



Forb and Legume Inter-seeding For Wildlife (645)

And Beneficial Insects

Biology Job Sheet #13

4/16

Natural Resources Conservation Service (NRCS) - Minnesota

Participant _____

Date _____

PURPOSE:

Native forb, native legume and non-native legume inter-seeding is used to increase plant diversity in native and introduced grass plantings or in old field habitats. Inter-seeding provides wildlife with a food source during the winter. It can also create excellent brood habitat for upland wildlife during the summer. *This practice will be used after a disturbance such as prescribed burning, light disking or herbicide spraying.*



PLANNING CONSIDERATIONS:

1. Do not inter-seed with birdsfoot trefoil, crown vetch or sweet clover.
2. For fields >20 acres in size, no more than 1/2 of a field should be disturbed at any given management period. Fields < 20 acres in size may be managed in their entirety.
3. Consider critical areas within the offer (steep slopes etc.) for maintaining existing cover and reduce erosion hazard.
4. Consider the effects of the practice on at risk species, including state and federally listed species.

SITE PREPARATION AND SEEDING:

Establishing Introduced Legumes Into Existing Introduced Cool Season Grasses:

- **Option 1:** After August 1st, mow or use other methods of chopping existing vegetation. Lightly disk in September to smooth mounds and enhance residue breakdown. The following spring; apply needed lime and fertilizer. Harrow as needed to develop a firm and smooth seedbed. Drill legume mixture at specified rates. Broadcast seeding may be applicable provided enough soil disturbance is accomplished to provide good soil-seed contact. The broadcast seeding rate will be 1.5 times drilled rate. All broadcast-seeding operations require rolling, harrowing or cultipacking immediately after seeding.
- **Option 2:** After August 1st, mow or use other methods of chopping existing vegetation. Lightly disk in September to smooth mounds and enhance residue breakdown. The following spring; apply needed lime and fertilizer. No-till drill legume mixture at specified rates.

Establishing Native Forbs and Legumes Into Existing Native Grass Stands:

- **Option 1:** Use a fall prescribed burn after vegetation is dead and dry. Back burn to obtain the most complete residue removal. Lightly disk to smooth mounds or rough areas as necessary. No-till drill forbs/legumes directly into seedbed.
- **Option 2:** Use an early spring prescribed burn to remove previous year's residues. Back burn to obtain the most complete residue removal. Lightly disk to smooth mounds or rough areas as necessary. No-till drill forbs/legumes directly into seedbed. It may be necessary to use a reduced rate of burn down herbicide to suppress competition from established grass before forbs/legumes emerge. Follow manufactures label directions.
- **Option 3:** Manage previous year's residue with rotary mowing or use other methods of chopping existing cover in October. Remove residue. Lightly disk to smooth mounds or rough areas. No-till drill native forbs/legumes in into existing residues. It may be necessary to use a reduced rate of burn down herbicide to suppress competition from established grass before forbs/legumes emerge. Follow manufactures label directions.

SEEDING DATES:

Introduced legumes:

	<u>Spring</u>	<u>Late Summer</u>	<u>Dormant</u>
North	April 1 – June 15	July 15 – Sept. 1	Nov. 1- < 40 degrees
South	April 1 – June 1	August 1 – Sept. 10	Nov. 1- < 40 degrees

Native forbs and legumes:

	<u>Spring*</u>	<u>Late Summer</u>	<u>Dormant</u>
Statewide	May 15 to June 30	Not Recommended	Nov. 1 – < 50 degrees

* Native forbs/legumes that have gone through a moist cold stratification treatment. Seeding of warm season forbs/legumes may begin before May 15th if the soil temp is 50 degrees F.

SEED SELECTION:

- Select combinations of plants species best adapted to site conditions, this will provide greater diversity within the field and improve chances of seeding establishment across varying soil conditions.
- Recommended species and seeding rates. Rates provided are for pure live seed per acre drilled to a ¼ inch depth. Broadcast seeding of introduced legumes may be applicable on lightly disked introduced grass sites, rates will be 1.5 times drilled rate.
- Legume seed of introduced species shall be inoculated in accordance with the directions on the inoculant container. Use the correct inoculant for each legume.
- Acceptable varieties of introduced grasses and legumes shall be selected from those listed in the most current University of Minnesota Varietal Trials publication. To insure longer life, alfalfa varieties shall have a Winter Survival Index of less than three, listed in the Very Good Winter Survival category.
- The listed native forbs and native legumes have strong seeding vigor and have shown success interseeding into existing vegetation. As a general rule, greater diversity of forbs/legumes results in higher quality habitat.

INTRODUCED LEGUMES FOR UPLAND WILDLIFE

General Mix	PLS lb/ac	Low pH Mix	PLS lb/ac	Wet Sites	PLS lb/ac
Red Clover	1.5	Alsike Clover	0.5	White Clover (Ladino)	1.0
Alfalfa	2.0	White Clover	1.0	Alsike Clover	1.0
White Clover (Ladino)	1.0	Red Clover	2.0	Red Clover	1.0

NATIVE FORBS AND LEGUMES FOR UPLAND WILDLIFE

SPECIES	SITE ADAPTABILITY	RATE PLS oz/ac	COMPOSITION
Big Flowered Penstemon (<i>Penstemon grandifloris</i>)	Dry - Mesic	1.5	<ul style="list-style-type: none"> • Interseed native forbs and legumes at a total rate of 8 to 16 PLS oz/acre. • Seed a minimum of 4 species.
Black Eyed Susan (<i>Rudbeckia hirta</i>)	Dry – Wet Mesic	0.25	
Canada Milkvetch (<i>Astragalus canadensis</i>)	Dry - Mesic	1.5	
Illinois Bundle Flower (<i>Desmanthus illinoensis</i>)	Dry - Mesic	4.5	
Showy Partridge Pea (<i>Chamecrista fasciculata</i>)	Dry – Mesic	6.25	
Maximillian Sunflower (<i>Helianthus maximiliani</i>)	Dry - Wet	2.0	

NATIVE FORBS FOR MONARCHS

SPECIES	SITE ADAPTABILITY	RATE PLS oz/ac	
		Single Species	Mix
Common Milkweed (<i>Asclepias syriaca</i>)	Dry - Mesic	10.0	6.0
Maximillian Sunflower (<i>Helianthus maximiliani</i>)	Dry - Wet		1.0
Stiff Goldenrod (<i>Solidago rigida</i>)	Dry – Wet Mesic		0.25

OPERATION AND MAINTENANCE:

- Reapply this practice periodically to set back succession and restore the desired habitat conditions.
- Monitor wildlife use to determine practice success and to better prescribe future management.
- Control noxious and other undesirable plant species as needed until stand is established.

Practice Specifications Approval and Completion Certification

LANDOWNER/OPERATOR ACKNOWLEDGES:

- a. They have received a copy of the specifications and understand the contents including the scope and location of the practice.
- b. They have obtained all necessary permits and/or rights in advance of practice application, and will comply with all ordinances and laws pertaining to the application of this practice.
- c. No changes will be made in the installation of the job without prior concurrence of the NRCS.
- d. Maintenance of the installed work is necessary for proper performance during the life of the practice. The practice life is _____.

I have reviewed all specifications and agree to install as specified:

Landowner/operator name and title (type or print):		
Landowner/operator Signature:		Date:
Landowner/operator name and title (type or print):		
Landowner/operator Signature:		Date:

NRCS Review Only

DESIGN INSTALLATION AND LAYOUT APPROVAL:

Designed By:	Date:	Job Approval Authority (JAA):
Approved By:	Date:	Job Approval Authority (JAA):

RECORD OF COMPLETION AND CHECK OUT CERTIFICATION:

Treated Acres:	Date Completed by Client:	Date Certified:

Certification Statement:

I certify that implementation of this conservation practice is complete, meets criteria for the stated purpose(s), and meets the NRCS conservation practice standard and specifications.

NRCS Signature:	Date:	Job Approval Authority (JAA):