fl oz Foliar: 1.2 fl oz	Soil: 10.5 fl oz Foliar: 3.6 fl oz	12	Soil: 21 Foliar: 7	Do not apply to both soil and foliage. Do not use other 4A insecticides if imidacloprid is used.
	4A	Assail 30SG (acetamidprid)	2.5–5.3 fl oz	16 fl oz	12	7	Edible podded legumes, succulent shelled peas and beans.
	4A	Transform WG (sulfoxaflor)	0.75–1.0 oz	8.5 oz	24	7	Succulent, edible podded, and dry beans.
	4A + 15	Cormoran (novaluron + acetamiprid)	9–12 fl oz	36 fl oz	12	7	
	4D	Sivanto Prime (flupyradifurone)	7.0–10.5 fl oz	28.0 fl oz per year	4	7	Minimum interval between applications: 10 days.
	23	Movento (spirotetramat)	4–5 fl oz	10 fl oz	24	Succulent: 1 Dry: 7	
	-	Aza-Direct (azadirachtin)	1–2 pt	3.5 pt	4	0	OMRI-listed. ² Antifeedant, repellent, IGR (insect growth regulator).
	-	BotaniGard ES (<i>Beauveria bassiana</i> strain GHA)	0.25–1.0 qt	No limit	4	0	May be used in greenhouses. Contact dealer if adjuvant must be used. Compatible in tank mix with some fungicides.

Insect or Mite Pest	MOA Code ¹	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Max Rate Product per Season	REI (Hours)	Days to Harvest	Remarks ²
Armyworm, corn earworm, lesser cornstalk borer, loopers, cutworm, caterpillar, grubs, root maggots, wireworms	-	Mycotrol ESO (<i>Beauveria bassiana</i> strain GHA)	0.25–1.0 qt	No limit	4	0	OMRI-listed. ² May be used in greenhouses. Contact dealer if adjuvant must be used. Compatible in tank mix with some fungicides.
	-	Grandevo (<i>Chromobacterium subtsugae</i> strain PRAA4-1)	1–3 lb	None	4	0	OMRI-listed. ² Succulent or dried.
	-	M-Pede 49% (soap, insecticidal)	0.25%–4.0% v/v	No limit 7-to-10-day interval	12	0	OMRI-listed. ²
	-	Neemix 4.5 (azadirachtin)	4–16.0 fl oz	20 g a.i.	4	0	OMRI-listed. ² IGR and feeding repellent.
	-	Sun Spray JMS Stylet Oil Saf-T-Side (insecticidal oils)	JMS: 3–6 qt/100 gal Other oils: 1–2 gal/100 gal	No limit	4	0	OMRI-listed. ²
	-	Trilogy (extract of neem oil)	1.0%–2.0% v/v	No limit	4	0	OMRI-listed. ²
	- + 3A	BotaniGard Maxx (<i>Beauveria bassiana</i> strain GHA + pyrethrins)	0.25–2.0 qt	No limit	12	0	
	1A	*Lannate LV; *SP (methomyl)	LV: 1.50–3 pt SP: 0.50–1.0 lb	LV: 15 pt SP: 5.0 lb	48		See label: varies with rate and crop use.
	1A	Sevin 4F (carbaryl)	0.50–1.5 qt	6.0 qt per year	12		Fresh beans & peas: 3 Grazing or forage: 14 Dried beans seed or hay: 21 Use on succulent shelled peas and beans prohibited.
	1B	*Diazinon 50W AG 500 (diazinon)	50W: 4.8 lb AG500: 2–4 qt	1 application per year	72		Broadcast at planting Succulent beans and peas only. Soil application only.
	1B	*Dibrom 8E (naled)	1–1.5 pt	4.5 pt	48	1	Ground application only, not for cowpeas and fieldpeas intended for livestock forage.
	1B	Orthene 97 (acephate)	0.75–1.0 lb	2.0 lb a.i.	24		Dry or succulent: 14 Lima beans, succulent form: 1
3A	*Asana XL (esfenvalerate)	5.8–9.6 fl oz	38.4 fl oz	12		Snap: 3 Dry beans and peas: 21 Do not feed or graze livestock on treated vines.	

Insect or Mite Pest	MOA Code ¹	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Max Rate Product per Season	REI (Hours)	Days to Harvest	Remarks ²
	3A	*Baythroid XL (beta-cyfluthrin)	Dry beans and peas: 0.8–3.2 fl oz Southern pea: 0.8–2.1 fl oz	Dry beans and peas: 6.4 fl oz Southern peas: 10.5 fl oz	12	Dry beans and peas: 7 Southern pea: 3	Not for use on succulent beans or peas. Do not feed treated vines or hay to livestock.
	3A	*Brigade 2 EC (bifenthrin)	2.1–6.4 fl oz	Succulent: 12.8 fl oz Dry: 19.2 fl oz	12	Succulent: 3 Dry: 14	Do not exceed allowed amounts including use of other products containing bifenthrin.
	3A	*Capture LFR (bifenthrin)	3.4–6.8 fl oz	25.5 fl oz	12	At plant	For control before larvae bore into the plant stalk or pods. Do not graze livestock in treated areas or harvest vines for forage or hay.
	3A	*Declare Insecticide (gamma-cyhalothrin)	1.54 fl oz	0.38 pt	24	Edible podded and succulent shelled: 7 Dry beans and peas: 21	Can also be applied at planting for control of cutworms, white grubs, and wireworms. See label.
	3A	*Mustang *Mustang Maxx (zeta-cypermethrin)	3.0–4.3 oz Maxx: 1.28–4.0 oz	25.8 oz Maxx: 24 oz	12	Succulent: 1 Dried shelled peas or beans: 21	OMRI-listed. ² Treat when insects first appear.
	3A	PyGanic 5.0 (pyrethrins)	4.5–17 fl oz	10 applications	12	0	Do not graze livestock in treated areas.
	3A	*Warrior II (lambda-cyhalothrin)	0.96–1.92 fl oz	7.68 fl oz	24	Edible podded and succulent shelled: 7 Dried, shelled: 21	
	3A + 28	*Besiege (lambda-cyhalothrin + chlorantraniliprole)	5–10 fl oz	31 fl oz	24	Edible podded succulent shelled: 7 Dry shelled: 21	
	5	Entrust SC (spinosad)	1.25–2.0 oz	Succulent: 9.0 fl oz Dry: 3.75 fl oz	4	Succulent: 3 Dry: 28	OMRI-listed. ² Do not feed forage or hay to meat or dairy animals.
	5	Radiant SC (spinetoram)	4–8 fl oz	Succulent: 28.0 fl oz Dry: 12.0 fl oz	4	Succulent: 3 Dry: 28	
	6 + 28	*Minecto Pro (abamectin + cyantraniliprole)	7.5–10 fl oz	20 fl oz	12	7	
	11A	Javelin WG (<i>Bacillus thuringiensis</i> subspecies <i>kurstaki</i>)	0.12–1.50 lb	No limit	4	0	OMRI-listed. ² Treat when larvae are young. Thorough coverage is essential.
	11A	Xentari DF (<i>Bacillus thuringiensis</i> subspecies <i>aizawai</i>)	0.5–2.0 lb	No limit	4	0	OMRI-listed. ² Treat when larvae are young. Thorough coverage is essential. May be used in the greenhouse.
	15	Rimon 0.83 EC (novaluron)	6–12 fl oz	36.0 fl oz	12	1	Rimon disrupts molting and has no effect on adult insects.

Insect or Mite Pest	MOA Code ¹	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Max Rate Product per Season	REI (Hours)	Days to Harvest	Remarks ²
	18	Intrepid 2F (methoxyfenozide)	4–16 fl oz	64 fl oz	12	7	
	22	Avaunt (indoxacarb)	3.5 oz	14 fl oz	12	7	Southern pea (dry) varieties only.
	28	Coragen (chlorantraniliprole/rynaxypyr)	3.5–7.5 fl oz	15.4 fl oz of chlorantraniliprole products per acre per year.	4	1	Foliar application only.
	28	Exirel (cyantraniliprole/cyazypyr)	10.5–20.5 oz	No more than 0.4 lb a.i. of Group 28 products	12	Succulent: 1 Dried: 7	Label contains pollinator warning language.
	-	Aza-Direct (azadirachtin)	1–2 pt	3.5 pt	4	0	OMRI-listed. ² Antifeedant, repellent, IGR.
	-	BotaniGard ES (<i>Beauveria bassiana</i> strain GH4)	0.25–1.0 qt	No limit	4	0	May be used in greenhouses. Contact dealer if adjuvant must be used. Compatible in tank mix with some fungicides.
	-	Mycotrol ESO (<i>Beauveria bassiana</i> strain GH4)	0.25–1.0 qt	No limit	4	0	OMRI-listed. ² May be used in greenhouses. Contact dealer if adjuvant must be used. Compatible in tank mix with some fungicides.
	- + 3A	BotaniGard Maxx (<i>Beauveria bassiana</i> strain GH4 + pyrethrins)	0.25–2.0 qt	No limit	12	0	
Cucumber beetle, bean leaf beetle, Mexican bean beetle, cowpea curculio	1A	*Lannate LV; *SP (methomyl)	LV: 0.75–3 pt SP: 0.25–1.0 lb	LV: 15 pt SP: 5.0 lb	48	See label; varies with rate & crop	
	1A	Sevin 4F (carbaryl)	0.50–1.5 qt	6.0 qt per year	12	Fresh beans and peas: 3 Grazing or forage: 14 Dried beans, peas, seed, or hay: 21	Use on succulent shelled peas and beans prohibited.
	1B	Dimethoate 4EC (dimethoate)	0.5–1.0 pt	2.0 pt per year	48	Mechanical harvesting: 0	Do not feed treated vines. Do not use on field peas.
	1B	Orthene 97 (acephate)	0.50–1.0 lb	2.0 lb a.i.	24	Dry succulent: 14 Lima beans succulent form: 1	Do not apply to succulent beans for fresh market or processing.
	1B	*Thimet 20G EZ Load (phorate)	4.9–9.4 oz/1000 ft row	1 application only at plant	48	60	Poison. Label pending in Florida. Do not graze livestock on treated forage. No direct contact with seed.

Insect or Mite Pest	MOA Code ¹	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Max Rate Product per Season	REI (Hours)	Days to Harvest	Remarks ²
	3A	*Baythroid XL (beta-cyfluthrin)	Dry beans and peas: 0.8–3.2 fl oz Southern pea: 0.8–2.1 fl oz	Dry beans and peas: 6.4 fl oz Southern pea: 10.5 fl oz	12	Dry beans and peas: 7 Southern pea: 3	Not for use on succulent beans or peas. Do not feed treated vines or hay to livestock.
	3A	*Brigade 2 EC (bifenthrin)	2.1–6.4 fl oz	Succulent: 12.8 fl oz Dry: 19.2 fl oz	12	Succulent: 3 Dry: 14	
	3A	*Declare Insecticide (gamma-cyhalothrin)	1.02–1.54 fl oz	0.38 pt	24	Edible podded and succulent shelled: 7 Dry beans and peas: 21	For control before larvae bore into the plant stalk or pods. Do not graze livestock in treated areas or harvest vines for forage or hay.
	3A	*Mustang *Mustang Maxx (zeta-cypermethrin)	3.0–4.3 oz Maxx: 2.72–4.0 oz	25.8 oz Maxx: 24.0 oz	12	Succulent: 1 Dried shelled peas or beans: 21	Can also be applied at planting for control of cutworms, white grubs, and wireworms. See label.
	3A	PyGanic 5.0 (pyrethrins)	4.5–17 fl oz	10 applications	12	0	OMRI-listed. ² Treat when insects first appear.
	3A	*Warrior II (lambda-cyhalothrin)	0.96–1.92 fl oz	7.68 fl oz	24	Edible podded and succulent shelled: 7 Dried, shelled: 21	
	3A + 28	*Besiege (lambda-cyhalothrin + chlorantraniliprole)	5–10 fl oz	31 fl oz	24	Edible podded succulent shelled: 7 Dry shelled: 21	
	4A	Assail 30SG (acetamidprid)	2.5–5.3 fl oz	16 fl oz	12	7	Edible podded legumes and succulent shelled peas and beans.
	4A + 15	Cormoran (novaluron + acetamiprid)	9–12 fl oz	36 fl oz	12	7	
	15	Rimon 0.83 EC (novaluron)	9–12 fl oz	36.0 fl oz	12	1	Rimon disrupts molting and has no effect on adult insects.
	-	Aza-Direct (azadirachtin)	1–2 pt	3.5 pt	4	0	OMRI-listed. ² Antifeedant, repellent, IGR.
	-	Neemix 4.5 (azadirachtin)	4–16 fl oz	20 g a.i.	12	0	OMRI-listed. ² IGR and feeding repellent.
Fire ants	7A	Extinguish (S-methoprene)	1–1.5 lb broadcast	No limit	4	0	IGR. Colonies will get reduced after 3 weeks and eliminated after 8–10 weeks.
	7C	Esteem Ant Bait (pyriproxyfen)	1.5–2.0 lb	0.134 lb a.i.	12	1	IGR. Apply at first sign of ant activity.
Grasshoppers	1B	Dimethoate 4EC (dimethoate)	0.5–1.0 pt	2.0 pt per year	48	Mechanical harvesting: 0	Do not feed treated vines. Do not use on field peas.

Insect or Mite Pest	MOA Code ¹	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Max Rate Product per Season	REI (Hours)	Days to Harvest	Remarks ²
	3A	*Asana XL (esfenvalerate)	5.8–9.6 fl oz	38.4 fl oz	12	Snap: 3 Dry beans and peas: 21	Do not feed or graze livestock on treated vines.
	3A	*Baythroid XL (beta-cyfluthrin)	Beans and peas: 2.4–3.2 fl oz Southern pea: 1.6–2.1 fl oz	Beans and peas: 6.4 fl oz Southern pea: 10.5 fl oz	12	Dry beans and peas: 7 Southern pea: 3	Not for use on succulent beans or peas. Do not feed treated vines.
	3A	*Brigade 2 EC (bifenthrin)	2.1–6.4 fl oz	Succulent: 12.8 fl oz Dry: 19.2 fl oz	12	Succulent: 3 Dry: 14	
	3A	*Declare Insecticide (gamma-cyhalothrin)	1.02–1.54 fl oz	0.38 pt	24	Edible podded and succulent shelled: 7 Dry: 21	For control before larvae bore into the plant stalk or pods. Do not graze livestock in treated areas or harvest vines for forage or hay.
	3A	*Mustang *Mustang Maxx (zeta-cypermethrin)	3.0–4.3 oz Maxx: 3.2–4.0 oz	25.8 oz Maxx: 24.0 oz	12	Succulent: 1 Dried shelled peas or beans: 21	Can also be applied at planting for control of cutworms, white grubs, and wireworms. See label.
	3A	*Warrior II (lambda-cyhalothrin)	1.28–1.92 fl oz	7.68 fl oz	24	Edible podded and succulent shelled: 7 Dried, shelled: 21	Do not graze livestock in treated areas.
	3A + 28	*Besiege (lambda-cyhalothrin + chlorantraniliprole)	5–10 fl oz	31 fl oz	24	Edible podded succulent shelled: 7 Dry shelled: 21	
	-	BotaniGard ES (<i>Beauveria bassiana</i> strain GHA)	0.25–1 qt	No limit	4	0	May be used in greenhouses. Contact dealer if adjuvant must be used. Compatible in tank mix with some fungicides.
	-	Mycotrol ESO (<i>Beauveria bassiana</i> strain GHA)	0.25–1 qt	No limit	4	0	OMRI-listed. ² May be used in greenhouses. Contact dealer if adjuvant must be used. Compatible in tank mix with some fungicides.
	- + 3A	BotaniGard Maxx (<i>Beauveria bassiana</i> strain GHA + pyrethrins)	0.25–2.0 qt	No limit	12	0	
Leafhopper	1A	*Lannate LV; *SP (methomyl)	LV: 0.75–3 pt SP: 0.25–1.0 lb	LV: 15 pt SP: 5.0 lb	48	See label; varies with rate & crop.	
	1B	*Dibrom 8E (naled)	1.0 pt	4.5 pt	48	1	Ground application only; not for cowpeas and fieldpeas intended for livestock forage.
	1B	Dimethoate 4EC (dimethoate)	0.5–1.0 pt	2.0 pt per year	48	Mechanical harvesting: 0	Do not feed treated vines. Do not use on field peas.
	3A	*Brigade 2 EC (bifenthrin)	2.1–6.4 fl oz	Succulent: 12.8 fl oz Dry: 19.2 fl oz	12	Succulent: 3 Dry: 14	

Insect or Mite Pest	MOA Code ¹	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Max Rate Product per Season	REI (Hours)	Days to Harvest	Remarks ²
	3A	*Mustang *Mustang Maxx (zeta-cypermethrin)	3.0–4.3 oz Maxx: 2.72–4.0 oz	25.8 oz Maxx: 24.0 oz	12	Succulent: 1 Dried shelled peas or beans: 21	Can also be applied at planting for control of cutworms, white grubs, and wireworms. See label.
	3A	PyGanic 5.0 (pyrethrins)	4.5–17 fl oz	10 applications	12	0	OMRI-listed. ² Treat when insects first appear.
	3A	*Warrior II (lambda-cyhalothrin)	1.28–1.92 fl oz	7.68 fl oz	24	Edible podded and succulent shelled: 7 Dried, shelled: 21	Do not graze livestock in treated areas.
	4A	Admire Pro (imidacloprid)	Soil: 7–10.5 fl oz Foliar: 1.2 fl oz	Soil: 10.5 fl oz Foliar: 3.6 fl oz	12	Soil: 21 Foliar: 7	Do not apply to both soil and foliage. Do not use other 4A insecticides if imidacloprid is used.
	4A	Assail 30SG (acetamidprid)	2.5–5.3 fl oz	16 oz	12	7	Edible podded legumes and succulent shelled peas and beans.
	4A + 15	Cormoran (novaluron + acetamiprid)	9–12 fl oz	36 fl oz	12	7	
	4D	Sivanto Prime (flupyradifurone)	7.0–10.5 fl oz	28.0 fl oz per year	4	7	Minimum interval between applications: 10 days.
	16	Courier 40 SC (buprofezin)	9.0–13.6 fl oz	27.2 fl oz	12	14	IGR. For succulent beans only. Good coverage essential.
	28	Exirel (cyantranilprole/cyazapyr)	10.5–20.5 oz	No more than 0.4 lb a.i. of Group 28 products	12	Succulent: 1 Dried: 7	Label contains pollinator protection warnings.
	-	Aza-Direct (azadirachtin)	1–2 pt	3.5 pt	4	0	OMRI-listed. ² Antifeedant, repellent, IGR.
	-	BotaniGard ES (<i>Beauveria bassiana</i> strain GHA)	0.25–1.0 qt	No limit	4	0	May be used in greenhouses. Contact dealer if adjuvant must be used. Compatible in tank mix with some fungicides.
	-	M-Pede 49% (soap, insecticidal)	0.25%–4.0% v/v	No limit 7-to-10-day interval	12	0	OMRI-listed. ²
	-	Mycotrol ESO (<i>Beauveria bassiana</i> strain GHA)	0.25–1.0 qt	No limit	4	0	OMRI-listed. ² May be used in greenhouses. Contact dealer if adjuvant must be used. Compatible in tank mix with some fungicides.
	-	Sun Spray JMS Stylet Oil Saf-T-Side (insecticidal oils)	JMS: 3–6 qt/100 gal Other oils: 1–2 gal/100 gal	No limit	4	0	OMRI-listed. ²
	- + 3A	BotaniGard Maxx (<i>Beauveria bassiana</i> strain GHA + pyrethrins)	0.25–2.0 qt	No limit	12	0	

Insect or Mite Pest	MOA Code ¹	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Max Rate Product per Season	REI (Hours)	Days to Harvest	Remarks ²
<i>Liriomyza</i> leafminers	5	Entrust SC (spinosad)	1.5–2.0 oz	Succulent: 9.0 fl oz Dry: 3.75 fl oz	4	Succulent: 3 Dry: 28	OMRI-listed. ² Do not feed forage or hay to meat or dairy animals.
	5	Radiant SC (spinetoram)	5–8 fl oz	Succulent: 28 fl oz Dry: 12 fl oz	4	Succulent: 3 Dry: 28	Time applications to small larvae.
	6	*Agri-Mek SC (abamectin)	1.75–3.5 fl oz	10.5 fl oz	12	7	To avoid illegal residues, must be mixed with a nonionic activator-type wetting, spreading and/or penetrating spray adjuvant. Do not feed treated vines or hay to livestock.
	6 + 28	*Minecto Pro (abamectin + cyantraniliprole)	7.5–10 fl oz	20 fl oz	12	7	
	17	Trigard (cyromazine)	2.66 oz 1 packet	0.75 lb a.i./A	12	7	Not for use on soybeans or peas.
	28	Coragen (chlorantraniliprole/rynaxypyr)	7.5 fl oz	15.4 fl oz/A of chlorantraniliprole products per year.	4	1	Foliar application only.
	28	Exirel (cyantraniliprole/cyazapypyr)	10.5–20.5 oz	No more than 0.4 lb a.i. of Group 28 products	12	Succulent: 1 Dry: 7	
	-	Neemix 4.5 (azadirachtin)	4–16 fl oz	20 g a.i.	12	0	OMRI-listed. ² IGR and feeding repellent.
	-	Sun Spray JMS Stylet Oil Saf-T-Side (insecticidal oils)	JMS: 3–6 qt/100 gal Other oils: 1–2 gal/100 gal	No limit	4	0	OMRI-listed. ²
Lygus bug, stink bug, kudzu bug	1A	*Lannate LV; *SP (methomyl)	LV: 1.50–3 pt SP: 0.50–1.0 lb	LV: 15 pt SP: 5.0 lb	48	See label; varies with rate & crop.	
	1A	Sevin 4F (carbaryl)	1.0–1.5 qt	6.0 qt per year	12	Fresh beans and peas: 3 Grazing or forage: 14 Dried beans, peas, seed, or hay: 21	Use on succulent shelled peas and beans prohibited.
	1B	*Dibrom 8E (naled)	1–1.5 pt	4.5 pt	48	1	Ground application only; not for cowpeas and fieldpeas intended for livestock feed.
	1B	Dimethoate 4EC (dimethoate)	0.5–1.0 pt	2.0 pt per year	48	Mechanical harvesting: 0	Do not feed treated vines. Do not use on field peas.
	3A	*Baythroid XL (beta-cyfluthrin)	Beans and peas: 2.4–3.2 fl oz Southern pea: 1.6–2.1 fl oz	Beans and peas: 6.4 fl oz Southern pea: 10.5 fl oz	12	Dry beans and peas: 7 Southern pea: 3	Not for use on succulent beans or peas. Do not feed treated vines or hay to livestock.

Insect or Mite Pest	MOA Code ¹	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Max Rate Product per Season	REI (Hours)	Days to Harvest	Remarks ²
	3A	*Brigade 2 EC (bifenthrin)	5.12–6.4 fl oz	Succulent: 12.8 fl oz Dry: 19.2 fl oz	12	Succulent: 3 Dry: 14	
	3A	*Declare Insecticide (gamma-cyhalothrin)	1.02–1.54 fl oz	0.38 pt	24	Edible podded and succulent shelled: 7 Dry beans and peas: 21	For control before larvae bore into the plant stalk or pods. Do not graze livestock in treated areas or harvest vines for forage or hay.
	3A	*Mustang *Mustang Maxx (zeta-cypermethrin)	3.4–4.3 oz Maxx: 3.2–4.0 oz	25.8 oz Maxx: 24.0 oz	12	Succulent: 1 Dried shelled peas or beans: 21	Can also be applied at planting for control of cutworms, white grubs, and wireworms. See label.
	3A	PyGanic 5.0 (pyrethrins)	4.5–17 fl oz	10 applications	12	0	OMRI-listed. ² Treat when insects first appear.
	3A	*Warrior II (lambda-cyhalothrin)	1.28–1.92 fl oz	7.68 fl oz	24	Edible podded and succulent shelled: 7 Dried, shelled: 21	
	3A + 28	*Besiege (lambda-cyhalothrin + chlorantraniliprole)	5–10 fl oz	31 fl oz	24	Edible podded succulent shelled: 7 Dry shelled: 21	
	4A	Transform WG (sulfoxaflor)	2.25 oz	8.5 oz	24	7	Succulent, edible podded, and dry beans. Stink bug suppression.
	4A + 15	Cormoran (novaluron + acetamiprid)	12 fl oz	36 fl oz	12	7	
	15	Rimon 0.83 EC (novaluron)	12 fl oz	36.0 fl oz	12	1	Rimon disrupts molting and has no effect on adult insects.
	-	Aza-Direct (azadirachtin)	1–2 pt	3.5 pt	4	0	OMRI-listed. ² Antifeedant, repellent, IGR.
	-	BotaniGard ES (<i>Beauveria bassiana</i> strain GHA)	0.25–1.0 qt	No limit	4	0	May be used in greenhouses. Contact dealer if adjuvant must be used. Compatible in tank mix with some fungicides.
	-	M-Pede 49% (soap, insecticidal)	0.25%–4.0% v/v	No limit 7-to-10-day interval	12	0	OMRI-listed. ²
	-	Mycotrol ESO (<i>Beauveria bassiana</i> strain GHA)	0.25–1.0 qt	No limit	4	0	OMRI-listed. ² May be used in greenhouses. Contact dealer if adjuvant must be used. Compatible in tank mix with some fungicides.
	- + 3A	BotaniGard Maxx (<i>Beauveria bassiana</i> strain GHA + pyrethrins)	0.25–2.0 qt	No limit	12	0	
Mites: two-spotted, southern, red	3A	*Brigade 2 EC (bifenthrin)	5.12–6.4 fl oz	Succulent: 12.8 fl oz Dry: 19.2 fl oz	12	Succulent: 3 Dry: 14	

Insect or Mite Pest	MOA Code ¹	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Max Rate Product per Season	REI (Hours)	Days to Harvest	Remarks ²
	3A	PyGanic 5.0 (pyrethrins)	4.5–17 fl oz	10 applications	12	0	OMRI-listed. ² Treat when insects first appear.
	6	*Agri-Mek SC (abamectin)	1.75–3.5 fl oz	10.5 fl oz	12	7	To avoid illegal residues, must be mixed with a nonionic activator-type wetting, spreading and/or penetrating spray adjuvant. Do not feed treated vines or hay to livestock.
	6 + 28	*Minecto Pro (abamectin + cyantraniliprole)	7.5–10 fl oz	20 fl oz	12	7	
	20B	Kanemite 15 SC (acequinocyl)	31 fl oz	62 fl oz	12	7	Succulent beans, including succulent soybean vegetable only.
	20D	Acramite-50WS (bifentazate)	1.0–1.5 lb	3.0 lb	12	3	Succulent beans, peas, and soybean.
	21A	Portal (fenpyroximate)	2.0 pt	4.0 pt	12	1	Snap bean only. Allow 14 days between applications.
	-	Aza-Direct (azadirachtin)	1–2 pt	3.5 pt	4	0	OMRI-listed. ² Antifeedant, repellent, IGR.
	-	Grandevo (<i>Chromobacterium subsugae</i> strain PRAA4-1)	1–3 lb	No limit	4	0	OMRI-listed. ² Succulent or dried.
	-	M-Pede 49% (soap, insecticidal)	0.25%–4.0% v/v	No limit 7-to-10-day interval	12	0	OMRI-listed. ²
	-	Sun Spray JMS Stylet Oil Saf-T-Side (insecticidal oils)	JMS: 3–6 qt/100 gal Other oils: 1–2 gal/100 gal	No limit	4	0	OMRI-listed. ²
	-	Trilogy (extract of neem oil)	1.0%–2.0% v/v	No limit	4	0	OMRI-listed. ²
Thrips	1A	*Lannate LV; *SP (methomyl)	LV: 1.50–3 pt SP: 0.50–1.0 lb	LV: 15 pt SP: 5.0 lb	48	See label: varies with rate and crop use	
	3A	*Hero (zeta-cypermethrin + bifenthrin)	10.3 oz	27.39 oz	12	Succulent: 3 Dry: 21	
	3A	PyGanic 5.0 (pyrethrins)	4.5–17 fl oz	10 applications	12	0	OMRI-listed. ²
	3A+ 28	*Besiege (lambda-cyhalothrin + chlorantraniliprole)	6–10 fl oz	31 fl oz	24	Edible podded succulent shelled: 7 Dry shelled: 21	Does not include Western Flower Thrips.
	4A	Admire Pro (imidacloprid)	7–10.5 fl oz	10.5 fl oz	12	21	Only soil applied is labeled and only for foliar feeding thrips.

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	4A	Assail 30SG (acetamiprid)	4.5–5.3 fl oz	16 oz	12	7	Edible podded legumes and succulent shelled peas and beans.
	4A	Transform WG (sulfoxaflor)	2.25 oz	8.5 oz	24	7	Succulent, edible podded, and dry beans.
	4A + 15	Cormoran (novaluron + acetamiprid)	12 fl oz	36 fl oz (see remarks)	12	7	Do not apply more than 2 applications against thrips per season.
	5	Entrust SC (spinosad)	1.5–2.0 fl oz	Succulent: 9.0 fl oz Dry: 3.75 fl oz	4	Succulent: 3 Dry: 28	OMRI-listed. ² Do not feed forage or hay to meat or dairy animals.
	5	Radiant SC (spinetoram)	5–8 fl oz	Succulent: 28 fl oz Dry: 12 fl oz	4	Succulent: 3 Dry: 28	
	6 + 28	*Minecto Pro (abamectin + cyantraniliprole)	10 fl oz	20 fl oz	12	7	Suppression of foliage-feeding only.
	15	Rimon 0.83 EC (novaluron)	12 fl oz	36.0 fl oz	12	1	Rimon disrupts molting and has no effect on adult insects.
	23	Movento (spirotetramat)	4–5 fl oz	10.0 fl oz	24	Succulent: 1 Dry: 7	
	28	Exirel (cyantraniliprole/cyazapir)	10.5–20.5 oz	No more than 0.4 lb a.i. of Group 28 products	12	Succulent: 1 Dried: 7	Label contains pollinator protection warnings.
	-	Aza-Direct (azadirachtin)	1–2 pt	3.5 pt	4	0	OMRI-listed. ² Antifeedant, repellent, IGR.
	-	BotaniGard ES (<i>Beauveria bassiana</i> strain GHA)	0.25–1.0 qt	No limit	4	0	May be used in greenhouses. Contact dealer if adjuvant must be used. Compatible in tank mix with some fungicides.
	-	Grandevo (<i>Chromobacterium subsugae</i> strain PRAA4-1)	1–3 lb	No limit	4	0	OMRI-listed. ² Succulent or dried.
	-	M-Pede 49% (soap, insecticidal)	0.25%–4.0% v/v	No limit 7-to-10-day interval	12	0	OMRI-listed. ²
	-	Mycotrol ESO (<i>Beauveria bassiana</i> strain GHA)	0.25–1.0 qt	No limit	4	0	OMRI-listed. ² May be used in greenhouses. Contact dealer if adjuvant must be used. Compatible in tank mix with some fungicides.
	-	Sun Spray JMS Stylet Oil Saf-T-Side (insecticidal oils)	JMS: 3–6 qt/100 gal Other oils: 1–2 gal/100 gal	no limit	4	0	OMRI-listed. ²
	-	Trilogy (extract of neem oil)	1.0%–2.0% v/v	no limit	4	0	OMRI-listed. ² Apply morning or evening to reduce potential for leaf burn.
	- + 3A	BotaniGard Maxx (<i>Beauveria bassiana</i> strain GHA + pyrethrins)	0.25–2.0 qt	No limit	12	0	

Insect or Mite Pest	MOA Code ¹	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Max Rate Product per Season	REI (Hours)	Days to Harvest	Remarks ²
Whiteflies	3A	*Brigade 2 EC (bifenthrin)	2.1–6.4 fl oz	Succulent: 12.8 fl oz Dry: 19.2 fl oz	12	Succulent: 3 Dry: 14	
	3A	*Mustang *Mustang Maxx (zeta-cypermethrin)	3.4–4.3 oz Maxx: 3.2–4.0 oz	25.8 oz Maxx: 24.0 oz	12	Succulent: 1 Dried shelled peas or beans: 21	Can also be applied at planting for control of cutworms, white grubs, and wireworms. See label.
	3A	PyGanic 5.0 (pyrethrins)	4.5–17 fl oz	10 applications	12	0	OMRI-listed. ² Treat when insects first appear.
	4A	Admire Pro (imidacloprid)	Soil: 7–10.5 fl oz Foliar: 1.2 fl oz	Soil: 10.5 fl oz Foliar: 3.6 fl oz	12	Soil: 21 Foliar: 7	Do not apply to both soil and foliage. Do not use other 4A insecticides if imidacloprid is used.
	4A	Assail 30SG (acetamiprid)	4.0–5.3 fl oz	16 oz	12	7	Edible podded legumes and succulent shelled peas and beans.
	4A + 15	Cormoran (novaluron + acetamiprid)	12 fl oz	36 fl oz (see remarks)	12	7	Do not apply more than 2 applications against whiteflies per season.
	4D	Sivanto Prime (flupyradifurone)	10.5–14 fl oz	28.0 fl oz per year	4	7	Minimum interval between applications: 10 days
	6 + 28	*Minecto Pro (abamectin + cyantraniliprole)	10 fl oz	20 fl oz	12	7	
	7C	Knack IGR (pyriproxyfen)	8–10 fl oz	20 fl oz	12	7	
	15	Rimon 0.83 EC (novaluron)	12 fl oz	24 fl oz	12	1	Rimon disrupts molting and has no effect on adult insects.
	16	Courier 40 SC (buprofezin)	9.0–13.6 fl oz	27.2 fl oz	12	14	For succulent beans only. Allow 14 days between applications.
	23	Movento (spirotetramat)	4–5 fl oz	10.0 fl oz	24	Succulent: 1 Dry: 7	
	28	Exirel (cyantraniliprole/cyazapyr)	10.5–20.5 oz	No more than 0.4 lb a.i. of Group 28 products	12	Succulent: 1 Dried: 7	
	-	BotaniGard ES (<i>Beauveria bassiana</i> strain GH4)	0.25–1.0 qt	No limit	4	0	May be used in greenhouses. Contact dealer if adjuvant must be used. Compatible in tank mix with some fungicides.
	-	Grandevo (<i>Chromobacterium subsugae</i> strain PRAA4-1)	1–3 lb	No limit	4	0	OMRI-listed. ² Succulent or dried. Do not apply if bees are visiting treatment area.
	-	M-Pede 49% (soap, insecticidal)	0.25%–4.0% v/v	No limit	12	0	OMRI-listed. ² Use with a companion insecticide.
	-	Mycotrol E50 (<i>Beauveria bassiana</i> strain GH4)	0.25–1.0 qt	No limit	4	0	OMRI-listed. ² May be used in houses. Contact dealer if adjuvant must be used. Compatible in tank mix with some fungicides.

Insect or Mite Pest	MOA Code ¹	Trade Name (Active Ingredient) *Restricted	Rate (Product/Acre)	Max Rate Product per Season	REI (Hours)	Days to Harvest	Remarks ²
	-	Neemix 4.5 (azadirachtin)	4–16 fl oz	20 g a.i.	4	0	OMRI-listed. ²
	-	Sun Spray JMS Stylet Oil Saf-T-Side (insecticidal oils)	JMS: 3–6 qt/100 gal Other oils: 1–2 gal/100 gal	No limit	4	0	OMRI-listed. ²
	-	Trilogy (extract of neem oil)	1.0%–2.0% v/v	No limit	4	0	OMRI-listed. ² Apply morning or evening to reduce potential for leaf burn.
	- + 3A	BotaniGard Maxx (<i>Beauveria bassiana</i> strain GHA + pyrethrins)	0.25–2.0 qt	No limit	12	0	

¹Mode of Action (MOA) codes for plant pest insecticides from the Insecticide Resistance Action Committee (IRAC) Mode of Action Classification v.1.1.1 January 2024. Number codes 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 same active ingredient or similar mode of action. This information must be considered for the insecticide resistance management decisions. Un—unknown, or a mode of action that has not been classified yet.

²Information provided in the 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 Organic Materials Review Institute for use in organic production.

***Restricted use insecticide**

Table 7. Bean, pea, and other legume fungicides ordered by disease and then FRAC group according to their mode of action. Contact: Shouan Zhang, UF/IFAS Tropical Research and Education Center.

Pertinent Diseases or Pathogens	Fungicide Group ¹	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks ²
			Appl.	Season	Harvest	Reentry	
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.							
Alternaria blight/ leaf spot	3	Proyysol (mefentrifluconazole)	5 fl oz	15 fl oz	21	0.5	
	3	Tilt (propiconazole)	4 fl oz	12 fl oz	7	0.5	
	11	Aframe, Arius 250, Atticus Acadia 25C, AzoxyStar, Azoxystrobin SC, GCS Azoxy 25C, Quadris, Satori Fungicide, Tetraban Fungicide, Trevo (azoxystrobin)	15.5 fl oz	92.3 fl oz	Dry: 14 Succulent: 0	4 hr	
	11	AZteroid FC 3.3 (azoxystrobin)	9.7 fl oz	58.2 fl oz	Dry: 14 Succulent: 0	4 hr	
	11	Evito 480SC (fluoxastrobin)	4.75 fl oz	9.5 fl oz	7	0.5	
	11	Headline Headline SC (pyraclostrobin)	9 fl oz	18 fl oz	7 or 21 SC: 7	4 hr SC: 0.5	
	3 + 7	Revylok (mefentrifluconazole + fluxapyroxad)	6.5 fl oz	13 fl oz	21	0.5	
	3 + 11	Veltyma (pyraclostrobin + mefentrifluconazole)	10 fl oz	20 fl oz	21	0.5	
	11 + 3	Atticus Aquila XL, GCS AzoxyProp, MiCrop Fungicide, Propaz, Quilt Xcel (Azoxystrobin + propiconazole)	14 fl oz	42 fl oz	Dry: 14 Succulent: 7	0.5	
	7 + 11	Priaxor Xemium (fluxapyroxad + pyraclostrobin)	8 fl oz	16 fl oz	7	0.5	Limit 2 applications per season. Crop cannot be used for livestock until 14 days after last application.
	7 + 12	Miravis Prime (pydiflumetofen + fludioxonil)	9.2 fl oz		14	0.5	Minimum Application Interval: 14 days
	7 + 3 + 11	Miravis Neo (pydiflumetofen + propiconazole + azoxystrobin)	13.7 fl oz	27.4 fl oz	14	0.5	Minimum Application Interval: 14 days
Anthracnose	M1	(Nordox 75 WG (cuprous oxide)	2.5 lb			0.5	

Pertinent Diseases or Pathogens	Fungicide Group ¹	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks ²
			Appl.	Season	Harvest	Reentry	
	M1 + M1	Badge SC Badge X2 (copper hydroxide + copper oxychloride)	2 pt	SC: 16.6 pt X2: 16.9 pt	0	Greenhouse: 1 Field: 2	
	M1 + M1	C-O-C-SWDG (basic copper sulfate + copper oxychloride)	1.5 lb	9.2 lb		2	
	1	(thiophanate-methyl) Many brands available: 3336 EG, 3336 F, 3336 WP, Incognito 4.5F, Incognito 85 WDG, Miramar Fungicide, Nufarm T-Methyl 4.5F, Talaris 4.5 F, Talaris 50 WPS, Talaris 70 WSB, Topsin 4.5FL Fungicide, Topsin M WSB Fungicide	SEE INDIVIDUAL LABEL		14 to 28 (see label)	Succulent beans: 1 Dry beans: 3	Apply once at 50%–70% bloom or twice (max=1.5 lb per application) with first at 10%–30% bloom and second at peak bloom.
	3	Tilt (propiconazole)	4 fl oz	12 fl oz	7	0.5	Supplemental label: For control of web blight caused by <i>Rhizoctonia solani</i> . Not labeled for cowpea used for livestock feed.
	7	Fontelis (penthioopyrad)	30 fl oz	72 fl oz	0	0.5	No more than 2 sequential applications before alternating to a non-FRAC 7 fungicide.
	7 + 11	Priaxor Xemium (fluxapyroxad + pyraclostrobin)	8 fl oz	16 fl oz	7	0.5	Limit 2 applications per season. Crop cannot be used for livestock until 14 days after last application.
	11	Aframe, Arius 250, Atticus Acadia 25C, A-Zox 255C, AzoxyStar, Azoxystrobin SC, GCS Azoxy 25C, Quadris, Satori Fungicide, Tetraban, Trevo (azoxystrobin)	15.5 fl oz	92.3 fl oz	Dry: 14 Succulent: 0	4 hr	No more than 2 sequential applications before alternating to a non-FRAC 11 fungicide.
	11	Azteroid FC 3.3 (azoxystrobin)	9.7 fl oz	58.2 fl oz	Dry: 14 Succulent: 0	4 hr	
	11	Headline Headline SC (pyraclostrobin)	9 fl oz	18 fl oz	7 or 21 SC: 7	4 hr SC: 0.5	No more than 2 sequential applications before alternating to a non-FRAC 11 fungicide.
	11	Evito 480SC (fluoxastrobin)	4.75 fl oz	9.5 fl oz	7	0.5	
	3 + 11	Veltyma (pyraclostrobin + mefenitrifluconazole)	10 fl oz	20 fl oz	21	0.5	

Pertinent Diseases or Pathogens	Fungicide Group ¹	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks ²
			Appl.	Season	Harvest	Reentry	
	11 + 3	Atticus Aquila XL, Cover XL, GCS AzoxyProp, MiCrop Fungicide, Propaz, GCS AzoxyProp, MiCrop Fungicide, Propaz, Quilt Xcel, (azoxystrobin + propiconazole)	14 fl oz	42 fl oz	Dry: 14 Succulent: 7	0.5	Supplemental label: Do not use on cowpea cultivars intended for livestock.
Ascochyta blight	3	Tilt (propiconazole)	4 fl oz	12 fl oz	7	0.5	Supplemental label: For control of web blight caused by <i>Rhizoctonia solani</i> . Not labeled for cowpea used for livestock feed.
	3	Proyisol (mefenfluproconazole)	5 fl oz	15 fl oz	21	0.5	Only labeled for chickpea, lentils, and dry-edible peas and beans.
	7	Bonafide (boscalid)	6 oz	22 oz	Dry: 14 Succulent: 7	0.5	Make application at the beginning of flowering.
	7	Endura (boscalid)	11 oz	22 oz	Dry: 21 Succulent: 7	0.5	Limit 2 application per crop, and alternate chemistry.
	7	Fontelis (penthioopyrad)	30 fl oz	72 fl oz	0	0.5	No more than 2 sequential applications before alternating to a non-FRAC 7 fungicide.
	3 + 7	Revylok (mefenfluproconazole + fluxapyroxad)	6.5 fl oz	13 fl oz	21	0.5	
	7 + 3 + 11	Miravis Neo (pydiflumetofen + propiconazole + azoxystrobin)	13.7 fl oz	27.4 fl oz	14	0.5	Minimum Application Interval: 14 days.
	7 + 11	Priaxor Xemium (fluxapyroxad + pyraclostrobin)	8 fl oz	16 fl oz	7	0.5	Limit 2 application per season. Crop cannot be used for livestock until 14 days after last application.
	7 + 12	Miravis Prime (pydiflumetofen + fludioxonil)	9.2 fl oz	36.5 fl oz	14	0.5	Minimum Application Interval: 14 days
	11	Headline Headline SC (pyraclostrobin)	9 fl oz	18 fl oz	7 or 21	4 hr	No more than 2 sequential applications before alternating to a non-FRAC 11 fungicide.
	11	Aframe, Arius 250, Atticus Acadia 25C, AzoxyStar, Azoxystro bin SC, GCS Azoxy 25C, Quadris, Satori Fungicide, Tetraban, Trevo (azoxystrobin)	15.5 fl oz	92.3 fl oz	Dry: 14 Succulent: 0	4 hr	No more than 2 sequential applications before alternating to a non-FRAC 11 fungicide.
	11	Azteroid FC 3.3 (azoxystrobin)	9.7 fl oz	58.2 fl oz	Dry: 14 Succulent: 0	4 hr	No more than 2 sequential applications before alternating to a non-FRAC 11 fungicide.

Pertinent Diseases or Pathogens	Fungicide Group ¹	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks ²
			Appl.	Season	Harvest	Reentry	
	11	Evito 480SC (fluoxastrobin)	4.75 fl oz	9.5 fl oz	7	0.5	
	11 + 3	Aframe Plus, Cover XL, GCS AzoxyProp, MiCrop Fungicide, Propaz, Quilt Xcel (azoxystrobin + propiconazole)	14 fl oz	42 fl oz	Dry: 14 Succulent: 7	0.5	Supplemental label: Do not use on cowpea cultivars intended for livestock.
Bacterial brown spot, Bacterial blight, Common blight, Halo blight	M1	(copper compounds) Many brands available: Americop 40 DF, Basic Copper 53, Champ DP Dry Prill, Champ Formula 2 Flowable, Champion++, Champ WG, Cueva, Cuprofix Ultra 40 Disperss, Kocide 2000, Kocide 3000, KOP-Hydroxide, MasterCop, Nordox 75 WG, Nu-Cop 3 L, Nu-Cop 50 DF, Nu-Cop 50 WP, Nu-Cop HB, Previsto	SEE INDIVIDUAL LABEL		Varies	Varies from 4 hr to 2 days	
	M1 + M1	Badge SC Badge X2 (copper hydroxide + copper oxychloride)	2 pt	SC: 16.6 pt X2: 16.9 pt	0	Greenhouse: 1 Field: 2	
	M1 + M1	C-O-C-SWDG (basic copper sulfate + copper oxychloride)	1.5 lb	9.2 lb		2	
Bean Rust (Uromyces appendiculatus)	M5	Many brands available: Bravo Ultrex, Bravo Weather Stik, Bravo ZN, Chlorothalonil 720, Echo 720, Echo 90 DF, Echo ZN, Equus-DF Fungicide, Equus 720 SST, Initiate 720, Initiate ZN, Oranil 6L, Periapt. Praiz, Rialto 720 F	SEE INDIVIDUAL LABEL	Snap: 12 pt Dry: 8 pt	Snap: 7 Dry: 14	0.5	Do not use on crops for livestock.
	3	Monsoon, Onset 3.6L Fungicide, Orius 3.6F, Tebucon 3.6F, Tebu-Crop 3.6F, TebuStar 3.6L, Tebuzol 3.6F, Toledo, Willowood Teb 3.6SC (tebuconazole)	6 fl oz	Fresh: 24 fl oz Dry: 12 fl oz	7	0.5	
	3	Tilt (propiconazole)	4 fl oz	12 fl oz	7	0.5	
	3	Proyisol (mefenitrufluconazole)	5 fl oz	15 fl oz	21	0.5	

Pertinent Diseases or Pathogens	Fungicide Group ¹	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks ²
			Appl.	Season	Harvest	Reentry	
	3	Rally 40WSP Fungicide (myclobutanol)	5 oz	1.25 lb	0	1	30-day plant-back interval
	3 + 7	Revyllok (mefenitruconazole + fluxapyroxad)	6.5 fl oz	13 fl oz	21	0.5	
	3 + 11	Veltyma (pyraclostrobin + mefenitruconazole)	10 fl oz	20 fl oz	21	0.5	
	7 + 3 + 11	Miravis Neo (pydiflumetofen + propiconazole + azoxystrobin)	13.7 fl oz	27.4 fl oz	14	0.5	Minimum Application Interval: 14 days.
	7 + 11	Priaxor Xemium (fluxapyroxad + pyraclostrobin)	8 fl oz	16 fl oz	7	0.5	Limit 2 applications per season. Crop cannot be used for livestock until 14 days after last application.
	11	Aframe, Arius 250, Atticus Acadia 25C, A-Zox 255C, Azoxystar, Azoxystarin SC, GCS Azoxy 25C, Quadris, Satori Fungicide, Tetraban, Trevo (azoxystrobin)	6 fl oz	92.3 fl oz	Dry beans: 14 Succulent: 0	4 hr	No more than 2 sequential applications before alternating to a non-FRAC 11 fungicide.
	11	Azteroid FC 3.3 (azoxystrobin)	3.9 fl oz	58.2 fl oz	Dry: 14 Succulent: 0	4 hr	No more than 2 sequential applications before alternating to a non-FRAC 11 fungicide.
	11	Headline Headline SC (pyraclostrobin)	9 fl oz	18 fl oz	Succulent: 7 Dry: 21	0.5	No more than 2 sequential applications before alternating to a non-FRAC 11 fungicide.
	11	Evito 480SC (fluoxastrobin)	4.75 fl oz	9.5 fl oz	7	0.5	No more than 2 sequential applications before alternating to a non-FRAC 11 fungicide.
	11 + 3	Aframe Plus, Atticus Aquila XL, Cover XL, GCS AzoxyProp, Microp Fungicide, Propaz, Quilt Xcel (azoxystrobin + propiconazole)	14 fl oz	42 fl oz	Dry: 14 Succulent: 7	0.5	Supplemental label: Do not use on cowpea cultivars intended for livestock.
Botrytis or Gray mold	M1	Cueva (copper octanoate)	2 gal		0	4 hr	

Pertinent Diseases or Pathogens	Fungicide Group ¹	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks ²
			Appl.	Season	Harvest	Reentry	
	M5	(chlorothalonil) Many brands available: Bravo Ultrex, Bravo Weather Stik, Bravo ZN, Chlorothalonil 720, Echo 720, Echo 90 DF, Echo ZN, Equus 720 SST, Initiate 720, Initiate ZN, Oranil 6L, Praiz, Rialto 720 F	SEE INDIVIDUAL LABEL	Snap: 12 pt Dry: 8 pt	Succulent: 7 Dry: 14	0.5	Do not use on crops for livestock.
	1	3336 EG, 3336 F, 3336 WP, Miramar Fungicide, Nufarm T-Methyl 4.5 F Fungicide, Talaris 4.5 F, Talaris 50 WPS, Talaris 70 WSB, Topsin 4.5 FL Fungicide, Topsin M WSB Fungicide (thiophanate-methyl)	SEE INDIVIDUAL LABEL		14 to 28 (see label)	Succulent: 1 Dry: 3	Apply once at 50%–70% bloom or twice (max=1.5 lb per application) with first at 10%–30% bloom and second at peak bloom.
	2	Meteor, Nevado 4F, Rovral 4 Flowable (iprodione)	2 pt	4 pt	0	1	Limit 2 applications per season. Not for use as livestock feed.
	7	Endura (boscalid)	11 oz	22 oz	Succulent: 7	0.5	Limit 2 applications per crop, and alternate chemistry.
	7	Fontelis (penthiopyrad)	30 fl oz	72 fl oz	0	0.5	
	7	Kenja 400SC fungicide (isofetamid)	17 fl oz	34 fl oz	Snap bean: 7 Dry bean: 30	0.5	
	9	Vango WG (cyprodinil)	7 oz	28 oz	7	0.5	
	29	Omavo, Orbus 4 F (fluzinam)	13.6 fl oz	84 fl oz	Succulent: 14 Dry: 30	0.5	
	29	Omega 500F (fluzinam)	13.6 fl oz	81.6 fl oz	14	0.5	
	29	Vantana (fluzinam)	13.6 fl oz	27.2 fl oz	14 (succulent) 30 (dry)	0.5	
	7 + 11	Priaxor Xemium (fluxapyroxad + pyraclostrobin)	8 fl oz	16 fl oz	7	0.5	Limit 2 applications per season. Crop cannot be used for livestock until 14 days after last application.
	7 + 12	Miravis Prime (pydiflumetofen + fludioxonil)	13.4 fl oz	36.5 fl oz	14	0.5	Minimum Application Interval: 14 days
	9 + 12	Switch 62.5WG (cyprodinil + fludioxonil)	14 oz	56 oz	7	0.5	
Cercospora leaf spot	M1	Nordox 75 WG (cuprous oxide)	2.5 lb			0.5	

Pertinent Diseases or Pathogens	Fungicide Group ¹	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks ²
			Appl.	Season	Harvest	Reentry	
	M1 + M1	Badge SC Badge X2 (copper hydroxide + copper oxychloride)	2 pt	SC: 16.6 pt X2: 16.9 pt	0	Greenhouse: 1 Field: 2	
	M1 + M1	C-O-C-SWDG (basic copper sulfate + copper oxychloride)	1.5 lb	9.2 lb		2	
	3	Provyisol (mefentrifluconazole)	5 fl oz	15 fl oz	21	0.5	
	7	Fontelis (penthiopyrad)	30 fl oz	72 fl oz	0	0.5	
	3 + 7	Revylok (mefentrifluconazole + fluxapyroxad)	6.5 fl oz	13 fl oz	21	0.5	
	3 + 11	Veltyma (pyraclostrobin + mefentrifluconazole)	10 fl oz	20 fl oz	21	0.5	
	7+3+11	Miravis Neo (pydiflumetofen + propiconazole + azoxystrobin)	13.7 fl oz	27.4 fl oz	14	0.5	Limit 2 applications per crop. Minimum application interval 14 days.
	7 + 11	Priaxor Xemium (fluxapyroxad + pyraclostrobin)	8 fl oz	16 fl oz	7	0.5	Limit 2 applications per season. Crop cannot be used for livestock until 14 days after last application.
	11	Headline Headline SC (pyraclostrobin)	9 fl oz	18 fl oz	Succulent: 7 Dry: 21	0.5	Limit 2 applications per crop, and alternate chemistry.
Downy mildew	M1	(copper compounds) Many brands available: Basic Copper 53, Champ Formula 2 Flowable, Champion++, Cueva, Cuprofix Ultra 40 Dispers, Kocide 2000 Fungicide, Kocide 3000, Nordox 75 WG, Nu-Cop 30 HB, Previsto	SEE INDIVIDUAL LABEL		4 hr to 2 days (see label)		
	M1 + M1	Badge SC Badge X2 (copper hydroxide + copper oxychloride)	2 pt	SC: 16.6 pt X2: 16.9 pt	0	Greenhouse: 1 Field: 2	
	M1 + M1	C-O-C-SWDG (basic copper sulfate + copper oxychloride)	1.5 lb	9.2 lb		2	

Pertinent Diseases or Pathogens	Fungicide Group ¹	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks ²
			Appl.	Season	Harvest	Reentry	
	M1 + 4	Ridomil Gold/Copper (copper hydroxide + mefenoxam)	2 lb	8 lb	3	2	Limit 4 applications per crop.
	4	Ridomil Gold SL (mefenoxam)	0.2 pt	0.8 pt	3	2	Must be tank mixed with other effective fungicides.
	4	Ultra Flourish (mefenoxam)	0.4 pt	Soil: 2.0 pt Foliar: 1.6 pt	3	2	Must be tank mixed with other effective fungicides.
	3 + 11	Veltyma (pyraclostrobin + mefentrifluconazole)	10 fl oz	20 fl oz	21	0.5	Suppression only.
	7 + 11	Priaxor Xemium (fluxapyroxad + pyraclostrobin)	8 fl oz	16 fl oz	7	0.5	Limit 2 applications per season. Crop cannot be used for livestock until 14 days after last application.
	11	Headline Headline SC (pyraclostrobin)	9 fl oz	18 fl oz	7	0.5	Limit 2 applications per crop, and alternate chemistry.
	21	Ranman 400SC Fungicide (cyazofamid)	2.75 fl oz	16.5 fl oz	0	0.5	Not labeled for cowpea used for livestock feed. No more than 3 sequential applications before rotating chemistry.
	40	Revus (mandipropamid)	8 fl oz	32 fl oz	1	4 hr	
Fusarium seedling blight, Fusarium root rot (Most are biologicals and biorationals – see chapter 19)	3	Ace 3.8L ST (ipconazole)	0.085 fl oz/100 lb seed			0.5	
Phytophthora	11	Reason 500 SC (fenamidone)	8.2 fl oz	24.6 fl oz	3	0.5	For pod rot (<i>Phytophthora capsici</i>)
	21	Ranman 400SC Fungicide (cyazofamid)	2.75 fl oz	16.5 fl oz	0	0.5	
	43	Presidio (flupicolide)	4 fl oz	12 fl oz	0	0.5	
Powdery mildew	M1	Cueva (copper ocanoate)	2 gal		0	4 hr	OMRI-listed. ²
	M2	Many brands available: Microfine Sulfur, Microthiol Disperss, Suffa, Sulfur 90W, THAT Flowable Sulfur, Thiolux, TriTek, Wettable Sulfur	SEE INDIVIDUAL LABEL		1		Do not apply during periods of warm weather to avoid phytotoxicity.

Pertinent Diseases or Pathogens	Fungicide Group ¹	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks ²
			Appl.	Season	Harvest	Reentry	
	3	Provyso (mefentrifluconazole)	5 fl oz	15 fl oz	21	0.5	
	3 + 11	Veltyma (pyraclostrobin + mefentrifluconazole)	10 fl oz	20 fl oz	21	0.5	
	7	Fontelis (penthiopyrad)	30 fl oz	72 fl oz	0	0.5	
	3 + 7	Revylot (mefentrifluconazole + fluxapyroxad)	6.5 fl oz	13 fl oz	21	0.5	
	3 + 11	Veltyma (pyraclostrobin + mefentrifluconazole)	10 fl oz	20 fl oz	21	0.5	
	7 + 3	Luna Experience (fluopyram + tebuconazole)	12.8 fl oz	25.6 fl oz	14	0.5	Do not make more than 2 sequential applications of Luna Experience or any Group 7- or Group 3-containing fungicide before rotating with a fungicide of a different group.
	7 + 12	Miravis Prime (pydiflumetofen + fludioxonil)	9.2 fl oz	36.5 fl oz	14	0.5	Minimum Application Interval: 14 days.
	7 + 3 + 11	Miravis Neo (pydiflumetofen + propiconazole + azoxystrobin)	13.7 fl oz	27.4 fl oz	14	0.5	Minimum Application Interval: 14 days.
	7 + 11	Priaxor Xemium (fluxapyroxad + pyraclostrobin)	8 fl oz	16 fl oz	Succulent: 7 Dry: 21	0.5	Do not make more than 2 applications per season.
	11	Approach (picoxystrobin)	12 fl oz	24 fl oz	14	0.5	
	11	Headline Headline SC (pyraclostrobin)	9 fl oz	18 fl oz	7	0.5	Limit 2 applications per crop, and alternate chemistry.
Pythium damping-off & root rot	4	ReCon 4F (metalaxyl)	2 pt			2	May be made preplant incorporated, or at a soil surface spray after planting.
	4	ReCon Bold SL (mefenoxam)	1.0 pt	1.0 pt		2	May be made preplant incorporated, or at a soil surface spray after planting.
	4	Ridomil Gold SL (mefenoxam)	0.2 pt	0.8 pt	3	2	Must be tank-mixed with other effective fungicides.
	4	Thrive 4M (mefenoxam)	3.1 fl oz	15.7 fl oz	3	2	For succulent beans.
	4	Ultra Flourish (mefenoxam)	2 pt			2	Apply as a broadcast soil application at preplant or as a surface application at planting.

Pertinent Diseases or Pathogens	Fungicide Group ¹	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks ²
			Appl.	Season	Harvest	Reentry	
	4	Xylar FC Fungicide (metalaxyl)	45.7 fl oz	45.7 fl oz		2	Broadcast or banded application as a soil application prior to planting.
	11	Reason 500 SC (fenamidone)	8.2 fl oz	24.6 fl oz	3	0.5	For cottony leak (<i>Pythium</i> spp.)
	4 + 11	Uniform (mefenoxam + azoxystrobin)	0.34 fl oz/1000 ft row			0	
Rhizoctonia diseases	3	Tilt (propiconazole)	4 fl oz	12 fl oz	7	0.5	For web blight (<i>Rhizoctonia solani</i>)
	7	Zelera Fungicide (inpyrflumaxam)	0.2 fl oz/100 lb seeds			0.5	
	3 + 7 + 11	Miravis Neo (pydiflumetofen + propiconazole + azoxystrobin)	13.7 fl oz	27.4 fl oz	14	0.5	For web blight (<i>Rhizoctonia solani</i>)
	4 + 11	Uniform (mefenoxam + azoxystrobin)	0.34 fl oz/1000 ft row			0	Make only 1 application per season.
	11	Aframe, Azoxystrobin SC, GCS Azoxy 2SC, Quadris (azoxystrobin)	0.8 fl oz/1000 row ft			4 hr	For <i>Rhizoctonia</i> root rot (<i>Rhizoctonia solani</i>)
	11	Azoxystar (azoxystrobin)	3.75 fl oz/100 lb seed			4 hr	Seed treatment
	11	Azoxystrobin SC (azoxystrobin)	0.8 fl oz/1000 row ft			0	
	11	Azteroid FC 3.3 (azoxystrobin)	9.7 fl oz	58.2 fl oz	Dry: 14 Succulent: 0	4 hr	For web blight (<i>Rhizoctonia solani</i>)
	11	Evito 480SC (fluoxastrobin)	0.24 fl oz/1000 row feet		7	0.5	
	11	Quadris, Tetraban Fungicide, Trevo (azoxystrobin)	15.5 fl oz	92.3 fl oz	Dry: 14 Succulent: 0	4 hr	For web blight (<i>Rhizoctonia solani</i>)
	11	Satori Fungicide, Tetraban, Trevo (azoxystrobin)	0.8 fl oz/1000 row ft				For <i>Rhizoctonia</i> root rot (<i>Rhizoctonia solani</i>)
	11 + 3	Aframe Plus, Cover XL, GCS AzoxyProp, MiCrop Fungicide, Propaz, Quilt Xcel (azoxystrobin + propiconazole)	14 fl oz	42 fl oz	Dry: 14 Succulent: 7	0.5	For web blight (<i>Rhizoctonia solani</i>)

Pertinent Diseases or Pathogens	Fungicide Group ¹	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks ²
			Appl.	Season	Harvest	Reentry	
Southern blight	11	Aframe, Arius 250, Atticus Acadia 25C, AzoxyStar, Azoxystrobin SC, GCS Azoxy 25C, Quadris, Satori Fungicide, Tetraban Fungicide, Trevo (azoxystrobin)	15.5 fl oz	92.3 fl oz	Dry: 14 Succulent: 0	4 hr	
	11	Azteroid FC 3.3 (azoxystrobin)	9.7 fl oz	58.2 fl oz	Dry: 14 Succulent: 0	4 hr	
	11	Evito 480SC (fluoxastrobin)	4.75 fl oz	9.5 fl oz	7	0.5	
	3	Tilt (propiconazole)	4 fl oz	12 fl oz	7	0.5	
	11 + 3	Atticus Aquila XL, GCS AzoxyProp, Microp Fungicide, Propaz, Quilt Xcel (Azoxystrobin + propiconazole)	14 fl oz	42 fl oz	Dry: 14 Succulent: 7	0.5	
White mold	M1	Cueva (copper ocanoate)	2 gal		0	4 hr	OMRI-listed. ²
	1	(thiophanate-methyl) Many brands available: 3336 EG, 3336 F, 3336 WP, Incognito 4.5F, Miramar Fungicide, Nufarm T-Methyl 4.5 F Fungicide, Talaris 4.5 F, Talaris 50 WPS, Talaris 70 WSB, Topsin 4.5FL Fungicide, Topsin M WSB Fungicide	SEE INDIVIDUAL LABEL		14-28 (see label)	Succulent: 1 Dry: 3	Apply once at 50%-70% bloom or twice (max=1.5 lb per application) with first at 10%-30% bloom and second at peak bloom.
	1 + 3 + 11	Trevo Packed (thiophanate-methyl + tebuconazole + azoxystrobin)	30 fl oz		Fresh: 14 Dry: 28	1	
	2	Meteor, Nevado 4F, Rovral 4 Flowable (iprodione)	2 pt	4 pt	0	1	Limit 2 applications per season. Not for use as livestock feed.
	7	Bonafide (boscalid)	11 oz	22 oz	Dry: 14 Succulent: 7	0.5	Make application at the beginning of flowering. Do not make more than 2 sequential applications before alternating to a non-FRAC 7 fungicide.
	7	Endura (boscalid)	11 oz	22 oz	Succulent: 7	0.5	Limit 2 applications per crop, and alternate chemistry.

Pertinent Diseases or Pathogens	Fungicide Group ¹	Chemical (Active Ingredients)	Max Rate/Acre		Min. Days to		Remarks ²
			Appl.	Season	Harvest	Reentry	
	7	Kenja 400SC fungicide (isofetamid)	17 fl oz	34 fl oz	Snap bean: 7 Dry bean: 30	0.5	
	7	Fontelis (penthiopyrad)	30 fl oz	72 fl oz	0	0.5	No more than 2 sequential applications before alternating to a non-FRAC 7 fungicide.
	7 + 11	Priaxor Xemium (fluxapyroxad + pyraclostrobin) (Suppression only)	8 fl oz	16 fl oz	7 or 21	0.5	Limit 2 applications per season. Crop cannot be used for livestock until 14 days after last application.
	7 + 12	Miravis Prime (pydiflumetofen + fludioxonil)	13.4 fl oz	36.5 fl oz	14	0.5	Suppression only. Minimum Application Interval: 14 days.
	9 + 12	Switch 62.5 WG (cyprodinil + fludioxonil)	14 oz	56 oz	7	0.5	
	14	Botran 5F (DCNA dician)	1.3 qt	3.2 qt	2	0.5	Do not feed treated plants to livestock.
	29	Omavo Orbus 4 F (fluazinam)	13.6 fl oz	84 fl oz	14 (succulent) 30 (dry)	0.5	
	29	Omega 500F (fluazinam)	13.6 fl oz	81.6 fl oz	Edible, podded, and succulent beans: 14	2	
	29	Vantana (fluazinam)	13.6 fl oz	27.2 fl oz	Succulent: 14 Dry: 30	0.5	
	7 + 3 + 11	Miravis Neo (pydiflumetofen + propiconazole + azoxystrobin)	13.7 fl oz	27.4 fl oz	14	0.5	Suppression only. Minimum Application Interval: 14 days

¹FRAC code (fungicide group): Number (1–54) 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 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 2024; <http://www.frac.info/> (FRAC = Fungicide Resistance Action Committee).

²Information 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. OMRI-listed: Listed by Organic Materials Review Institute for use in organic production.

Table 8. Nonfumigant nematicides for legume crops in Florida.

Product	Application Directions
Mocap 15G (a.i. ethoprop)	Apply 13 lbs/A (36-inch row spacing) or 0.9 lb/1,000 linear ft of row in a band of 15 inches wide on the row at-planting. Mix with the top 2–4 inches of soil with mechanical equipment right after application. If broadcast, apply 34 lb/A from 1 week before planting to at planting time and mix with 2–4 inches of soil. DO NOT use as a seed furrow treatment or allow granules to contact the seed. Only 1 application per season.
Velum (a.i. fluopyram)	Apply 4.0–5.0 fl oz/A in seed furrow and cover with soil, or chemigation into root-zone through low-pressure drip or trickle irrigation. Do not apply more than 13.7 fl oz of Velum (0.446 lb fluopyram) per acre per year, regardless of formulation or method of application (soil or foliar). Do not apply within 14 days of harvest.
Biological nematicides	See chapter 19

Table 9. Fumigant nematicides for legume crops in Florida.

Nematicide	Broadcast Application ¹		In-the-Row Applications
	Gallons per Acre	fl oz/1000 ft/chisel-spaced 12" apart	
Telone II ^{2,3}	9–12	26–35	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 ^{2,3}	10.8–17.1	31.8–50.2	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 ^{2,3}	13–20.5	38–60	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.
Pic-Clor 60	19–31.5	57–90	For any row spacing, application rates should never exceed the labeled maximum for broadcast applications. Consult the product label for additional detail.
Vapam HL	75	-	For drip or in-row chisel fumigation, consult product label for proportionately reduced overall rates, drip concentration, and flow-modifying directions and procedures.
KPam HL	60	-	For drip or in-row chisel fumigation, consult product label for proportionately reduced overall rates, drip concentration, and flow-modifying directions.
Allyl Isothiocyanate (AITC) Dominus	40	-	For drip or in-row fumigation and crop termination, consult product label for overall rates, drip concentration, and other flow-modifying directions.

¹ 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.

² 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 new label details for additional use restrictions based on soil characteristics, buffer zones, requirements for Fumigant Management Plans (FMP) and personal protective equipment (PPE), mandatory good agricultural practices (GAPs), product and applicator training certification, and other rate-modifying recommendations with use of highly retentive mulch films.

³ 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.