

South Dakota State University
**Open PRAIRIE: Open Public Research Access Institutional
Repository and Information Exchange**

Extension Extra

SDSU Extension

3-1-2002

Forage Potential of Birdsfoot Trefoil

Edward K. Twidwell
South Dakota State University

Follow this and additional works at: http://openprairie.sdstate.edu/extension_extra

Recommended Citation

Twidwell, Edward K., "Forage Potential of Birdsfoot Trefoil" (2002). *Extension Extra*. Paper 274.
http://openprairie.sdstate.edu/extension_extra/274

This Other is brought to you for free and open access by the SDSU Extension at Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. It has been accepted for inclusion in Extension Extra by an authorized administrator of Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. For more information, please contact michael.biondo@sdstate.edu.



Forage Potential of Birdsfoot Trefoil

Edward K. Twidwell, Extension forage specialist

Birdsfoot trefoil (*Lotus corniculatus* L.) is a perennial legume similar to alfalfa in growth habit. This species generally is adapted to the temperate climate of the northern part of the United States, where it is a hay and pasture crop of major importance. Birdsfoot trefoil is suitable for South Dakota, but it has not been planted in large acreages in the state primarily because of the popularity of alfalfa as a hay and pasture crop. Birdsfoot trefoil, however, has several characteristics that make it superior to alfalfa in certain situations. It deserves consideration as a possible South Dakota forage crop.

Characteristics

Birdsfoot trefoil has a well-developed, branching taproot. Stems are slender with five leaflets to a petiole. Bright yellow flowers start to appear in late May, and flowering continues until early fall. Pods form at right angles to the end of the flowering stem, in the shape of a bird's foot, hence the common name of the species. Seeds are light to dark brown, oval, and quite small. Since this species is as winterhardy as alfalfa, winterkill should not be a problem in South Dakota.

Desirable Qualities

Birdsfoot trefoil has characteristics that make it a good legume for hay or pasture. These include:

1. Long-lived perennial.
2. Ability to reseed itself.
3. Grows under a wide range of soil conditions.
4. Forage quality similar to alfalfa.
5. Does not cause bloat in livestock.

Undesirable Qualities

Birdsfoot trefoil has several traits that are not desirable. These include:

1. Difficult to establish good stands because it is a poor competitor in the seedling stage of growth; it may take 4-5 years to reach full production.
2. Lodges easily.
3. Recovers slowly after grazing or cutting.
4. Cannot tolerate close grazing.

Seeding

The best time to seed birdsfoot trefoil is early spring. The most compatible grass to grow with birdsfoot trefoil is Kentucky bluegrass.

Birdsfoot trefoil seedings usually fail if made in grass sod without seedbed preparation. Shallow plow or thoroughly disc to create a firm seedbed. If trefoil is seeded to a field previously in Kentucky bluegrass, the bluegrass will slowly come back on its own without having to be reseeded. In this case seed birdsfoot trefoil into the field at a rate of 5 pounds per acre. If a spring-seeded trefoil field contains no bluegrass, mix in Kentucky bluegrass seed at a rate of 2 to 3 pounds per acre.

An inoculum must be applied to birdsfoot trefoil seed before planting. If trefoil has not been grown previously in the field, an inoculum is the only source of bacteria for the legume to fix its own nitrogen. The inoculum used for alfalfa will not work for birdsfoot trefoil.

Varieties

Selection of a variety depends on how the trefoil will be used. 'Viking' and 'Dawn' are upright types characterized by an erect growth habit, early flowering, and fast recovery after cutting. The upright types are well-adapted to hay production. 'Leo' is less upright than Viking but more erect than 'Empire'.

'Carroll' and Empire are prostrate types characterized by a low or decumbent growth habit. These varieties are best adapted for pasturing since they tolerate grazing better than the upright varieties.

Forage yields of trefoil varieties do vary somewhat, and generally are lower than alfalfa (Table 1).

Table 1. Forage yields of birdsfoot trefoil and alfalfa varieties.

Variety	6-year average yield
	--tons per acre----
Viking	4.0
Carroll	3.9
Leo	3.9
Empire	3.6
Vernal alfalfa	7.5
Iroquois alfalfa	7.8

Adapted from Leep and Tesar, Michigan State Univ., 1981.

Stand Management

Proper grazing management is required to maintain a highly productive trefoil-bluegrass pasture. Bluegrass grows rapidly in early spring, while trefoil starts some time later. Therefore, grazing the grass early, then removing the animals until trefoil is well-started, will help maintain vigorous trefoil stands.

Birdsfoot trefoil is most productive in late spring and summer, offering some good grazing when the bluegrass is not in a productive state.

Birdsfoot trefoil does not store the level of carbohydrates in the roots during the growing season that alfalfa does. Its only means of growth is through photosynthesis, so an adequate amount of leaf area must remain after cutting or grazing. Studies have shown that at least 3 inches of growth should be maintained for productive stands.

Cut birdsfoot trefoil for hay when it begins to flower. Plants continue to bloom throughout the summer, so forage quality does not drop with maturity as rapidly as it does with alfalfa.

Few disease and insect problems have been reported for birdsfoot trefoil. Crown and root rots are the most serious diseases, and these may cause damage under prolonged wet conditions.

This publication and others can be accessed electronically from the SDSU College of Agriculture & Biological Sciences publications page, which is at <http://agbiopubs.sdstate.edu/articles/ExEx8062.pdf>



Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the USDA. Larry Tidemann, Director of Extension, Associate Dean, College of Agriculture & Biological Sciences, South Dakota State University, Brookings. SDSU is an Affirmative Action/Equal Opportunity Employer (Male/Female) and offers all benefits, services, and educational and employment opportunities without regard for ancestry, age, race, citizenship, color, creed, religion, gender, disability, national origin, sexual preference, or Vietnam Era veteran status.

ExEx 8062 - PDF by CES August 1990; updated April 2002.