

Weed Management in Sweet Potato

Effective weed management is a critical aspect to successful sweet potato production since weeds compete for nutrients, water and sunlight and impair crop yield and quality. Commercial producers largely rely on herbicides to combat troublesome weed species. Herbicide applications in conjunction with timely cultivation can effectively reduce weed competition, improve harvest efficiency and increase crop productivity.

Factors including proper weed identification, soil type, crop/weed vigor and environmental conditions can greatly affect herbicide performance. Herbicide labels should always be consulted for activity on weed species present, adjustment of rates for soil type, potential for crop injury, specific restrictions and pre-harvest application interval. Lower temperatures generally result in slower sweet potato growth and, when combined with excessive rainfall, can result in increased herbicide injury.

Herbicide activity is greatest when applied to small, actively growing weeds. Weed control obtained from herbicides with soil activity is greatly improved with activation by mechanical cultivation or rainfall or irrigation within two to seven days after application. In general, one-half inch of rainfall or irrigation, preferably one occasion, will adequately activate most soil-active herbicides. Conversely, excessive amounts of rainfall over a short period may result in leaching of herbicides and reduced efficiency in lighter-textured soils. Rain-free periods required for maximum herbicide absorption following application to emerged weeds differs depending on herbicide used. Specific labels should be consulted.

In addition, surfactant requirements differ among herbicides

and are stated on individual product labels. ***Read and consult all product labels prior to use.***

Research has indicated that addition of ammonium sulfate to herbicides such as glyphosate can be beneficial when “hard water” conditions exist. Proper nozzle selection and sprayer calibration are also important factors in maximizing herbicide activity and reducing injury. Consult the *Louisiana Suggested Chemical Weed Control Guide* at www.lsuagcenter.com or nozzle manufacturer for specific information.

Few effective herbicides are labeled for use in sweet potatoes. Effective weed management can be aided by choosing a field that does not have a history of serious weed problems. Frequent crop rotation also can be beneficial in weed management programs by introducing alternative herbicides for increased spectrum of weeds controlled and reducing seed production and subsequent weed populations. Crop rotation intervals with various herbicides can vary greatly, however, and herbicide labels should be consulted in initial crop rotation planning. Cultivation should be used to control weeds during early stages of growth. In addition, sweet potato vines can effectively compete with weeds after good root systems are established.



Perennial Weed Management

Long-term management of nuisance perennial weeds such as Johnson grass, Bermuda grass, alligator weed, yellow nutsedge and purple nutsedge is best achieved through fall fallow ground herbicide application. Ideally, treatments should be initiated once weed regrowth has occurred, and actively growing plants are in the boot/heading growth stage but prior to first frost. The optimum recommended timing to initiate treatment is

September 15 to October 15. Best results are realized with fall fallow ground applications over multiple years.

Glyphosate (many formulations): Apply at the rate of 1 to 1.5 lb active ingredient per acre. Addition of surfactant will depend on formulation used; therefore, consult the label.

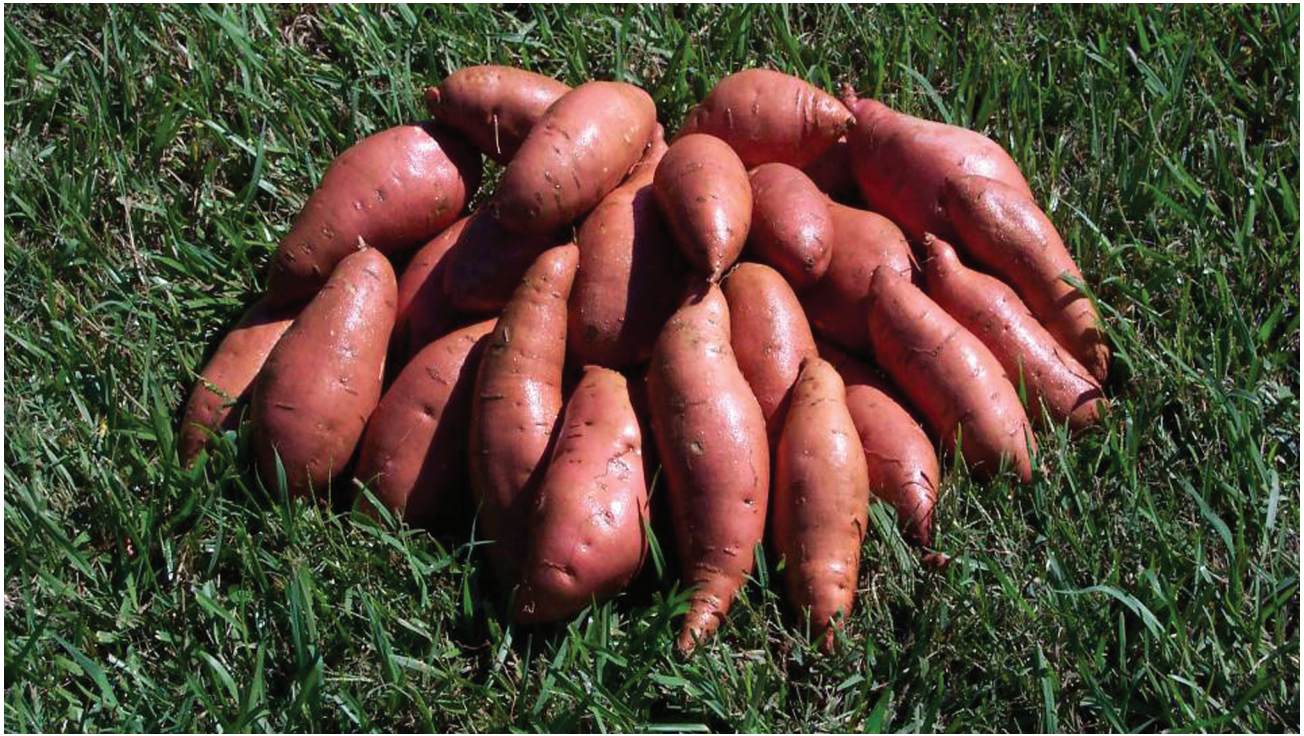
Preplant Burndown

Gramoxone Inteon (paraquat): Paraquat can be used for rapid control of actively growing vegetation prior to cultivation and just prior to planting. Apply at the rate of 2 to 4 pints of formulated material per acre. Use higher rates (>2.5 pints) only when dense weed populations exist or weed height exceeds 4 inches. Include

nonionic surfactant at 0.25 percent or crop oil concentrate at 1 percent by volume. Symptoms usually appear within 1 to 2 days after application. Good spray coverage is essential for maximum control because of strictly contact herbicide activity.



Glyphosate (many formulations): Glyphosate can be used as a preplant treatment to control alligator weed, pig weeds, ground cherry and numerous grass species. Apply at the rate of 0.75 to 1 pound active ingredient per acre for control of annual weeds. The higher rate should be used for larger weeds. Addition of surfactant will depend on formulation used; therefore consult label. To obtain maximum benefit from preplant applications, allow seven days before cultivation.



In-season Management

Soil-applied Herbicides

Command 3 ME (Clomazone): Apply at the rate of 1 1/3 to 4 pints per acre as a broadcast post-transplant surface application. Consult the label for rate adjustment for soil type or weeds controlled. Command controls annual grasses and select broadleaf weeds. Command will not control nutsedge.

Valor SX (Flumioxazin): Apply at the rate of 2 to 2.5 ounces per acre pre-transplant. Do not mix with metolachlor (Dual Magnum). May be tank-mixed with labeled rates of clomazone (Command 3 ME) if tank-mix is applied prior to transplanting.

Dual Magnum (S-Metolachlor): *Consult label prior to use.* Apply at the rate of 1.0 to 1.33 pints per acre post-transplant and before emergence of target weeds. Do not incorporate following application. Do not mix with Valor (flumioxazin) herbicide. Use the lower rate on coarse-textured soils. Injury potential increases on sands and loamy sand soils, especially if a heavy rainfall

occurs shortly after application. If irrigation is used, do not apply more than 0.5 inches of water for the first irrigation following application of Dual Magnum (*currently labeled under section 24 c FIFRA; special local needs label, 2006-2011*).

Aim EC (carfentrazone-ethyl): Aim EC can be applied at the rate of 0.5 to 2 fluid ounces per acre broadcast with a hooded sprayer to control labeled weeds such as smooth pig weed, spiny amaranth, ground cherry and numerous morning glory species. Apply up to 2 fluid ounces (0.031 lb ai) per broadcast acre application in a minimum of 10 gallons per acre finished spray. Hooded sprayers must be designed and adjusted to enclose the spray pattern and to prevent any spray deposition on stems or leaves of the sweet potato plants because injury can occur. For optimal results apply to actively growing weeds (up to 4 inches). Do not exceed 6.1 fluid ounces (0.096 lb active ingredient) per season.

Postemergence Herbicides

Fusilade DX (fluazifop): For control of actively growing grasses only. Apply at the rate of 6 to 12 ounces per acre. Use higher rates on larger grasses. Include non-ionic surfactant at 0.25 percent to 0.5 percent or crop oil concentrate at 1 percent by volume.

Poast (sethoxydim): For control of grasses only. Apply at the rate of 8 to 16 ounces per acre. Use higher rates on larger grasses. Refer to the label for specific adjuvant requirement.

Select (clethodim): For control of grasses only. Apply at the rate of 6 to 8 ounces per acre with 1 percent crop oil concentrate by volume. Use higher rates on larger grasses.

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