Controlling Non-Native Grasses to Enhance Wildlife Habitat

Although non-native grasses such as bermudagrass, tall fescue, and bahiagrass are suitable for livestock forage and erosion control, these grasses provide poor habitat for many species of wildlife. These grasses form a dense sod at ground level that is impassable for small wildlife, such as bobwhite quail and rabbits. Fields infested with non-native grasses have low plant diversity resulting in poor food and cover resources for wildlife. Native warm-season grasses (NWSG) and forbs (broadleaf plants) provide many more wildlife benefits than non-native grasses. NWSG can also be used effectively as livestock forage and for erosion control. Some examples of NWSG are broomsedge, little bluestem, big bluestem, and indiangrass. After controlling non-native grasses, NWSG and forbs can be re-established to improve wildlife habitat.

In Mississippi, eradicating one species of non-native grass may result in the release of another. For example, tall fescue may be effectively controlled with a fall herbicide treatment, but bermudagrass may be released in spring. In these cases, multiple herbicide treatments will be required to completely eradicate all non-native grasses that grow on the site.

Herbicides are required to eradicate non-native grasses. However, no single herbicide treatment is appropriate for all grasses. Proper timing of herbicide applications and site preparation prior to spraying are very important to successfully controlling non-native grasses. Herbicides should be applied to actively growing grasses. Use prescribed fire, mowing, or haying 1 to 2 months before the target application date to prepare a site for herbicide application. Always consult a natural resources management professional experienced in the legal and proper use of prescribed fire before burning. Allow 6 – 8 inches of regrowth before spraying. Use an appropriate spray adjuvant (surfactant, methylated seed oil, etc.) as recommended by the herbicide label. To determine the appropriate adjuvant, timing of application, and other information refer to the recommended herbicide label. Always follow label instructions. A list of recommended herbicides for controlling non-native grasses is provided on the back of this information sheet. Treated sites should be monitored closely, and additional treatments may be required to effectively control reoccurrence of non-native grasses from seed or rhizomes.

For assistance in developing a non-native grass management plan and herbicide prescription, contact one of the following Mississippi Department of Wildlife, Fisheries, and Parks Private Lands Habitat Program biologists:

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Fig 1. This field was planted in bermudagrass for livestock grazing. Now that the pasture is no longer needed, the landowner wishes to eliminate the non-native grasses to improve the value of the field for wildlife.

Fig 2. The bermudagrass was successfully killed by spraying imazapyr during September.

Fig. 3 Three years after spraying, this field has become excellent habitat for nesting bobwhites, rabbits, and turkeys.

Recommended herbicides for eradicating non-native grasses are provided below. Suggested rates are given for broadcast treatments. Refer to herbicide labels for spot-treatment application rates. This list of commercially available herbicides (trade names) is not complete. Other products may be available, and no brand is recommended over another. Read herbicide labels closely before application over or around desirable vegetation such as trees or crops.

Non-native Grass	Growth Habit	Active Ingredient	Examples of Trade Names	Broadcast Application Rate	Timing of Application
Tall Fescue *(Lolium arundinaceum)*	Cool-season	Glyphosate[a]	Roundup, numerous generics	1.5 – 2 quarts/acre (41% active ingredient)	Sept-Nov Apr-May
		Imazapic[b]	Plateau, Imazapic E-2SL, Panoramic	12 ounces/acre	Sept– Nov Apr-May
		Imazapic[b] + Glyphosate[a]	Journey	22-32 ounces/acre	Sept-Nov Apr-May
Bermudagrass *(Cynodon dactylon)*	Warm-season	Imazapyr[c]	Arsenal AC, Polaris AC, Chopper	22 ounces/acre (4 lb product); 44 ounces/acre (2 lb product)	June-Sept
		Glyphosate[a]	Roundup, numerous generics	5 quarts/acre (41% active ingredient)	May-Sept
Bahiagrass *(Paspalum notatum)*	Warm-season	Imazapyr[c]	Arsenal AC, Polaris AC, Chopper	16 ounces/acre (4 lb. product) 32 ounces/acre (2 lb. product)	June-Sept
		Glyphosate[a]	Roundup, numerous generics	3-4 quarts/acre (41% active ingredient)	May-Sept
		Metsulfuron methyl[d]	Escort XP	0.5 ounces/acre	Apr-May
		Sulfometuron methyl[d]	Oust XP	3-5 ounces/acre	Apr-May
		Sulfometuron methyl + Metsulfuron methyl[d]	Oust Extra	3 ounces/acre	Apr-May
Johnsongrass, rhizome *(Sorghum halepense)*	Warm-season	Sulfosulfuron[e]	Outrider	2 ounces/acre	May-June
Johnsongrass, pre-emergent and seedling	Warm-season	Imazapic[b]	Plateau, Imazapic E-2SL, Panoramic	8-12 ounces/acre	Apr-June
		Imazapic[b] + Glyphosate[a]	Journey	32 ounces/acre	Apr-June

[a]Glyphosate is a non-selective herbicide and may injure or kill desirable vegetation if applied during periods of active growth. Glyphosate has no residual soil activity.

[b]Imazapic is a selective herbicide and many native grasses and wildflowers are tolerant of this herbicide; however, some desirable vegetation could be injured or killed. Imazapic has some residual soil activity.

[c]Imazapyr is a selective herbicide, but will kill many grasses and hardwood trees. Legumes and vines are relatively tolerant of Imazapyr. Imazapyr has ± 6-month residual soil activity.

[d]Efficacy of both Metsulfuron methyl and Sulfometuron methyl may be reduced if applied during or prior to extreme drought periods. Both herbicides have some residual soil activity.

[e]Sulfosulfuron is a selective herbicide, and many native grasses are tolerant of this herbicide; however, many wildflowers could be injured or killed. Sulfosulfuron has little residual soil activity.