University of Minnesota
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FACT SHEET

BIRDSFOOT TREFOIL AND LADINO CLOVER IN MINNESOTA

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Birdsfoot trefoil and Ladino clover are two legumes that have had limited use in Minnesota. Nevertheless, interest in them continues and they have potential in pastures. Although both are primarily pasture plants, they can be used for hay or silage.

BIRDSFOOT TREFOIL

Birdsfoot trefoil has a reputation for producing grazing on land that is too poor for alfalfa, and it does grow better than alfalfa on soils with poor drainage, poor fertility, and steep slopes. Nevertheless, it grows best where soil conditions are adequate for normal growth of most crop plants.

When once established and with good management, trefoil can persist over several years and produce good grazing. But establishment is often difficult because young plants start growth slowly and do not compete well with weeds.

Some successful pastures have been in use for several years in Minnesota. However, other established stands have dwindled away in a few years — perhaps because of disease, overgrazing, or lack of winter hardiness. Experiments at St. Paul showed that the variety Empire, one of the most winter-hardy varieties, is somewhat less winter-hardy than Ranger alfalfa.

Birdsfoot trefoil is used primarily for grazing; adapted varieties normally lack height and are not easily harvested for hay or silage. However, hay produced is normally fine-stemmed, leafy, and of high quality. Flowering starts fairly early and continues through the summer, making seed harvest quite difficult.

Establishment

Select land that is worth improving and can be kept in a semipermanent sod. Apply fertilizer and lime according to soil test recommendations. A clean firm seedbed is necessary for trefoil. Seeds are small and can be planted at a more accurate depth when soil is firm. Fall plowing helps eliminate weeds and existing grasses.

Inoculate seed before seeding, using two to three times the normal application rate where trefoil has not been grown before. Milk makes a good wetting agent and aids in sticking the inoculant to the seed.

Seed a recommended variety (see Miscellaneous Report 24) at 3 to 6 pounds per acre either alone or with 6 to 8 pounds of bromegrass or 4 to 5 pounds of timothy. Seed at a $\frac{1}{4}$- to $\frac{1}{2}$-inch depth. Bandseeding is best if equipment is available.

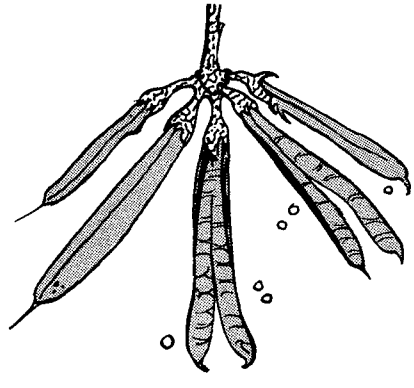
Oats may be seeded for a companion crop at 1 to $1\frac{1}{2}$ bushels per acre. Removal of oats by cutting or grazing when it is 12 inches high allows trefoil to make better growth. Flax also makes a good companion crop. If weeds are no problem, seeding the trefoil alone may be successful. You can clip the crop once or twice in the seeding year to control weeds.

One sure way of getting a stand of birdsfoot trefoil alone is to seed early in the spring without a companion crop and apply a postemergence herbicide to control annual weeds. When trefoil is in the four to five leaf stage, a mixture of 1 pound dalapon and $\frac{1}{2}$ pound 4(2, 4-DB) controls grassy and broadleafed weeds. But don't use this on trefoil-grass mixtures--it injures the grass.

Do not feed 1st year trefoil that has been treated with dalapon to dairy animals or animals being finished for slaughter. First year crops should not be sold or shipped interstate.

Management of Established Stands

You must carefully manage grazing of birdsfoot trefoil for good production and stand maintenance. Overgrazed plants lose vigor and die. Rotational grazing leaving 2 to 4 inches of growth at the end of each grazing is desirable. After



Birdsfoot trefoil gets its name from the shape of its seed pods.

removing cattle from the grazed area, clip the remaining growth to remove unpalatable vegetation and spread droppings. Recovery after grazing is slower than for alfalfa, but trefoil can be grazed without danger of bloat.

You can utilize surplus growth as hay or silage. Excess growth that matures is often wasted because it is unpalatable.

Allow time for regrowth of harvested forage before winter. If not, reduced and weakened stands can result the following spring.

Fertility needs must be met if trefoil is to persist for several years. Pay close attention to soil management as well as grazing management.

When properly managed, birdsfoot trefoil can be a good pasture crop. But know its limitations and don't look on it as a cure-all for your pasture programs.

For further information obtain U.S. Department of Agriculture Farmers' Bulletin 2191, Trefoil Production for Pasture and Hay, from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.

LADINO CLOVER

Ladino clover is a nutritious, palatable, giant form of white clover which has some use in pasture mixtures in Minnesota. It is similar to common or wild white clover but its vegetative parts are larger.

Seed of Ladino cannot be distinguished from seed of wild white clover. It spreads by seed and creeping fleshy stems (stolons) which root at nodes to form new plants. Ladino is normally very high in crude protein and plants tend to be succulent and low in fiber.

Seed this clover in mixtures with grasses and other legumes; do not use it as the only legume in legume-grass mixtures. It is usually seeded in mixtures at the rate of one-half pound per acre. If the primary use of the pasture will be for hogs and poultry, you can double this seeding rate. Stands with a high percentage of Ladino are seldom used for hay because its high succulence makes it difficult to cure.

Ladino can be grown over most of Minnesota. But because of a shallow root system that results in poor drouth tolerance, its greatest use is in higher rainfall areas. In drier regions it has a place on poorly drained soils. It needs good fertility levels and responds to lime applications on acid soils. Follow soil test recommendations for fertilizer needs.

Establishment and Management

Because Ladino clover seed is expensive, use the best quality seed available — nearly always Certified Seed. Inoculate seed just before planting in early spring. A firm seedbed is necessary and the extremely small seeds make shallow seeding mandatory.

Ladino is not as winter-hardy as alfalfa or most other legumes. A winter with little snow cover can reduce stands considerably. With favorable spring conditions, existing plants may spread and continue to contribute to the mixture.

If planted with a companion crop of oats, seed the grain at 1 to $1\frac{1}{2}$ bushels per acre. As with any forage crop, it is advisable to remove the companion crop as early as possible. Early removal of oats by grazing or for hay or silage favors vigorous development of the forage mixture.

Continuous and close grazing can injure Ladino. For best grazing results, start grazing when the stand is 6 to 10 inches in height. Remove livestock when plants are grazed to 3 to 4 inches to allow for regrowth. Stop fall grazing early enough to allow new growth before frost. Then food reserves can accumulate in the plants for winter survival and spring recovery.

Bloat

Ladino clover probably presents the greatest bloat hazard of all legumes. To reduce the occurrence of bloat, mixtures should have a high percentage of grass. Don't turn cattle on pasture when they are very hungry; they should have access to hay, water, and salt while grazing.

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