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Hairy Vetch for Nebraska

T. H. GOODDING



Vetch in a strip cropping system.

Hairy vetch is a winter annual legume. It may be planted either in the spring or fall.

When sown in the spring it acts like a biennial, that is, it does not set seed until the second season of growth.

For seed production purposes it is commonly planted in the fall with rye which holds the vetch off the ground.

When seeded with small grains such as rye or oats it should be sown at the rate of 15 pounds per acre, whereas if planted alone the rate should be doubled.

Hairy vetch succeeds especially well on sandy soils, but can be grown on most well-drained soils.

Inoculation is essential and should be supplied particularly where hairy vetch is grown for the first time.

Hairy vetch often succeeds on soils where sweetclover and alfalfa fail. It is more tolerant to acid (lime-deficient) soils than most leguminous crops.

The Experiment Station, University of Nebraska
College of Agriculture, Lincoln, Nebraska
W. V. Lambert, Director
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A vetch plant.

Description of Hairy Vetch

Hairy vetch, also known as sand vetch, is a viny, weak-stemmed winter annual legume. The stems attain a length of 2 to 5 feet. The stems and leaves are covered with a heavy pubescence or hairiness which gives the plant a silvery appearance when it reaches the bloom stage. The flowers are blue-violet, borne in dense one-sided clusters. The pods are light green, smooth and contain 2 to 8 small spherical seeds. When ripe the seeds are nearly black.

Uses

Hairy vetch is relished by all farm livestock. It makes good pasture, hay, and silage and is an excellent cover crop for sandy soils.

As a pasture crop hairy vetch is excellent for sheep and cattle. It should not be pastured when wet because of the danger of bloat. Even though hairy vetch is a fall annual it can be seeded in the spring either alone or with oats for pasture, hay or silage.

Vetch is somewhat difficult to handle as hay because of its viny nature and the way in which it clings together. With the use of modern haying machinery this objection can be largely overcome.

Vetch ranks high among the members of the legume family in its ability to fix nitrogen. It is a valuable crop for soil improvement, particularly if the above-ground parts of the plant are returned to the soil rather than removed, or if the crop is used for feed or pasture and the manure returned.

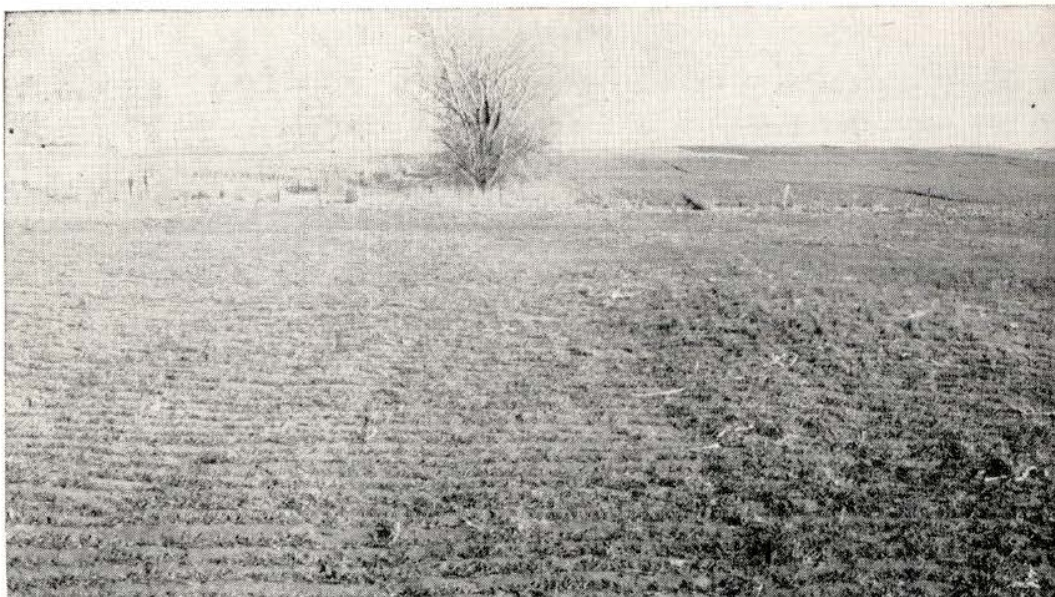
Adaptability

The two vetches most commonly grown in the United States are common and hairy vetch. Common vetch is less winter hardy and less drouth resistant than hairy vetch. Some strains of hairy vetch are more winter hardy than others. Success in growing hairy vetch in Nebraska depends to a large degree on its adaptability.

Hairy vetch prefers sandy or sandy loam soils, but the crop will succeed on a great variety of soils provided they are well drained. It grows relatively well on alkaline soils and is more tolerant to acid soils than most leguminous crops.

Method of Seeding

Hairy vetch may be seeded either by broadcasting or by drilling. The most common practice of seeding in the sandy areas of Nebraska is to drill the vetch with rye, in early September, seeding 1 bushel of rye and 15 pounds of vetch per acre. This practice is generally followed when the crop is grown for seed. The depth of planting will vary with the type of soil and the surface-moisture of the soil. Under favorable moisture conditions vetch may be seeded 2 or 3 inches deep



Fall-seeded rye on this sandy soil gave poor cover. A rye-vetch mixture would have given much better cover.

on sandy soils and 1.5 inches on heavier soils. Oats may be used as a supporting crop and for spring seeding should be drilled somewhat lighter than the regular rate, seeding the vetch at 15 pounds per acre. Spring seeding of oats and vetch is often practiced where the crop is to be pastured or cut for hay.

Hairy vetch may be seeded alone either in the spring or in the fall for pasture purposes. The viny nature of vetch makes it difficult to harvest for hay or seed when grown alone. When sown alone the rate should be increased to 25 or 30 pounds per acre.

Inoculation

Unless inoculated, hairy vetch is likely to be a failure, particularly if the soil on which the crop is to be seeded has not grown a successful crop of vetch within the past two years. Many failures with vetch are directly attributable to the lack of inoculation. Inoculation can be accomplished by using commercial cultures or by using soil from fields that have recently grown a successful crop of vetch. When soil is used, it may be mixed with the seed and drilled at the rate of a half bushel per acre and 30 pounds of seed with an ordinary drill. Commercial cultures are inexpensive. They provide cheap insurance that the right kind of organisms of high nitrogen-fixing ability will be present. Precautions set forth in the manufacturer's directions should be observed carefully.

Soil Improvement

When bacteria of the proper kind are applied to the vetch seed, the bacteria enter the tiny root hairs as the young plants begin to grow and cause the development of nodules on the roots. The bacteria in these nodules make nitrogen available to the growing plant. The nitrogen fixed not only will improve the growth of the crop, but when the land is turned to another crop the nitrogen in the legume will be released by decomposition and become available for the following crop.

Hairy vetch may not rank with biennial sweetclover and alfalfa as a soil builder, but hairy vetch can be successfully produced on many of the sandy areas of Nebraska where sweetclover and alfalfa are difficult to grow. On a sandy farm in Madison County, Nebraska in 1949, corn following rye and vetch yielded 52 bushels per acre. On the same type of soil where no legume had been grown recently the corn yielded 33 bushels.

Harvesting for Seed

The most common way of harvesting vetch in Nebraska is with the combine. Vetch should be harvested when the lower half of the pods are fully ripe. At this stage of maturity the upper pods will be fully formed and the plant will be carrying a maximum quantity of seed.

When vetch is seeded with a supporting crop like rye it can be harvested directly from the field with a combine. When seeded alone it may be necessary to cut the vetch with an ordinary mower with a swather attached, and then combine from the windrow by means of a pick-up attachment. Hairy vetch shatters easily, so the combining should be done immediately after mowing.

Pasturing

Vetch may be used for pasture and is readily eaten by all kinds of farm livestock. Cattle and sheep do the least damage in pasturing vetch. Hogs seem to be the most destructive. The possibilities of bloating cattle and sheep will be reduced if good-quality hay or straw is made available to the animals. The animals should not be turned on the lush pasture when they are hungry.

Seed

The purchaser of seed not only should inquire about its germination and purity but should investigate the source of the seed.

A strain of hairy vetch known as Madison has been placed on the certification list by the Nebraska Crop Improvement Association, College of Agriculture, Lincoln, Nebraska. This strain of vetch had been



Spring-seeded vetch. Condition on September 7.



Same plot on November 22, showing dense growth of foliage which is suitable for pasture during December and January. To avoid wind erosion, vetch should not be pastured too closely.

grown on one farm in Madison County, Nebraska for about ten years when its favorable characteristics and adaptability to Nebraska conditions were called to the attention of the Nebraska Crop Improvement Association.

Eight growers of certified Madison vetch, selected at random, harvested a total of 137 acres of vetch planted with rye during the summer of 1950. The average seed yield per acre of the rye-vetch mixture was 19.4 bushels. When separated from the rye, the vetch seed gave an average yield of 6 bushels per acre.

Utilization of Rye-Vetch Seed Mixtures

Nearly pure vetch seed can be separated from a rye-vetch mixture by use of a spiral separator, but the separation of rye from a rye-vetch mixture is quite difficult. Furthermore, the seed trade discriminates in price against rye containing vetch seed. Rye containing over 6 per cent of vetch will be placed in sample grade and for this reason probably should be ground and fed on the farm.

Varieties of rye grown for certification should not be seeded with vetch because it is so difficult to remove the rye from the vetch seed. If vetch volunteers in the rye the crop should be sprayed with 2,4-D to kill or retard the growth of the vetch and thus prevent the seed from contaminating the rye.

Members of the grain and seed trade are confident that a cheap and high-speed method of separating rye and wheat from vetch seed can be developed. If this can be done the vetch-growing area may be extended into the winter wheat section of southeastern Nebraska.

This circular was prepared by T. H. Goodding, Professor of Agronomy, University of Nebraska College of Agriculture. Photographs were provided by F. L. Duley, Soil Conservation Service-Research.