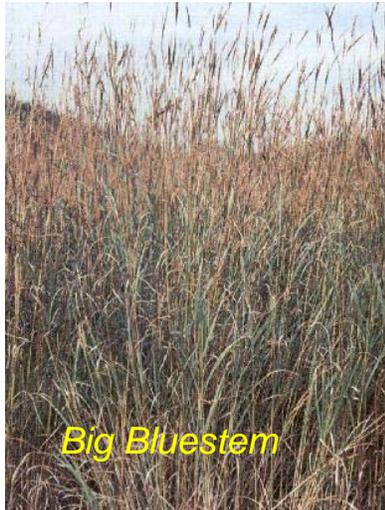


PLANNING AND SITE PREPARATION



Successful establishment of warm season grasses (WSG'S) begins the fall before seeding. Existing cover must be eliminated by spraying or tillage. Make that decision early. Both methods will be the most successful if started in the fall. Work with a local consultant to determine the best herbicide combination and apply it at the appropriate time in the fall. Consider using a cover crop if conventional tillage is used in the fall to prepare the site.

For wildlife and maintenance benefits, WSG'S should be managed in small units of five acres or less . This can be done by seeding twenty to thirty foot wide cool season grass travel lanes and field borders around and between each warm season grass unit. The cool season buffers provide plant diversity and enhance the entire area for wildlife. Seed the travel lanes /

buffers with 10 lbs. per acre PLS (pure live seed) Kentucky bluegrass and 1/4th lbs. per acre PLS Ladino clover. The bluegrass can be substituted for 3 lbs per acre PLS of Redtop.

Other cool season grasses may be substituted but keep in mind the need for low growing species to enhance wildlife benefits and make the travel lanes / buffers effective as fire brakes if controlled burning is used as a management tool.

USE OF HERBICIDES

New herbicides have been introduced for use with WSG'S. They are very effective in controlling weeds during the establishment year. Producers should contact a local consultant who can provide recommendations on proper herbicides and rates. Switchgrass is well suited to be planted in the spring following a previous corn crop. Residual corn herbicides will reduce competition yet not adversely effect the switchgrass. Two year old switchgrass seed germinates better than one year old seed.

SEEDING DATES

For conventional and no-till seeding: seed WSG'S between April 1st and June 15th .

WSG'S need adequate soil moisture and warm (at least 50 degrees) soil temperature to germinate. DO NOT seed WSG'S in the fall. They require a minimum of eight weeks growth between emergence and the first frost to become established enough to survive the winter. Emergence can take 21 – 28 days after seeding for many species. A dry fall and early frost may not provide the required time for establishment. Dormant seeding can sometimes be used effectively from December 1st to March 3rd.

CONVENTIONAL SEEDING

Work the seedbed to a depth of 3 inches. Level and firm the seedbed by disking and follow by cultipacking. Drill to a depth no greater than 1/4th inch (1/8th inch is better). **Seeding WSG's deeper than 1/4th inch will almost always fail.** Seed may be broadcast if accomplished in a uniform manner. Pre-mixing the seed with 200 lbs/ac. of pelletized lime and utilizing an airflow applicator is effective. The seedbed should be cultipacked before and after seeding. It is acceptable to see up to 1/3rd of the seed on the soil surface. Wind speed should be less than 15 mph when using this method.

NO-TILL SEEDING

Use a drill designed to handle the light fluffy WSG seed. Conventional drills **will not** work successfully with fluffy seeds such as Big Bluestem, Little Bluestem, Indiangrass, Sideoats Grama and several other WSG'S. Conventional drills **will** work with Switchgrass seed. Many Quail Unlimited and Pheasants Forever chapters as well as local Soil and Water Conservation Districts have WSG drills available.

FROST SEEDING

Frost seeding is an option for WSG'S but due to the high cost of seed, it should be considered a risky option. Here are guidelines if a producer chooses to frost seed.

Establish a nurse crop of wheat the fall before frost seeding. Use conventional tillage to establish the crop and seed at the rate of 1/2 bushel per acre. Seed the WSG into the standing wheat in the early spring when the soil is "honey combing" (natural soil heaving from the repeated freezing and thawing). WSG'S are so light they need some kind of "carrier" to help get an even distribution. Pelletized lime at 200 lbs./acre is an effective carrier. Mix the WSG and lime thoroughly and spread with an airflow seeder. When frost seeding use a half rate and then double seed, making the second pass perpendicular to the first. Use a cultipacker to firm the seedbed if the freeze thaw cycle seems to be ending. A specialized hand seeder can be used on small warm season grass plots. Wind speed should be less than 15 mph.



Switchgrass

SEEDING RATES AND MIXES

Table 1, below, shows rates for “wildlife” and “vegetative” applications. The wildlife rate should be used when wildlife cover is the predominant concern and potential soil erosion is slight. If the soil loss potential is high then use the “vegetative” rates. Drainageways and concentrated flow areas should be seeded at the vegetative rate and flatter areas seeded at the wildlife rate. The seeding mixture will be enhanced by adding any of the forbs shown in the table below Table 1. Table 1 **should not** be used for selecting species or rates for pasture and hayland establishment. Refer to Indiana FOTG Standard 512 or contact the NRCS state agronomist.

Table 1. Seeding Mixtures for Warm Season Grass, Legume and Forb Species.¹

Seeding Mixtures	Application Rate (lbs./ac of PLS ²)		Seeding Mixtures	Application Rate (lbs./ac of PLS ²)	
	Wildlife	Vegetative		Wildlife	Vegetative
Big Bluestem	0.75	1	³ Switchgrass	1.75	2
Indiangrass	0.75	1	Big Bluestem	1	2
Little Bluestem	1.75	2.5	Indiangrass	0.5	1
Sideoats Grama	1	1.5	Annual Lespedeza	2	2
Annual Lespedeza	2	2	Big Bluestem	1	1.5
Little Bluestem	2.5	4	Indiangrass	1.5	2
Indiangrass	0.75	1	Little Bluestem	1	0.5
Sideoats Grama	0.75	1	Sideoats Grama	0.5	0.5
Annual Lespedeza	2	2	Annual Lespedeza	2	2

Forb Species⁴

Blackeyed Susan	Illinois Bundle Flower	Stiff Goldenrod
Butterflyweed	New England Aster	Sunflower Heliopsis
Button Blazing Star	Partridge Pea	Tall Coreopsis
Dense Blazing Star	Prairie Dock	Virginia Mountain Mint
Entire-Leaf Rosinwood	Purple Coneflower	Wild Bergamot
Gray-Headed Coneflower	Sawtooth Sunflower	

¹ If prepackaged mixtures are used the application rates shall be equal to those listed in Table 1 for the designated use.

² Pure Live Seed. To calculate percent Pure Live Seed (PLS) rates, multiply the percent purity by the percent germination. Divide the seeding rate by the %PLS to find the bulk seed needed per acre. Example: 98% Purity X 60% Germination = .588 PLS, 10 pounds seed per acre/.588 PLS = 17 pounds of bulk seed per acre.

³ this seeding mixture can be used on wet sites.

⁴ For added wildlife and aesthetic benefits add 2 to 8 oz. of any single or combination of forb species listed.

Planting Plan

Species to be Seeded	Rate in lbs./acre	PLS	Acres to be Sown	Total lbs. Needed

LIME AND FERTILIZER

Lime and fertilizer should not be applied to WSG’S at establishment unless a current soil test shows P and K are in the deficient range or the pH is 6.1 or less. Apply only enough P and K to bring the soil test levels to the moderate range and only apply one ton of lime per acre if the pH is less than 6.1. Additional lime and fertilizer above these rates will encourage weeds and greatly reduce the chance of establishing a successful stand of WSG’S. **DO NOT** apply any nitrogen during establishment. Legumes should be frost seeded the following year to provide nitrogen to the WSG’S and enhance plant diversity. Annual Lespedeza should be used south of I-70. Ladino Clover should be used in place of Lespedeza north of I-70 at the rate of ¼ lbs. per acre PLS.

STAND MAINTENANCE

MOWING: Newly seeded fields require close attention during the first year for successful establishment. Weeds should be mowed to a height of 8 inches in June, July and August. Frequent, high mowing controls weeds and reduces the amount of residue that might cover and kill new WSG seedlings.

Minimum maintenance should be required the second year. Some mowing may be needed in fields with heavy broadleaf weed pressure. Do not mow closer than 8 inches. Delay mowing until after August 1st to protect ground nesting wildlife. .

HAYING OR GRAZING: WSG’S produce most of their growth during the June – August time frame. Do not mow or graze closer than 8 inches. Apply nutrients to meet yield goals. A local fertilizer dealer or consultant can provide fertility recommendations based on a current soil test.



Indiangrass

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