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# Extension Extra

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COLLEGE OF AGRICULTURE & BIOLOGICAL SCIENCES / SOUTH DAKOTA STATE UNIVERSITY / USDA

## Forage Potential of Cicer Milkvetch

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Cicer milkvetch (*Astragalus cicer L.*), a legume native from the Caucasus Mountains in Asia across southern Europe to Spain, was introduced into the United States in the 1920's. It's used for grazing, hay, and soil conservation in the northern and central Rocky Mountain Region of the United States and western Canada. Cicer milkvetch is gaining popularity in other regions of the United States because it is more tolerant than alfalfa to acidic or alkaline soils and does not cause bloat in grazing animals.

Several South Dakota producers planted small acreages of cicer milkvetch in spring 1989. These acreages are being monitored, and producer experiences with this crop will be publicized.

### Characteristics

Cicer milkvetch is a long-lived perennial that spreads by rhizomes. Leaves are pinnately compound with 8 to 17 pairs of leaflets plus a terminal leaflet. The plant blooms with up to 50 pale yellow to white flowers.

At maturity the plant has black seedpods with up to 12 seeds, generally bright yellow. The seed has a shiny, hard coat and must be scarified before planting.

Cicer milkvetch does not contain toxic levels of nitro compounds, tannins, oxalates, or alkaloids, and no documented cases of bloat have been reported. This species is as winterhardy as alfalfa, and winterkill should not be a problem in South Dakota.

### Seeding

Prepare a firm, weed-free seedbed. Control weeds prior to seeding because post-emergent herbicide options are limited. Seed may be scarce in South Dakota, but it can be obtained from other states such as Wyoming and Montana.

The recommended planting rate is 6 to 8 pounds pure, live seed per acre, at a depth of 1/2 to 3/4 inch. Inoculate seed with *Astragalus*-specific *Rhizobia* bacteria prior to planting. This is available through some commercial seed firms.

Plant in late April to early May. Cicer milkvetch requires higher soil temperature than alfalfa for germination and growth. It generally will emerge within 10 to 14 days after planting, but seedling growth is slower than for alfalfa. Don't plant a companion crop with cicer milkvetch; that's too much competition for the milkvetch seedlings.

Three cicer milkvetch cultivars have been developed. 'Lulana' was released in Montana and Wyoming in 1970; 'Oxley' was licensed for use in Canada in 1971; and 'Monarch' was released in Colorado in 1980.

### Hay Production

The productivity and stand persistence of cicer milkvetch depends on harvest management. It cannot tolerate frequent cuttings. Recent Iowa State University research demonstrated that cicer milkvetch harvested three times annually produced 40% less dry matter yield than alfalfa. Cicer milkvetch harvested twice annually yielded 20, less

than alfalfa. It recovers more slowly than alfalfa because its regrowth originates primarily from axillary buds.

Despite yielding less than alfalfa, cicer milkvetch is an alternative legume for sites in South Dakota that have rolling topography or lack the fertility to sustain alfalfa.

### Forage Quality

Research conducted at the University of Minnesota indicated that lambs grazing cicer milkvetch had similar weight gains as those grazing alfalfa (Table 1).

Table 1. Forage quality and performance of lambs grazing cicer milkvetch and alfalfa.

Measurement	Cicer Milkvetch	Alfalfa
Crude protein (%)	21.0	21.7
Digestible dry matter (%)	73.5	71.5
Average daily gain (lb)	0.49	0.48
Lamb days per acre	1503	1489

Adapted from Marten and Jordan, Univ. of Minnesota, 1988.

### Pasture

Cicer milkvetch is well-suited for grazing because it's non-bloating and it's strongly rhizomatous. A recent Minnesota study indicates, however, that grazed cicer milkvetch can be unpalatable and may cause photosensitization (sunburn) in lightly pigmented cattle. In some instances livestock completely rejected cicer milkvetch forage.

These problems with cicer milkvetch may be environmentally related. Studies from the western United States have reported grazing consumption of cicer milkvetch similar to alfalfa. Palatability or photosensitization problems have not been found in any of these studies. Additional research is needed to show what caused the negative traits of cicer milkvetch reported in the Minnesota study.

### Insect and Disease Resistance

Few insect and disease problems have been encountered in cicer milkvetch in North America. Light cases of root-, crown-, and stem-rot have been the only diseases reported. Iowa State University research indicates cicer milkvetch is more resistant than alfalfa to forage insect pests such as alfalfa weevil and potato leafhopper. Its insect resistance superiority makes cicer milkvetch suitable for areas where severe insect problems are common.

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