

2026–2027 Florida Citrus Production Guide: Herbicide Recommendation Tables¹

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Recommended Chemical Controls

Use these tables with Chapter 42 (“Weeds”) in booklet 1 of the *Florida Citrus Production Guide*. **ALWAYS READ THE HERBICIDE PRODUCT LABEL BEFORE USE**, as labels are updated regularly.

Apply preemergence herbicides to weed-free soil before emergence; consult booklet 1 for timing and soil type before selecting products from Table 1.

Nonselective postemergence systemic herbicides translocate (move) through the plant, controlling weeds from the foliage down to the roots. Consult booklet 1 for when to spray postemergence herbicide products and how weather can affect their performance.

Glyphosate products differ in acid equivalent (A.E.) concentration. Use Table 3 to calculate how much product to use based on the A.E. rate listed in Table 2. Refer to booklet 1 to see how water quality and spray volume affect glyphosate performance.

Contact postemergence herbicides only affect the plant tissue directly reached by the spray. Regrowth from perennial species should be expected. Thorough coverage and appropriate adjuvants are essential; refer to booklet 1 for application equipment and band width guidance.

Selective postemergence herbicides target either grasses or broadleaf weeds, not both. Correct weed identification is essential before choosing a product. See booklet 1 for scouting guidance.

Rotating herbicide chemical families (modes of action) helps delay herbicide tolerance and resistance development. Booklet 1 addresses herbicide tolerance and resistance management. Switching modes of action limits selection pressure from repeated use of the same product. Use Table 6 with Tables 1 through 5 to put together a rotation program using different modes of action.

Root sprouts from cut citrus stumps can reestablish unwanted vegetation and, where root grafting exists, may allow translocated herbicides to injure adjacent trees.

Booklet 1 details safe application methods and precautions for stump treatments. Apply products from Table 7 immediately after cutting for best results and follow all label requirements.

Table 1. Preemergence soil residual herbicides.

Herbicide Name	HRAC MOA ¹	Rate per Treated Acre; Time of Application	Comments
Indaziflam Alion	L — Cellulose- biosynthesis inhibitor	5–6.5 oz/acre. Do not exceed 10.3 oz/acre per 12-month period.	Preemergence control of seed-germinating grass and broadleaf weeds. A postemergence herbicide should be tank-mixed to control weeds that have already emerged at the time of application. Best control is achieved when minimal weed debris is present on the soil surface at application. Avoid spray contact with foliage (direct or indirect), as it may cause chlorotic speckling. Do not apply Alion within 30 days prior to planting or within 30 days after planting citrus trees. For repeat application, allow a minimum of 90 days between applications.
Bromacil Hyvar X 80 WP	C1	Soil restriction (Ridge): Do not use on vulnerable, deep-sandy, ridge soil types. See product label under general precautions and use restrictions for specific soil series.	Controls annual and perennial grasses and annual broadleaf weeds. Postemergence activity, particularly with a surfactant.
		Soil restriction (Flatwoods): Do not exceed a total of 6 lb/acre per year.	
Trees 4 years and older		2–4 lb. The higher recommended rates may be required for heavier soil types and for certain established perennial grass species. Apply prior to weed emergence or during early postemergence (seedling stage).	
Trees established 1–3 years		2–3 lb. Use lower recommended rates on lighter soils or in low weed-infestation areas. Do not exceed maximum allowable yearly rates.	
Bromacil:Diuron Krovar I DF	C1, C2	Soil restriction (Ridge): Do not use on vulnerable, deep-sandy, ridge soil types. See supplemental product label for further details.	Controls annual broadleaf weeds, annual vines, and annual and perennial grasses. Extra diuron in product increases activity on broadleaf weeds. Contact activity enhanced by the surfactant.
		Soil restriction (Flatwoods): Do not exceed 12 lb/acre per year.	
Trees 3 years and older		4–6 lb/acre. Apply prior to weed emergence or early postemergence.	
Trees established 1–3 years		2–4 lb/acre. Do not exceed 8 lb per year. Use lower rates on lighter soils or in low weed-infestation areas.	

Herbicide Name	HRAC MOA ¹	Rate per Treated Acre; Time of Application	Comments
Flumioxazin Chateau EZ	E	6–12 oz/acre. Maximum rate of 24 oz/acre per 12-month period. Do not make a sequential application within 30 days of the first application.	Apply prior to weed emergence or during early postemergence (seedling stage). Residual weed control will be reduced if vegetation prevents herbicide from reaching the soil surface. When weeds are present, application must be mixed with a labeled surfactant and burndown product. Do not apply to trees less than 1 year old unless protected from spray contact by non-porous wrap. Rainfall or irrigation of at least ¼ inch is required to activate the herbicide into soil for weed control.
Diuron	C2		Do not exceed 8 lb a.i./acre per year on flatwoods soils. Do not exceed 6.4 lb a.i./acre per year on ridge soils. In Highlands County, do not exceed 4.8 lb a.i./acre per year. Do not exceed 2 lb or 2 qt per application on trees less than 1 year old on shallow, poorly drained soils. Do not apply to row middles. Apply prior to weed emergence or early postemergence.
Diuron 80DF		2–4 lb product	Controls annual broadleaf weeds and annual grasses. Contact activity enhanced by addition of surfactant. Foliage contacted by diuron may develop a bleached or bronzed appearance. Certain grapefruit varieties, like 'Flame', are relatively more sensitive to this herbicide.
Direx/Diuron 4L		1.6–3.2 qt	
Karmex 80DF		2–4 lb product	
Norflurazon Solicam 80DF	F1	2.5–5 lb/acre. Do not exceed 10 lb per year. For best results, apply prior to weed emergence.	Controls annual and perennial grasses and certain broadleaf weeds. Spectrum of broadleaf weeds controlled increased by tank mixing with simazine or diuron. Suppresses established nutsedge and perennial grasses; control requires repeat applications. Dense weed growth should be controlled with contact or systemic herbicides prior to Solicam application to allow maximum contact with the soil surface. Tank mixes with postemergence contact or systemic herbicides may be used where weed growth is low-growing and sparse. Solicam activity is highly dependent on good soil moisture following application, i.e., rainfall or irrigation. Contact with tree canopy can result in a bleached appearance and some distortion of young growth flushes.

Herbicide Name	HRAC MOA ¹	Rate per Treated Acre; Time of Application	Comments
Solicam 80DF Water ring treatment	F1	2.3 oz/500 gal water. Apply 10 gal per tree assuming a ring diameter of 4 ft. Adjust rate according to ring diameter and amount of water. Apply prior to weed emergence. See product label for details. Apply at second or third watering — not during the planting operation.	
Chemical injection through low-volume subcanopy irrigation systems		2–3 lb. Apply prior to weed emergence as a supplemental treatment to herbicide strip. No treated area should receive more than 10 lb/acre per year from any combination of applications.	Solicam applied through irrigation systems will prolong weed control in areas influenced by emitters from which herbicides may have leached. Rate per acre should be based on measurement of area wetted by emitters and number of emitters per acre. See product label for calibration procedures. CAUTION: To be used only through irrigation systems that meet state requirements for chemical injection.
Oryzalin Oryzalin 4 AS Surflan 4 AS	K1	Do not exceed 1.5 gal per year. Apply prior to weed emergence; Surflan does not have postemergence activity. 0.5–1.5 lb/acre.	Controls annual grasses and certain broadleaf weeds. Does not control perennial grasses or sedges. Spectrum of broadleaf weeds controlled is increased by tank mixing with simazine, diuron, or Krovar I. Will not control weeds that have germinated prior to application. Tank mixes with postemergence herbicides, such as paraquat or glyphosate, should be used to control existing weeds. ½ to 1 inch rainfall or sprinkler irrigation is required to activate oryzalin and move it into the zone of weed-seed germination. Oryzalin will extend residual control of susceptible weeds when used in tank mixes with other products.
Chemical injection through low-volume subcanopy irrigation systems		Apply prior to weed emergence as supplemental treatment to herbicide strip. No treated area should receive more than 1.5 gal per tree of oryzalin per acre per year from any combination of applications. See label for instructions for calculating product rates.	Oryzalin applied through irrigation systems will prolong weed control in areas influenced by emitters from which other herbicides have leached. Rate per acre should be based on measurement of area wetted by emitters and number of emitters per acre. See product label for further restrictions and for calibration procedures. CAUTION: To be used only through irrigation systems that meet state requirements for chemical injection.
Pendimethalin Prowl 3.3EC (Nonbearing only)	K1	2.4–4.8 qt/acre. Do not exceed 7.3 qt/acre per year.	Controls annual grasses. Does not control sedges. Spectrum of broadleaf weeds controlled is increased by tank mixing with

Herbicide Name	HRAC MOA ¹	Rate per Treated Acre; Time of Application	Comments
Prowl H ₂ O		2.1–6.3 pt/acre. Do not exceed 6.3 qt/acre per year.	diuron. Tank mixes with postemergence herbicides, such as paraquat or glyphosate, should be used to control existing weeds. Rain or irrigation is required within 21 days to move pendimethalin into the zone of weed-seed germination.
Simazine	C1	For application to oranges and grapefruit only. Do not exceed 8 lb a.i./acre per year.	
Caliber 90WDG		4.4 lb (spring and/or fall) or a single application of 8.8 lb in the spring applied once per 12 months.	Controls annual broadleaf weeds, annual vines, and annual grasses. Does not control perennial grasses.
Princep 4L		1.0 gal (spring and/or fall) or a single application of 2.0 gal/acre in the spring once per 12 months.	Higher single application rates are intended for difficult species, such as balsam-apple and Spanish needles, and for a spring application.
Simazine 4L		1.0 to 2.0 gal product. 2 gal/acre in spring (ridge), 3.2 qt in bedded groves; apply only once per year.	Do not exceed 4 lb a.i. per treated acre per year on trees established for less than 1 year, on sandy soils with low organic matter content, or on poorly drained sites. Apply only prior to weed emergence unless mixed with a postemergence contact or systemic herbicide. Has no contact activity. Avoid application during summer rainy period.
Simazine 90DF		4.4 lb (spring and/or fall) or a single application of 8.8 lb in the spring applied once per 12 months.	
¹ Mode of action class for citrus pesticides from the Herbicide Resistance Action Committee (HRAC). Refer to chapter 4, " Pesticide Resistance and Resistance Management ."			

Table 2. Nonselective postemergence systemic herbicides.

Herbicide Name	HRAC MOA ¹	Rate per Treated Acre in Acid Equivalent (A.E.); Time of Application ²	Comments
Glyphosate — undertree	G	Annual weeds: 0.75–1.5 lb A.E./acre, depending on stage of maturity. Perennial weeds: 1.5–3.75 lb A.E./acre. Use higher rates for more difficult-to-control grasses, woody vines, and shrubs. Refer to product labels for annual maximum rate per acre.	Consult label rates for specific weed species. Some weeds require repeat application for control. Apply in (water volume of) 10–40 GPA. Glyphosate may be tank mixed with labeled residual herbicides. Water sources containing Ca, Mg, Fe, and Al at levels above 400 ppm may require the use of ammonium sulfate at a 1%–2% solution (8.5–17 lb per 100 gal) for optimum activity. Rainfall within 1–6 hours after application may reduce effectiveness (product-dependent). AVOID CONTACT WITH CITRUS FRUIT, FOLIAGE, AND GREEN BARK. Application to early-maturing varieties in late summer/early fall may result in fruit drop when contacted by spray drift. Not all formulations of glyphosate contain surfactant. Addition of surfactant improves weed control if not present in original product.
Glyphosate — spot treatment	G	1%–2% solution	AVOID CONTACT WITH CITRUS FRUIT, FOLIAGE, AND GREEN BARK.
Middles Management			
Glyphosate — chemical mowing	G	Bahiagrass: 0.125 lb A.E. followed by a second application 45 days later. Bermudagrass: 0.125–0.37 lb A.E.	For suppression of grasses and broadleaf weeds in row middles for 45–90 days. Do not mow within 1 week before or after chemical mowing application.
Glyphosate — wiping	G	5%–10% solution — carpet wiper 50%–100% solution — panel wiper	Use wipers to remove tall-growing and difficult-to-control weed species from desirable turf.
¹ Mode of action class for citrus pesticides from the Herbicide Resistance Action Committee (HRAC). Refer to chapter 4, " Pesticide Resistance and Resistance Management ." ² NOTE: See Table 3 for conversion of A.E. to amount of product to use to achieve desired weed control.			

Table 3. Nonselective postemergence systemic herbicide-glyphosate conversions.

Product ¹ Acid Equivalence (A.E.) (lb/gal)	Target Rate per Treated Acre in A.E. (from Table 2)						
	0.094 lb	0.188 lb	0.282 lb	0.37 lb	0.75 lb	1.5 lb	2.25 lb
	Amount of Product to Equal the Above Pounds of A.E.						
3.0	4 oz	8 oz	12 oz	16 oz	1 qt	2 qt	3 qt
4.0	3 oz	6 oz	9 oz	12 oz	24 oz	48 oz	72 oz
4.5	2.7 oz	5.4 oz	8.1 oz	10.8 oz	21.5 oz	43 oz	64.5 oz
5.0	2.4 oz	4.8 oz	7.2 oz	9.5 oz	19.2 oz	38.4 oz	57.6 oz

Product ¹ Acid Equivalence (A.E.) (lb/gal)	Target Rate per Treated Acre in A.E. (from Table 2)						
	0.094 lb	0.188 lb	0.282 lb	0.37 lb	0.75 lb	1.5 lb	2.25 lb
	Amount of Product to Equal the Above Pounds of A.E.						

¹ Various formulations of glyphosate are currently registered for use in Florida citrus. It is important to adjust the application rate used according to the product concentration. A product concentration is stated in pounds per gallon of acid equivalent (A.E.) on the label.

Table 4. Nonselective postemergence contact herbicides.

Nonselective Postemergence Herbicide	HRAC MOA ¹	Rate per Treated Acre; Time of Application	Comments
Carfentrazone-ethyl Aim 2 EC	E	Up to 2.0 fl oz per application and not to exceed 7.9 fl oz per year. Tank-mixing with other postemergence products increases weed spectrum controlled. Higher rates are needed when larger weeds are present.	An adjuvant, such as a nonionic surfactant or crop oil concentrate, is required. Avoid contact with green tissue or fruit. Good coverage is essential for control. Apply in a finished spray volume of at least 20 GPA. Do not make applications less than 14 days apart.
Glufosinate-ammonium Rely 280 Scout	H	48–82 fl oz/acre per application with higher rates on taller, susceptible weeds. Do not apply more than 246 fl oz (4.5 lb a.i./acre) per year. Do not make more than 3 applications at maximum rate per year. Do not apply within 14 days of harvest.	For best results, apply to emerged, young, actively growing weeds. Warm temperatures, high humidity, and bright sunlight improve performance. Avoid application to weeds under stress. Avoid application during conditions where temperature inversions that would favor drift are likely. Avoid contact or spray drift with green bark, stems, or foliage, because injury may occur. Young trees with green stems should have a nonporous wrap in place to avoid contact with susceptible tissue. Follow-up applications must be a minimum of 14 days apart.
Paraquat Gramoxone SL 2.0	D	2.5–4.0 pt/acre. Do not apply in excess of 20 pt/acre per year. Apply as required alone or in combination with residual herbicides to control emerged weeds. Apply before weed growth becomes too dense, as thorough spray coverage is required.	Controls all green weed tissue contacted. Rapid regrowth can be expected from perennial species. New labeling requirements require mandatory training program be completed by all applicators, and all applicators must be certified applicators of restricted use pesticides. Addition of a surfactant is essential for maximum contact activity. AVOID CONTACT WITH CITRUS FOLIAGE, GREEN STEMS, AND FRUITS. Maximum of 5 applications per year.
¹ Mode of action class for citrus pesticides from the Herbicide Resistance Action Committee (HRAC). Refer to chapter 4, "Pesticide Resistance and Resistance Management."			

Table 5. Selective postemergence systemic herbicides.

Herbicide Name	HRAC MOA ¹	Rate per Treated Acre; Time of Application	Comments
Fluazifop-p-butyl Fusilade DX 2 EC	A	Do not apply more than 24 oz/acre per application and not more than 72 fl oz/acre per year, with a minimum of 21 days between applications. Apply as needed to control emerged, actively growing grasses. Repeat applications may be necessary to control many species. Grasses are most susceptible at early growth stages (before seedhead formation.)	Controls annual grasses and perennials such as Bermuda, guinea, and torpedo. Does not control broadleaf weed species. Repeat applications (at 3- to 4-week intervals) will be required for guinea grass and torpedograss. Guinea grass should be treated when 6–12 inches tall. Do not apply Fusilade to grasses under stressed conditions. Visible effects of herbicide activity on most grasses will be apparent in 2–3 weeks. If used according to label directions, Fusilade will not injure citrus. For spot treatment, use 1% v/v solution Fusilade with 1% crop oil concentrate or 0.25% nonionic surfactant in 30–40 GPA.
Mesotrione Broadworks 4 L	F2	Do not exceed 6 fl oz/acre at the first application. Do not exceed 12 fl oz/acre or more than 3 applications within a 12-month period. Allow at least 12 weeks between 2 subsequent applications of 6 fl oz/acre each, and at least 6 weeks between one application of 6 fl oz/acre and 1 or 2 subsequent applications of 3 fl oz/acre.	The use of a crop oil concentrate at 1% v/v or nonionic surfactant at 0.25% v/v is recommended. The addition of ammonium sulfate is suggested. Provides short-term residual weed control, and can be tank mixed with nonselective postemergence products to broaden the weed control spectrum, or with several preemergence products to lengthen residual weed control. Consult the label for allowable tank-mix partners.
Sethoxydim Poast Plus 1.0 EC	A	2.25–3.75 pt/acre. Do not exceed 15 pt/acre per year. Apply as needed to control actively growing grasses. Repeat applications may be necessary for perennial species and guinea grass.	Controls annual and perennial grasses such as Bermuda, guinea, and torpedo. Does not control broadleaf weeds. Repeat applications (at 3- to 4-week intervals) may be required for control of more troublesome species. It is advantageous to apply Poast Plus to grasses less than 12 inches in height. Do not apply Poast Plus to grasses under stress conditions. Visible effects will generally be observed within 2–3 weeks, depending upon environmental conditions. Carrier volume should not exceed 20 GPA. For spot treatment, use a 1.5%–2.25% v/v solution of Poast Plus with 1% crop oil concentrate. If used according to label directions, Poast Plus will not injure citrus.
Saflufenacil Treevix	E	1.0 oz per treated acre as a postemergence-directed spray application. For optimum burndown activity, an adjuvant such as methylated seed oil must be used and should be combined with ammonium sulfate.	Controls many broadleaf weeds. Does not control grass weeds. Thorough spray coverage is required for control of emerged broadleaf weeds. Avoid contact with tree trunks, especially young trees, until bark is fully formed. Do not exceed 3 applications per year; applications must be separated by 21 days. Increased efficacy has been observed at spray volumes of 20–40 GPA.

Herbicide Name	HRAC MOA ¹	Rate per Treated Acre; Time of Application	Comments
2,4-D Embed Extra	O	1.0–4.0 pt per treated acre as a postemergence-directed spray application. The application should be made only when there is no hazard from spray drift.	Controls annual and perennial broadleaf weeds. Use coarse, low-pressure sprays and sufficient water for thorough coverage of weeds. Apply when weeds are small and actively growing. Apply only to groves that have been established for at least 1 year. Avoid contact with tree trunks and foliage.
¹ Mode of action class for citrus pesticides from the Herbicide Resistance Action Committee (HRAC). Refer to chapter 4, " Pesticide Resistance and Resistance Management ."			

Table 6. Herbicide chemical family.

Herbicide Common Name	Chemical Family	HRAC MOA ¹	Weeds Controlled	
			Broadleaf	Grasses
Preemergence				
bromacil	uracils	C1		X
bromacil:diuron	uracils + ureas	C1, C2	X	X
diuron	ureas	C2	X	
flumioxazin	N-phenyl-imides	E	X	X
indaziflam	alkylazines	L2	X	X
norflurazon	pyridazinones	F1	X	X
oryzalin	dinitroanilines	K1		X
pendimethalin	dinitroanilines	K1		X
simazine	triazines	C1	X	X
Postemergence				
2,4-D	phenoxy-carboxylates	O	X	
carfentrazone-ethyl	N-phenyl-triazolinones	E	X	
fluazifop-p-butyl	aryloxyphenoxypropionates	A		X
glufosinate	phosphinic acid	H	X	X
glyphosate	glycine	G	X	X
glyphosate + 2,4-D	glycine + phenoxy-carboxylates	G, O	X	X
mesotrione	triketones	F2	X	
paraquat	pyridiniums	D	X	X
saflufenacil	uracils	E	X	
sethoxydim	cyclohexanediones	A		X
¹ Mode of action class for citrus pesticides from the Herbicide Resistance Action Committee (HRAC). Refer to chapter 4, " Pesticide Resistance and Resistance Management ."				

Table 7. Recommended chemical controls for citrus root sprouts.

Herbicide/Chemical	Application	Comments
Glyphosate (check specific product labels)	Apply in 50% to 100% solution to freshly cut surface immediately after cutting to cover the entire cambium layer of the stump. Delays in application may result in reduced performance.	Do not make stump applications when roots of desirable trees may be grafted to the roots of the cut stump. Injury may result from root grafting in adjacent trees allowing materials to move systemically into the nearby tree. NOTE: Not all glyphosate products contain a statement for stump treatments.
Triclopyr Remedy Ultra	Apply as a 25% solution in diesel, kerosene, or quality basal oil (1 qt in 3 qt oil). Apply spray mixture directly to cut stump, and avoid applications that allow spray solution to contact soil surface adjacent to the cut stump.	Applications to the soil adjacent to cut stump may injure newly transplanted trees. Do not replant within 30 days of treatment. Do not make stump applications when the roots of adjacent desirable trees may be grafted to the roots of cut stump. Injury or symptoms resulting from root grafting may occur in adjacent trees. Avoid application methods that would allow spray drift to occur.

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