

## Yellow-Blossomed Alfalfa on Rangeland in South Dakota

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In the early 1960's, shortly after the release of 'Teton' alfalfa by the South Dakota Agricultural Experiment Station, I attended a crop improvement meeting at Bison, South Dakota. At this meeting, Dr. M.W. Adams presented a history of yellow-blossomed *falcata* alfalfa [*Medicago sativa* subsp. *falcata* (L.) Arcang.] in South Dakota, and read a list of early settlers in Perkins County who had received a small packet of *falcata* seed from Dr. N.E. Hansen. Dr. Hansen was a professor at what is now South Dakota State University at Brookings. The list indicated that my great uncle, Charles Smith, had received a seed packet in 1915. The settlers were instructed to scatter the seed by their back door.

Dr. Hansen made eight trips to Europe and Asia beginning in 1894 to collect plants that would contribute to agriculture in the Northern Great Plains. Most of the *falcata* alfalfa brought to South Dakota by Dr. Hansen originated in Siberia where he found it growing wild on the plains. Since he noticed cattle and sheep were grazing the alfalfa unattended, Dr. Hansen concluded that bloat could not be a major problem.

Charles Smith was elderly in 1915, and his son-in-law, Charles Gehrki, soon took over the operation. Gehrki

owned a steam engine and a threshing machine and raised grain crops wherever he could. He also raised sheep, but went broke during the drought and grasshopper years in the 1930's and lost the land. Chris Snorteland, a large cattle and sheep rancher, bought the Charles Smith ranch from the county and my wife and I bought it back from the Chris Snorteland estate in 1971. At that time there were some isolated plants and a few small patches of *falcata* alfalfa that had survived and spread from the 1915 planting.

We grazed the alfalfa during the spring and summer for the first few years after purchasing the land. One fall we noticed considerable seed production from 2 or 3 patches. After that we grazed the alfalfa in the spring, fall, and early winter, but kept the cattle off during the summer to allow seed production. In 1995, 350 yearlings were on grass-alfalfa pastures from April 15 to June 1, and our cow herd grazed them from October 20 to January 1. We had no problems with bloat.

Around 1982, we started seeding *falcata* alfalfa in 42-inch rows in plowed ground and interseeding it in 60-inch rows in crested wheatgrass and native pastures. Since then, the *falcata* alfalfa has spread to a solid stand on the plowed land and has spread between the 60-inch interseeded



*Falcata* on the Norman Smith ranch, Lodgepole, South Dakota, 1996.



Norman Smith and *Falcata* alfalfa in bloom on Smith ranch, Lodgepole, South Dakota, 1996.

rows. The most amazing thing about *falcata* alfalfa is its ability to reseed and compete with grasses in our semiarid environment (about 15 inches average annual precipitation). I have good stands of *falcata* alfalfa on nearly 200 acres of pasture where it has established completely on its own without interseeding.

I have been interseeding alfalfa into grassland since 1963. A furrow is made using an 8-inch cultivator sweep with a bar welded across the front to keep the sod from falling back into the furrow. This makes a furrow about 8 inches wide and 1 to 2 inches deep. A John Deere No. 71 flexplanter is mounted on a tool bar behind the furrow openers. I have found that the furrows fill in and practically disappear in a few years. A total of about 400 acres, about 150 of which trace back to *falcata* alfalfa from the 1915 planting, have been interseeded. I have also used the cultivars Foster, Teton, and Travois for interseeding, but their long-term survival under grazing is not as good as the yellow-blossomed *falcata* alfalfa.

*Falcata* alfalfa brought to South Dakota from Siberia by Dr. N.E. Hansen is a unique rangeland plant with much potential. Dr. Hansen's prediction that it would "probably hold its own against any other rangeland plant in the Northern Great Plains" has been proven. Our experience with *falcata* alfalfa on our ranch can be summed up as follows:

Stands have survived for over 80 years under stresses from drought, cold, grasshoppers, grass competition, and sheep and cattle grazing.

It reseeds itself and spreads naturally in rangeland.

It protects itself by going dormant in dry times. It will not produce as much forage as other alfalfas in dry years, but it will regrow and blossom after a late rain.

Regrowth is not as rapid as other alfalfas, but this may be a survival mechanism when grazed.

Seed production is lower than other alfalfas, and hard seed may not germinate the first year after seeding. Hard seed remains viable in the soil over extended periods of drought.

New stands may take up to 4 to 5 years to become fully established in grass-alfalfa pastures.

*Falcata* alfalfa has fine stems and small leaves compared with other alfalfas. It has high nutritive value, and we have not experienced problems with bloat under our grazing management practices.

Once fully established, *falcata* alfalfa will double or triple forage production of pastures in most years.

My father, Newell B. Smith, filed on the home quarter in 1907. It is located in the northwest part of South Dakota in Perkins County. We are 25 miles northwest of Bison, South Dakota. My wife, Leotta, and I, and my son, Tim, and his wife, Gwynne, own and operate a 500 cow-calf/yearling ranch on 9,000 acres of deeded land. We also have a permit in the Grand River Grazing Association, which is a government pasture. We sell 1/3 of the calves after the first of the year. The remainder we run as yearlings on grass. Most years we send yearlings to a feed lot, but some years we sell them by Sept. 1, depending on the cattle market.

We do not have any *falcata* seed for sale at this time. Grasshoppers destroyed our alfalfa seed crop in 1996. They are also a serious threat in 1997. We are continuing to expand our use of *falcata* in our pastures.

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