

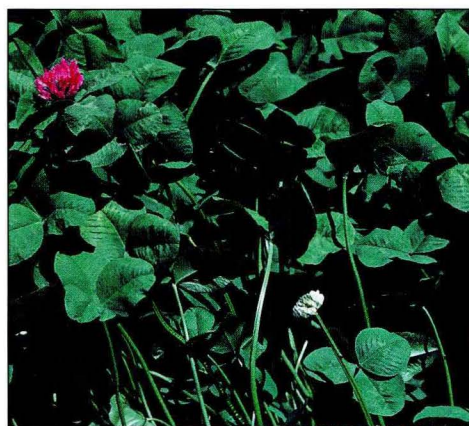
Iowa Fact Sheet



United States
Department of
Agriculture

Natural Resources
Conservation Service

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Why interseed into CRP land?

To be accepted into the Conservation Reserve Program (CRP), most Iowa fields need a mixture of grasses and legumes.

Introduced single species seedings such as bromegrass, that emphasize erosion control and crop base reduction under old CRP guidelines, usually do not score high enough for enrollment in current CRP signups that emphasize wildlife benefits.

Interseeding is the ideal way to improve existing stands of single species grasses on fields already enrolled in CRP. This yields a mixture of grasses and legumes that gives the fullest benefit to wildlife.

Most plans which include introduced species call for a minimum of 50-80 percent introduced grass and 20-50 percent legumes.

Native grass stands may need improving as well. This may be done by adding additional species of native grasses and/or by including forbs or legumes in the mixture.

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General rules for CRP

It is the producer's responsibility to establish and maintain seeding. If the first attempt fails, the producer is required to reseed until an adequate stand that meets the seeding agreed to in the CRP contract is established.

All seed should be of high quality and comply with Iowa seed and weed laws. Certified or source identified seed is recommended. Legume seed quality should not drop below 70 percent Pure Live Seed. Legume seeds should be inoculated by the wet method, with an inoculant specific to the legume species.

Site preparation for interseeding—including mowing, spraying and/or tillage to suppress or kill the existing stand, may be started after August 1. For counties in Iowa that have authority to graze and hay CRP, interseeding in the fall is recommended. These fields may be grazed heavily to reduce competition for the new seedlings.

During the time it takes for the new seedlings to become established, nurse crops, weeds and existing cover can be mowed to reduce competition. Native species may be mowed no closer than 8 inches and introduced species no closer than 4 inches. Herbicide use is restricted due to susceptibility of legumes to herbicides.

After a stand is established no disturbance will be allowed during the primary nesting season for wildlife. The primary nesting season in Iowa is May 15 through August 1.

Choosing establishment methods

There are a variety of ways to establish legumes within existing grass stands, with benefits and limitations to each. Success rates for different methods vary as well. It's not a good idea to cut corners if you're trying to establish a good stand. Here are the pro's, con's, and tips for success for the various methods.

Conventional seeding

The existing stand is totally destroyed through tillage and new seeding is established by broadcasting or drilling into a clean-tilled field.

• Pro •

- May incorporate nutrients and amendments such as lime.
- Opportunity to destroy perennial weeds in current stand.

• Con •

- Soil erosion increases greatly.
- Erosion can wash new seedlings out or sediment can bury them.
- Higher field preparation costs.
- Weed competition can be greater especially from annual weeds.
- Need a nurse crop for erosion control and to suppress weed competition.
- More field trips.

• Tips for success •

- Select sites at low risk for soil erosion.
- Lime and fertilize according to soil test results.
- Seed with a nurse crop at 1 1/2 bu/ac. of oats.
- Drill or broadcast seed uniformly at 1/4 or 1/2 inch depth.
- Roll seedbed to get good soil-to-seed contact.
- Mow to control weeds and destroy nurse crop before seed head stage.

Dormant seeding

Seed is broadcast or drilled into existing or clean tilled soil after the growing season and before freeze-up. The seed remains dormant until the following spring.

• Pro •

- Completed at time of year when labor is more available.
- Establishment is more successful than frost seeding if seed is drilled.
- Seedlings take advantage of early spring moisture.
- Stand establishment has fair to moderate success.

• Con •

- Seeding rate must be increased over other establishment rates if broadcast.
- Mowing after seedlings emerge is critical to control competition.

• Tips for success •

- Reducing competition of the existing stand is important. This can be done chemically, by mowing, or by heavy grazing (only in counties open to haying and grazing) to reduce existing stand vigor prior to establishing new seeding.
- Soil test according to ISU recommendation to the 6 inch depth for phosphorus (P) and potassium (K).
- Apply lime and fertilize according to soil test results.

Interseeding



Frost seeding

Broadcast seed on top of existing stands of introduced grass species in late winter (late January - early March) when freezing and thawing help incorporate the seed into the soil. All commonly grown legumes can be seeded this way. Because of their greater seedling vigor, red clover, alsike clover and ladino clover are quicker to establish than alfalfa, crownvetch or birdsfoot trefoil.

• Pro •

- Does not require special drill.
- Labor is more available in late winter.

• Con •

- Stand establishment is less successful, particularly in years with dry springs.
- Seeding rate must be increased over other establishment rates.
- Mowing is critical to control competition.

• Tips for success •

- This method is not recommended in heavy sod fields.
- Recommended only where existing stand is weak and less than 50 percent of the ground is covered with vegetation.
- Use only small, smooth (shiny) seeded species for best incorporation into the soil during freezing and thawing.
- Soil test according to ISU recommendation.
- Apply lime and fertilize according to soil test results.

No-till

(Interseeding into existing sod)

The new seeding is drilled into the existing sod. The sod may be suppressed or killed chemically, or suppressed by mowing or grazing. No-till seeding may be done in the spring seeding period, late summer seeding period or for dormant seeding. Use approved herbicides and a drill designed for no-till planting.

• Pro •

- Soil erosion is reduced by up to 90 percent.
- Good uniform seedbed.
- Good seed-to-soil contact, greater chance of successful stand.
- Moisture is conserved for seedlings.
- Mulch from old residue conserves moisture and suppresses weeds.

• Con •

- Cost associated with suppressing or killing the stand chemically.
- Moisture can be depleted in drought conditions if sod is not killed early.
- New seedlings can be smothered if vigorous existing stand is not suppressed.
- Weather affects chemical performance.

• Tips for success •

- Use a drill designed for no-till planting.
- Critical to kill weeds and suppress existing stand.
- Mow previous vegetation shortly after August 1 to allow grass to regrow and to ensure good chemical contact.
- Spray herbicide in fall, before frost.
- In counties opened for haying and grazing, heavy grazing of the existing stand will help suppress competition.
- Soil test according to ISU recommendation.
- Apply lime and fertilize according to soil test results.

No-till interseeding options

Strip burndown

Field trials show great success with this method. The goal is to kill narrow strips of existing vegetation to provide an area free of competition for establishment of the legumes. A 15 degree angle nozzle is used to apply chemicals to completely kill 10-inch strips of vegetation. The strips should account for only 20-30 percent of the area—solid blocks or strips of burndown greater than 2 feet wide are not allowed in CRP. The entire field is then interseeded.

Stand suppression

Field trials show moderate success with this method. A herbicide such as Roundup™ can be sprayed to suppress the existing grass stand. Legume seed is drilled into the suppressed stand.

Herbicide rates are primarily dependent on predominant grass species being suppressed, weather conditions, and time of year. Herbicides are more effective in suppressing or killing grasses in the fall when plants are sending food stores to the root system.

Mowing

Field trials show good success with this method depending on weather conditions. Mowing before direct seeding and again after seedlings emerge helps reduce plant competition. It is critical to keep the grass competition down to allow new seedlings to become established.

Drilling places seeds in direct contact with the soil and is preferred over broadcasting. Time of seeding is critical to ensure moisture. Early seeding dates work better than late seedings, especially under drought conditions.

Seeding dates for cool and warm season species

Type of Seeding	Introduced or Native Cool Season Species (Grasses and Legumes)	Introduced or Native Warm Season Species (Includes Prairie Restoration Mixtures)
Spring	March 1 - May 15	April 1 - June 1
Late Summer	August 1 - Sept. 15	Not Recommended
Dormant	November 15 - Freeze-up	November 15 - Freeze-up
Frost ¹	February 1 - March 15	February 1 - March 15

1 - Refer to the NRCS Field Office Technical Guide for applicable plant species.

Seed selection

Select combinations of plant species and cultivars best adapted to site conditions. Specific recommendations can be found in the NRCS Field Office Technical Guide, Section IV, Conservation Cover. Select forage species and varieties adapted to your specific area and soil drainage class. Items to consider when selecting plant species:

- Include several plant species in the seeding mixture to provide greater diversity within the field, improve chances of seeding establishment across varying soil conditions, and increase wildlife benefits.
- If you have side hill seeps or areas that tend to be wet, do not use species such as alfalfa that are intolerant to wetness. Select species more tolerant such as ladino clover.
- If no soil test is taken and no soil amendment (lime) will be applied, select species that are more tolerant of low pH values such as alsike clover, sweet clover, and ladino clover. Red clover is somewhat tolerant of lower pH values.
- Select species best suited for targeted wildlife species. See Field Office Technical Guide, Section IV, Conservation Cover Standard 327 for specific recommendation by wildlife species.
- To ensure 20 percent of established stand in legumes, develop a seeding mixture that consists of 50 percent seeding rate from legumes. See Tables 2 and 3 of the Field Office Technical Guide, Section IV, Conservation Cover Standard 327.

Interseeding rates for legumes by site

<u>Broad Mix #1:</u>	lb/ac	<u>Low pH mix #1:</u>	lb/ac	<u>Wet sites Mix #1:</u>	lb/ac
Red Clover	0.8	Alsike	0.5	Ladino	1.0
Alfalfa	1.0	Sweet clover	0.8	Alsike	1.0
Birdsfoot Trefoil	0.8	Ladino	0.3	<u>Wet sites Mix #2:</u>	
Alsike	0.3	Red Clover	0.8	Birdsfoot Trefoil	2.0
Sweet Clover	0.8	<u>Low pH mix #2:</u>		Red clover	2.0
<u>Broad Mix #2:</u>		Birdsfoot Trefoil	2.0		
Alfalfa	2.0	Red clover	2.0		
Red Clover	1.5				
Birdsfoot Trefoil	1.5				

Note: To increase diversity, additional grass may be interseeded. Red top, .5 lb/ac; Timothy, 1.3 lb/ac; Orchardgrass, 2 lb/ac.

Weed control critical during establishment year

To manage weed competition after plants emerge, mow native species no closer than 8 inches and introduced species no closer than 4 inches. Herbicide use is restricted due to susceptibility of legumes to herbicides.

More help

The Extension Service and the Natural Resources Conservation Service have information on seeding rates, suggested seeding dates by species, soil and site adaptations, and other considerations. The NRCS Field Office Technical Guide has specific recommendations for conservation cover, including species best suited for wildlife.

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