

Indiana - June 2012 (ver. 1.1)

Introduced Grasses and Legumes Program Job Sheet



PURPOSE

Introduced (not native) grasses and legumes are used to reduce soil erosion, improve water quality, and create or enhance wildlife habitat.

Introduced grasses and legumes can provide nesting cover for wildlife. Legumes also provide a good seed and insect source for young birds. However, these mixes tend not to stand up well to snow and ice, thereby providing marginal winter cover. While introduced grasses persist long after establishment, legumes typically decline over time and, therefore, require specific management (i.e. disturbance) to ensure their continued presence.

The grass species selected affect the wildlife species that utilize the planting. Supplementing grass plantings with other wildlife practices or plantings, such as pollinator habitat, further enhances the cover.

WHERE PRACTICE APPLIES

Apply this practice on fields that meet eligibility requirements for the Conservation Reserve Program (CRP) as determined by the Farm Service Agency (FSA).

PLANNING CONSIDERATIONS

When selecting plant species, consider the long-term objectives, requirements for optimum wildlife habitat, and adaptability to the climate, soils, and moisture conditions in the field being established. Consider planting introduced grass and legume stands adjacent to dense woody cover to maximize wildlife benefits.

CRP POLICY

General Signup 43: To award 40 points for the National Ranking Factor N1a, existing vegetation or seeding mixes must contain at least three (3) grasses plus at least one (1) legume. To award 10 points, existing vegetation must contain at least one (1) grass, with or without legumes; or seeding mixes must contain at least two (2) grasses, with or without legumes.

Highly Erodible Land Initiative or Source Water Protection Program:

See 10-point criteria above

Native forbs can be added to either mix to provide additional plant diversity, or to meet the needs of the targeted wildlife species. A diverse mixture of grasses and legumes provides nesting cover, flowers for pollinating insects, and a good seed and insect source for food.

SEEDING RATES AND SPECIES

Seeding rates and species selection for this practice will be determined by using the Indiana (IN) Natural Resources Conservation Service (NRCS) Seeding Calculator (Use 327 – Conservation Cover with ONLY wildlife-friendly species). Any pre-packaged mixes must be approved before seeding. Site-specific requirements are listed on the attached Specifications Sheet.

COMPANION/NURSE CROPS

A companion/nurse crop will be used when erosion control and weed suppression are needed. Companion/nurse crops include Winter Wheat (after the Hessian Fly-free dates in Table 2), Oats, Barley, Cereal Rye or Annual Ryegrass; native Wildryes (i.e. – *Elymus sp.* such as Canada, Riverbank, and Virginia Wildrye) are also effective.

Companion crops will be clipped after jointing, but before seed head pollination unless otherwise directed (control of Wildrye species is not necessary so that they persist as part of the seedings). A second and subsequent clipping is necessary if re-growth provides competition. Clipping height should be above developing seedlings. Where excessive growth has accumulated, the vegetation will be chopped rather than swathed.

LIME AND FERTILIZER

Lime and fertilizer should be based on a current soil test (less than four years old). In areas with existing vegetation that shows signs of nutrient deficiencies, or if the soil test shows phosphorus (P) and potassium (K) are in the low to very low range, apply enough fertilizer (organic or inorganic) to raise N, P and K to a level needed for a one (1) ton per acre yield goal. Use Purdue University recommendations from the *Crop Fertilizer Recommendation Calculator* <http://www.agry.purdue.edu/mmp/webcalc/fertRec.asp>, or the Indiana NRCS Seeding Tool – *Indiana Fertilizer Calculator*.

If the pH is 6.0 or less, apply enough lime per acre to bring pH to meet the tolerance range of the planned plant species. Soil amendments will be incorporated during seedbed preparation, or applied before planting if a no-till drill is used. Apply lime according to *Tri-State Fertilizer Recommendations - PU AY-9-32*, Extension Bulletin E-2567, or the Indiana NRCS Seeding Tool – *Indiana Fertilizer Calculator*.

SITE PREPARATION

It is very important to plant the vegetation into a weed-free seedbed. Use herbicides and/or tillage to eliminate competing vegetation. Weed control efforts should begin as early as 12 months prior to planting, and may require multiple applications or operations in both the fall and spring prior to planting.

Pay particular attention to sites where noxious and potentially invasive species are likely. Many of these species are perennials that spread through seed and roots, and many have rhizomatous root systems that will persist and negatively impact the planting.

Cool season weeds (i.e. - Canada thistle, quack grass) are best controlled in the fall (mid September – Early November) with a translocation herbicide. Plants should be actively growing at the time of application. Avoid herbicide application after 3:00 pm if overnight temperatures are expected to drop below 50 degrees (F).

Warm season weeds (i.e. - Johnsongrass) are best controlled prior to flower with a follow-up application prior to first frost. Plants should be actively growing at the time of application.

Contact your local Purdue University Cooperative Extension Service for specific herbicides to use. **Apply all herbicides according to the label.**

Use a nurse/companion crop to further control potential weed issues and/or a temporary cover for erosion control.

If prescribed burning is used for site preparation, it must be conducted according to IN NRCS FOTG Standard 338 - *Prescribed Burning*

SEEDING DATES

Selected species will be planted within the dates specified in Table 1.

Table 1 - Planting Dates

Species/Mix	IN Seeding Dates	Dormant Seeding Dates*
Cool Season Grasses/Forbs	3/1-5/15 8/1-9/15	12/1-3/1
Legumes	3/1-5/15 8/1-9/15	12/1-3/1
Warm Season Forbs	4/1-6/15	12/1-3/1

* Increase seeding rates by 25% if dormant seeding.

SEED PREPARATION

Inoculate legume seed before seeding with the proper rhizobia bacteria specific for the species. Re-inoculate seed if it was pre-inoculated more than 60 days prior to seeding or beyond dates specified on the seed / inoculant tag. Inoculant left in the sun, even for a short period of time can significantly reduce the viability and effectiveness. Pre-inoculated seed will have a coating that changes the pure live seed per pound and thus the bulk seeding rate per acre.

Be aware that blending seed of varying size, shape and weight can make calibration of equipment and seeding uniformity difficult.

Some seeding mixtures contain seed that is extremely small and thus have very low seeding rates. This may make it difficult to set seeding equipment to uniformly seed these low rates of very small seed. Under these circumstances, a **carrier** or using coated seed may be desirable to add enough volume to the mix for proper metering. The carrier should be no larger than the largest seed species and have similar shape, density and texture to the majority of the seeds in the mix. The carrier can be an inert material (such as cracked corn) that does not have abrasive properties that may cause damage to the equipment or the seed. Inexpensive seed (unimproved varieties) that will have no significant negative impact on the purpose of the seeding may also be used.

PLANTING METHODS

No-Till seeding: Use a no-till drill with seven (7) inch or less row spacing. Ensure the drill is designed to handle the type of seed being planted (especially important for native grasses). Set the no-till drill to provide good seed-to-soil contact and a planting depth preferred for the desired species (see table below). Soils that are too wet or too dry can also cause improper seed placement.

Seeding depth guidance

Groups	Seed Size (seeds/lb.)	Optimum (inches)	Max. (in.)
Brassicas, clovers, small seeded legumes, small seeded grasses, native forbs	150,000 – 500,000	¼	½
Vetches, sorghums, wildryes, trefoils, native legumes, radishes	50,000 – 150,000	½	¾
Cereal grains	12,000 – 50,000	¾	1
Beans, peas, corn	1500 – 12,000	1 ½	2

Conventional Seeding: Prepare a fine firm seedbed to a depth of three (3) to four (4) inches. Incorporate lime and fertilizer during seedbed preparation. Use a drill with seven (7) inch or less row spacing or a culti-packer seeder designed for the seed to be planted. Seed should be drilled uniformly at a proper seeding depth for the desired species.

Broadcast Seeding: Seed may be broadcast if completed in a uniform manner. Pre-mix the seed with 200 pounds per acre of pelletized lime if using an airflow applicator. Seedbeds should be worked to a minimum depth of three (3) inches and firmed before seeding. The seedbed should be culti-packed before and after seeding. It is acceptable to see up to one-third (⅓) of the seed on the soil surface. Wind speed should be 15 miles per hour or less when broadcasting.

Inter-seeding:

- a) **Legumes/Forbs (frost seeding):** No-till drill or broadcast as above into existing vegetation or residues. Broadcasting relies on freeze/thaw cycles, rain and/or snow to incorporate the seed. This method does not include a seedbed preparation. This is most commonly used during the dormant seeding period.
- b) **Cover Crops:** No-till drill or broadcast as above into existing vegetation or residues. Broadcasting relies on freeze/thaw cycles, rain and/or snow to incorporate the seed. Inter-seeding does not include a seedbed preparation. This method can be used to establish cover crop species or combination mixes into relatively light (such as soybean) and weed free crop residues or to establish vegetation into standing crops.

- c) **Grasses:** No-till drill into existing covers only if prior-treated with herbicides or tillage, or if existing cover is diminishing (i.e. – older alfalfa plantings).

WEED CONTROL DURING ESTABLISHMENT

Control competing vegetation as needed until Final Status Review. Mow, burn, or apply herbicides as needed to control unwanted vegetation for up to 3 years after planting. Mow when competing weeds are taller than the planted vegetation, and at a height above the planted vegetation. Use selective herbicides and/or spot spraying to protect the desired species. Refer to Purdue Extension – *Weed Control Guide WS-16* for herbicide timing and treatment.

OPERATION AND MAINTENANCE

After the Final Status Review or three (3) years (whichever comes first), maintain the planting according to your CRP conservation plan. Maintenance activities are allowed only if necessary to maintain stand health, or to control pests, noxious weeds or any plant species whose presence or overpopulation may jeopardize the CRP cover, or have detrimental effects to the surrounding land.

The presence of annual weeds (such as foxtail, common ragweed, and perennial forbs) is not a concern, as these plants are important sources of food for wildlife, especially bobwhite quail. Maintenance may be needed to control excessive density of these annuals, especially during the establishment years, but is not intended to eliminate this group of plants.

Maintenance activities will not occur from **April 1 through August 1** to protect ground-nesting wildlife. If maintenance activities are needed during the April 1 – August 1 time frame, the FSA County Committee **must** approve the maintenance activity **prior to** the activity occurring, and it may **only be on a spot basis**.

Mowing for generic weed control or for cosmetic purposes is prohibited.

Introduced grasses will not be mowed lower than four (4) inches.

Inspect the vegetation annually and after storm events, and repair any gullies that have formed; remove unevenly deposited sediment and/or crop residues that will disrupt the function or kill desired vegetation; and reseed high mortality and disturbed areas.

The contract area cannot be used for field roads or other uses that will damage or destroy the cover.

Apply supplemental nutrients as needed to maintain the desired species composition and stand density.

MID-CONTRACT MANAGEMENT

Mid-Contract Management (MCM) is required on this practice. Table 2 shows the maximum amount of area that can be disturbed by MCM activities in a given number of years. However, to maximize wildlife benefits, participants may opt to perform MCM on one-third (1/3) of the area for each of three (3) years if they so choose.

Table 2 – MCM Disturbance Area

	MAXIMUM AREA TO BE DISTURBED
5 acres or more	1/3 of the area each of 3 years
Less than 5 acres	1/2 of the area each of 2 years, <u>or</u> total area in 1 year

MCM activities will be avoided on environmentally sensitive areas including:

- a) Concentrated flow areas,
- b) Critical areas,
- c) Within the first 20 feet of a practice that borders a water resource to avoid water quality resource concerns, and
- d) Other areas where gully erosion is likely.

Environmentally sensitive areas will be marked on the plan map to ensure Mid-Contract Management activities are avoided on these areas.

Grassland areas must be established for a minimum of three (3) years before initiating MCM activities.

MCM activities operations will not be performed from April 1 through August 1 for contracts starting in 2008, to protect the primary nesting period for grassland bird species. It is also recommended, but is not required, to delay MCM activities until after August 15 to reduce the chance of harming fledgling birds and other young wildlife.

MCM activities operations will be performed along field contours, or across the slope, when practical.

Strips will parallel brushy or woody escape cover when feasible.

See the link below for MCM job sheets:
<http://www.in.nrcs.usda.gov/programs/CRP/crphomepage.html>.

MANAGED HAYING AND GRAZING

These plantings may be used for managed haying or grazing. The managed haying and grazing period for CRP is August 2 through September 15. All hay and animals must be removed from CRP acreage no later than 10 days after the end of the managed haying and grazing period.

Managed haying and grazing activities must be performed according to NRCS Standards and Specifications as found in the FOTG and CRP policy. The same acreage may not be hayed or grazed more than once every three (3) years. Annual CRP rental payments will be reduced based on FSA policy. All managed haying and grazing activities must be approved by FSA and included in the conservation plan prior to harvesting the forage.

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