WEED CONTROL CONSIDERATIONS IN NO-TILL CROPPING SYSTEMS

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Most weeds can be adequately managed in crops planted with the no-till method. Since the option to cultivate is usually eliminated, weed management in no-till crops depends almost entirely on the application of foliar and soil-applied herbicides. Therefore, making the correct decisions may determine the success or failure of this practice. The following are some considerations in weed management for no-till crops.

Field Selection

Fields with moderate to heavy infestations of weeds that cannot be controlled effectively with pre- or postemergence herbicides should be avoided. For example, in corn and grain sorghum, control of species such as johnsongrass, nutsedge, or common hermudagrass usually requires a soil-incorporated herbicide plus cultivation to complement other management practices. Other grassy weed species that are difficult to control in corn, such as broadleaf signalgrass and texas panicum, should also be avoided.

For soybeans, moderate to heavy infestations of florida beggarweed and sicklepod require a soil applied herbicide plus cultivation for adequate control. Morningglory spp., johnsongrass, and common bermudagrass are other weeds which should be avoided.

Herbicide Selection

To help tailor a good weed management system for soybeans and corn, note Tables 1 and 2 which detail weed responses, by species, to the pre- and postemergence herbicides recommended in South Carolina. Detailed herbicide recommendations are given in the current Agricultural Chemicals Handbook and other Extension commodity circulars availahle in the county Extension offices.

A number of good herbicide combinations may be used in no-till cropping systems. Growers should pay special attention to rates, spray volume, and pressure directions on the labels. An effective herbicide system for no-till crops usually involves a knockdown herbicide (e.g. Paraquat@ or Roundup@) in combination with one or more preemergence herbicides, depending on the weed species present. Postemergence herbicides should be used to provide additional control of broadleaf weeds if needed.

The postemergence grass control materials for soybeans, POAST and FUSILADE, are important new components of the grower's herbicide arsenal. Though expensive, they add a dimension to no-till soybean cropping systems which growers did not previously have. Innovative growers and equipment manufacturers are looking at ways to utilize these highly selective materials to achieve their greatest benefit with the least costs possible.

TABLE 1. WEED RESPONSES TO HERBICIDES RECOMMENDED FOR USE IN NO-TILL SOYBEAN PRODUCTION IN SOUTH CAROLINA*

	DUAL	LASSO	SURFLAN	LOROX	SENCOR OR LEXONE	BASAGRAN	BLAZER	VISTAR	POAST OR FUSILADE	PREMERGE	SENCOR OR LOROX + BUTYRAC 200 OR BUTOXONE	PARAQUAT
Time of application	PRE	PRE	PRE	PRE	PRE	POT	POT	POT	POT	PDS	PDS	PDS
Crabgrass	E	E	E	G	F	P	P	P	E	P	F	G
Goosegrass	G	G	G	F	F	P	P	P	E	P	F	G
Fall panicum	E	E	G	F	F	P	P	P	E	P	F	G
Texas panicum	P	P	G	P	P	P	P	P	E	P	F	G
Johnsongrass (seedling)	F	F	G	P	P	P	P	G	E	P	F	G
Johnsongrass (rhizome)	P	P	P	P	P	P	P	G	E	P	P	P
Cocklebur	P	P	P	F	P-G	E	G	P	P	G	E	G
Cowpea	P	P	P	P	P	P	F-G	P	P	F	F	F
Croton	P	P	P	P	F	G	E	P	P	G	G	G
Florida beggarweed	P-F	P-F	P	F	G-E	P	F	P	P	F	E	G
Hemp sesbania	P	P	P	P	F	P	E	P	P	F	E	G
Jimsonweed	P	P	P	F	P-G	E	G	P	P	G	E	G
Morningglory	P	P	P	F	P	F	G-E	P	P	G	E	G
Nutsedge	F-G**	F**	P	P	P	G**	P	P	P	P	P	F
Pigweed	G	E	G	G	G	P	E	P	P	P	G	G
Prickly sida	P	F	P	F	G	G	P	P	P	G	E	G
Ragweed	P	F	P	G	F	F	G	P	P	F	E	G
Sicklepod	P	P	P	P	G	P	P	P	P	P	E	G
Smartweed	P	F	P	F	F	G	F	P	P	P	E	G
Velvetleaf	P	P	P	F	F	G	P	P	P	F	E	F

*Based on observations of research plots, Extension test-demonstrations, and field use for several years in South Carolina. It is assumed that the herbicides are applied according to label directions. Control may vary depending on time and method of application, weather conditions, size of weeds, etc.
**Yellow nutsedge only.
E = 90%+ control; G = 80-89% control; F = 50-79% control; P = Less than 50% control.
PRE = Preemergence; POT = Postemergence over-the-top; PDS = Postemergence directed spray.

	LASSO	DUAL	PROWL	atrazine	BLADEX	PRINCEP	LASSO + ATRAZINE OR BICEP	atrazine	BASAGRAN	2,4-D	BANVEL	EVIK	OROX	PARAQUAT OR GRAMOXONE	PARAQUAT + atrazine
Time of application	PRE	PRE	PRE	PRE	PRE	PRE	PRE	POT	POT	POT or PDS	POT or PDS	PDS	PDS	PDS	PDS
Crabgrass	E	E	E	F	G	G	E	F	P	P	P	E	E	G	G
Goosegrass	G	G	G	F	G	G	G	P	P	P	P	E	G	G	G
Johnsongrass (seedling)	F	F	G	P	P	P	F	P	P	P	P	G	G	G	G
Fall panicum	E	E	G	P	F	G	E	P	P	P	P	E	E	G	G
Texas panicum	P	P	F	P	P	P	P	P	P	P	P	G	G	G	G
Signalgrass (broadleaf)	F-G	F-G	G	F	F	F	G	F	P	P	P	G	G	G	G
Cocklebur	P	P	P	E	F	G	E	G	E	E	E	G	G	G	G
Croton	P	P	P	E	G	G	E	G	G	G	G	G	G	G	G
Florida beggarweed	P-F	P-F	P	E	G	G	E	G	P	F	G	E	E	G	E
Jimsonweed	P	P	P	E	G	G	E	G	E	E	E	E	E	G	E
Lambsquarters	G	G	G	E	E	E	E	E	F	E	E	E	E	G	E
Morningglory	P	P	P	E	G	G	E	E	F	E	E	E	E	G	E
Nutsedge	F**	F**	P	P	P	P	F	P	G**	P	P	G	G	F	F
Pigweed	E	G	G	E	F	E	E	E	P	F	G	E	E	G	E
Prickly sida	F	P	P	E	G	E	E	G	F	G	E	E	E	G	E
Ragweed	F	P	P	E	G	E	E	E	F	E	E	E	E	G	E
Sicklepod	P	P	P	G	F	G	G	G	P	F	G	G	G	G	G

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