

## The Value of Annual Cover Crops in Grazing Systems in North Dakota

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Cover crops have had a recent resurgence in the Northern Great Plains for soil health attributes, erosion control, and providing a means of extended grazing options for livestock. Cover crops have been utilized for centuries worldwide, and plants such as crimson clover and rye have been documented since the late 1800's in this country for use as a soil amendment.

Our prairie systems, in their native state, contain legume components for fixing nitrogen such as Purple Prairie Clover (*Dalea purpurea*), and Leadplant (*Amorpha canescens*). Diversity and the slow release of nitrogen by these plants build productivity. Along with the potential of high organic matter which helps in water holding capacity, healthy grazing lands can be a good model of nutrient management through livestock grazing.

Recently, the use of cover crops has increased in the upper Midwest. A USDA SARE funded survey in 2012-2013 showed that the use of cover crops, which is supported by NRCS conservation practices, increased by almost 5 times in a 5 year period.

Annual cover crops and livestock are not exclusive. The cover crops can be utilized as a means of supplemental feed through fall and winter, either through grazing or through dried and baled forage mixes such as oat, pea, millet, and many others. In turn, livestock cycle 85 – 90% of the nutrients they consume back out on the land, contributing to further nutrient addition.

Forage varieties of crops now exist which can assist a producer in producing crops for cover and livestock feed.

Research based studies done through NDSU show that annual cover crops for extended fall grazing can be a viable method of growing calves and maintaining cows while reducing time in the winter feedlot. Winter cereals such as rye and triticale planted in the fall can also provide a means of early spring grazing or baled feed for livestock. If possible, cover crops are best planted in a mix for soil health benefits. Brassicas should always be planted in a mix or grazed with additional baled forage as they are highly digestible and some areas have shown high nitrate levels.

Like any other crop, cover crop yield is highly dependent on annual precipitation. This is especially true of a double crop system due to the variability of late summer moisture.

The value of cover crops in a system should be considered for the long term for two reasons: 1) soil health is a long term process and 2) the value of a breeding cow in the herd is a long term investment. Therefore, cover crop costs and benefits should be weighed in the light of these two factors. The cost per acre of seeding cover crop can be high when compared with other crops; however, long term benefits may compensate depending on land conditions, producer goals, and livestock herd performance.

### Additional Resources:

NDSU Extension publication Annual Cover Crops for Grazing and Haying in the Northern Plains at: <https://www.ag.ndsu.edu/publications/landing-pages/livestock/cover-crop-options-r-1759/>

USDA ARS (Mandan) Cover Crop Chart at:

[http://www.ars.usda.gov/SP2UserFiles/Place/30640500/CCC/CCC\\_v13\\_5\\_2012.pdf](http://www.ars.usda.gov/SP2UserFiles/Place/30640500/CCC/CCC_v13_5_2012.pdf)

USDA SARE information on cover crops at:

<http://www.sare.org/Learning-Center/Topic-Rooms/Cover-Crops>