HS194

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Weed Control in Potato [1]

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Weeds are a major problem in potato production in Florida. Weeds can reduce yields through direct competition for light, moisture and nutrients, and they harbor insects and diseases that attack potatoes. Early season competition of weeds is extremely critical and a major emphasis on control should be made during this period. Weeds present at harvest increase mechanical damage to the tubers, and reduce harvesting efficiency by slowing down the harvesting operation, leaving undug tubers in the ground and/or carrying them over the diviner chain.

Potatoes may be planted over a 7-month period in Florida. Over this period, the variable climatic conditions influence the diversity of weed species present and their severity. Growers should plan a total weed control program that integrates chemical, mechanical and cultural methods to fit their weed problems and production practices.

Cultivation is an effective way to manage weeds early in the season. Rolling cultivators behind the hilling blades can uproot many annual weeds that may have escaped preplant herbicides. Cultivation and hilling while useful also disrupts the efficacy of several soil-applied herbicides. For cultivars that require several hilling operations during the season, one of several herbicides may be applied during or directly following the hilling and cultivation. This combination of practices can greatly enhance and extend the weed control during the season.

Herbicide performance depends on weather, irrigation, soil, proper selection for weeds species to be controlled, and accurate application and timing. Obtain consistent results by reading the herbicide label and other information about the proper application and timing of each herbicide. To avoid confusion between commercial formulations, suggested rates listed in Table 1 are stated in pounds active ingredient per acre (lbs ai/acre). On marl and sandy soils with low organic matter, the lower rates should be applied. All herbicides listed below have been tested in research trials in Florida with successful results.

When applying a herbicide for the first time in a new area, use in a small trial area first. Before application of a herbicide, *carefully read and follow the label.*

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Table 1. Chemical weed controls: potatoes.

Herbicide	Labeled crops	Time of Application to Crop	Rates (lbs. AI./Acre)	
			Mineral	Muck
Carfentrazone (Aim)	Potato (All)	Preplant Directed-hooded row-middles	0.031	0.031
Remarks: Aim may be applied as a preplant burndown treatment and/or as a post-directed hooded application to row middles for the burndown of emerged broadleaf weeds. May be tank mixed with other registered herbicides. May be applied at up to 2 oz (0.031 lb ai). Use a quality spray adjuvant such as crop oil concentrate (coc) or non-ionic surfactant at recommended rates.				
Clethodim (Select) (Arrow)	Potato	Postemergence	0.1-0.25	0.1-0.25
Remarks: Control of emerged grasses. Always use a crop oil concentrate at 1% v/v in the finished spray volume unless tank mix instructions indicate otherwise. Do not apply within 30 days of harvest. Use 6 oz. to 16 oz. product to control actively growing grasses at recommended heights. For control of annual grasses, use 6 to 16 fl. oz/A, for perennial grasses, use 8 to 16 fl oz/A.				
DCPA (Dacthal W-75)	Potato	Preemergence or early layby	6.0-8.0	----
Remarks: Controls germinating annuals. Apply to moist soil. Note label precautions against replanting non-registered crops within 8 months.				
EPTC (Eptam 7E) (Eptam 10G)	Potato	Postemergence or early layby; Preplant, Dragoff, Layby	3.0 3.0	----
Remarks: Granular formulation may be applied preplant incorporated, at drag-off and incorporated or at layby and incorporated into clean cultivated soil. Emulsifiable formulation should not be applied on winter and early spring potatoes. Apply only after potatoes have emerged and true leaves have formed or at layby. There is a 45-day preharvest interval for application.				
S-Metolachlor (Dual 25G)	Potato	Preemergence Preplant incorporated Postplant incorporated	.95-1.9	----
Remarks: Applications must be made before crop emergence. Preemergence and postplant incorporated should be made after drag-off but before potato or weed emergence. May be tank mixed with Sencore/Lexone as preemergence treatment. When used alone, label states control of many grasses and broadleaf weeds including crabgrass, fall panicum, goosegrass, signalgrass, yellow nutsedge, galensoga, pigweed and Florida pusley. **Note:** Under prolonged cool, wet conditions, minor foliage injury has been seen.				
Metribuzin (Sencor DF) (Sencor 4)	Potato	Preemergence	0.5 - 1.0	----
Remarks: Apply to soil surface after drag-off but before crop emergence. Do not incorporate. Use lower rate on sandy soil.				
Metribuzin (Sencor DF) (Sencor 4)	Potato	Postemergence	0.25 - 0.5	----

Table 1. Chemical weed controls: potatoes.

Herbicide	Labeled crops	Time of Application to Crop	Rates (lbs. AI./Acre)	
			Mineral	Muck
Remarks: Not to be used on early maturing white or red skinned varieties. Apply only if there have been 3 consecutive days of sunny weather. Treat before weeds are 1 inch tall. Do not apply within 60 days of harvest. Split applications of pre plus postemergence may be made. Do not use more than 1 lb. per season.				
Paraquat (Gramoxone Inteon) (Firestorm)	Potato	Preemergence	0.47	0.47
Remarks: Controls emerged weed seedlings. Apply after planting, but before potatoes emerge. Use a non-ionic spreader.				
Pelargonic Acid (Scythe)	Potato	Preplant Preemergence Directed-shielded	3-10% v/v	3-10% v/v
Remarks: Product is a contact, nonselective, foliar herbicide. There is no residual activity. May be tank mixed with soil residual herbicides. Consult label for rates and timings of applications.				
Pendimethalin (Prowl)	Potato	Preemergence; Preemergence incorporated	0.75	----
Remarks: May be applied after planting but before potatoes and weeds emerge or after drag-off. Most effective when incorporated by rainfall or mechanically into top 1 to 2 inches of soil within 7 days after application. Will not control established weeds. May also be applied early postemergence (from emergence to 6-inch stage of growth). Use this application on trial basis only. May be tank mixed with Sencore/Lexone, Eptam. Label states not for use on peat or muck soils.				
Rimsulfuron (Matrix)	Potato	PreplantPreemergence Directed-Shielded	3-10% v/v	3-10% v/v
Remarks: Apply at a rate of 1 oz to 1 1/2 oz of product to clean soil following hilling or drag-off. Product must be activated by irrigation or rainfall with 5 days. Apply postemergence to actively growing small weeds after crop emergence. Add as non-ionic surfactant to postemergence applications. Do not apply within 60 days of harvest. Do not exceed 2.0 oz product per acre/growing season. Preemergence tank mixes of Matrix with Lexone, Eptam, Prowl, Lorox or Dual are labeled. Postemergence tank mixes of Matrix plus Lexone an Eptam are labeled. Note and follow rotational crop guidelines.				
Sethoxydim (Poast)	Potato	Postemergence	0.188 - 0.28	0.188 - 0.28
Remarks: Controls actively growing grass weeds. A total of 5 pts. product per acre may be applied in one season. Do not apply within 30 days of harvest. Apply in 5 to 20 gals. of water adding 2 pts. of crop oil concentrate per acre. Unsatisfactory results may occur if applied to grasses under stress. Use 0.188 lb ai (1 pt.) to seedling grasses and up to 0.28 lb ai (1.5 pts.) to perennial grasses emerging from rhizomes, etc. Consult label for grass species and growth stage for best control.				