



This newsletter is a joint effort from the following organizations:



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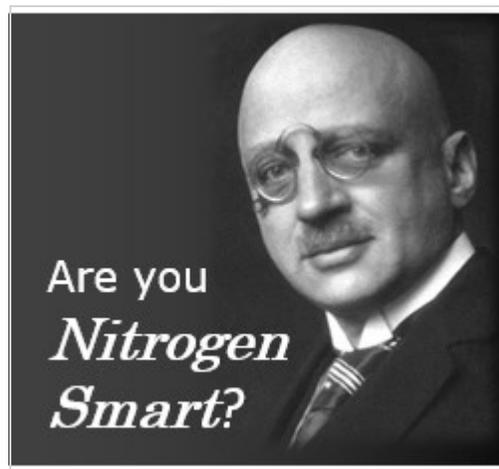
## Nitrogen Smart

Nitrogen Smart is a training program for producers that presents fundamentals for maximizing economic return on nitrogen investments while minimizing nitrogen losses. The workshops deliver high-quality, research-based education so producers can learn:

- Sources of nitrogen (N) for crops
- How nitrogen is lost from soil and how you can reduce losses
- How to manage nitrogen in drainage systems
- What the new Nutrient Reduction Strategy and Nitrogen Fertilizer Management Plan mean for Minnesota producers
- Practices to refine nitrogen management, including split applications, alternative N fertilizers, soil and tissue testing and N models

The *Nitrogen Smart* trainings are presented by University of Minnesota Extension, funded by Minnesota Corn Growers, and hosted by the Minnesota Agriculture Water Resource Center at several locations throughout Minnesota during February and March. Pre-registration is not required and there is no registration fee.

For more information on *Nitrogen Smart* and details about the trainings, contact Brad Carlson ([bcarlson@umn.edu](mailto:bcarlson@umn.edu) or 507-389-6745).  
[www.extension.umn.edu/agriculture/crops/events/nitrogen-smart/](http://www.extension.umn.edu/agriculture/crops/events/nitrogen-smart/)



## LIVE ~ LOVE ~ GRAZE

Article by: USDA-NRCS Staff

Live, Love, Graze is a new phrase that you will hear while working with the USDA-NRCS (United States Department of Agricultural, Natural Resources Conservation Service) staff.

For producers who manage grazing livestock operations, prescribed grazing systems offer an effective way to reduce energy use, decrease costs, and improve animal health and productivity. Well-managed grazing systems improve health and vigor of plants, enhance the quality of water, and reduce accelerated soil erosion and improve soil condition on the land.

A prescribed grazing system allows producers to alternate between resting and grazing two or more grazing units in a planned sequence that takes several factors into consideration, including the rate of plant growth, level of vegetative cover, needs of the grazing animal, and other environmental inputs. The availability of water throughout the grazing areas is also important because it minimizes concentrated areas of livestock and enhances nutrient distribution.

It takes 40 pounds of nitrogen and about 1.35 gallons of diesel fuel to raise, harvest, store, and feed a ton of grass hay. At today's costs of \$0.40 per pound of nitrogen and \$2.41 per gallon of fuel, there are direct energy savings of \$10.70 per month per cow for each month cows remain on pasture. Most cost savings arise from using less fuel to harvest hay, store it, and transport it to feeding locations. In dairy operations, leaving cows on pasture also reduces the need for electricity to moderate the climate of freestall barns, and decreases labor costs associated with feeding cattle in confinement and associated manure handling, storage, and spreading.

In addition to energy savings, prescribed grazing has been shown to improve the profitability of cattle operations. In Missouri, beef cattle raised and finished on high quality pasture that is thick and lush have been shown to have a rapid average daily gain of two or more pounds and reach a marketable weight within just 20 months at a cost of \$27 per hundred-weight of gain, versus \$60 in confinement. By applying grazing management, dairies in New York and Wisconsin found that pastured lactating dairy cows consistently show a higher net farm income from operations over a 4-year period when compared to confined cows, whether measured per cow or per hundred-weight of milk.

There are 634 million acres of non-Federal grazing lands in the United States. Making prescribed grazing part of a resource management system also benefits the overall health of the environment by:

- Minimizing soil compaction due to trampling and enhancing soil quality;
- Providing vegetative cover to help reduce soil erosion and sediment runoff;
- Enhancing wildlife habitat;
- Improving water yield and quality; and Sequestering atmospheric carbon in the soil.

NRCS supports conservation practices that save producers money and improve the environmental health of the Nation. For more information on energy-saving conservation practices, visit the NRCS "Save ENERGY, Save MONEY" Web site at [www.nrcs.usda.gov](http://www.nrcs.usda.gov).

If you are interested in creating a prescribed grazing system or thinking about enhancing your current grazing system, contact your local District Conservationist with NRCS for more information and what programs are available for financial assistance. If you are not too sure where your county office is located at, you can find them on the web at [www.nrcs.usda.gov](http://www.nrcs.usda.gov) and click on "Contact Us".

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## Planning Sacrifice Areas to Protect Perennial Pasture Resources

By: Eric Mousel, U of M Beef Team

Calving time in Minnesota is a precarious time due to the dilemma's presented concerning space, time, and climate. It is no secret that the climate in Minnesota, particularly in the eastern half of the state is challenging. Especially at the time when many cow outfits are trying to calve cows; after the coldest part of the winter but ahead of spring field work. The primary issues are the high humidity and the tendency for temperatures to oscillate diurnally above and below freezing, creating a mire of soupy mud that freezes overnight and thaws the next day.

As a result of this messy situation, many outfits feel it necessary to calve cows in lots that are close to the farm yard and have easy access to water. Although extremely handy, this is a pathogenic nightmare as cows, calves, and everything else become caked with mud and manure. Even a consistent freshening of bedding does not completely mitigate the mess.

The real problem with this scenario is the exposure of calves to scour causing viruses and bacteria, cryptosporosis, and coccidiosis. University of Minnesota data estimates that on average 10-15% of the annual calf crop is lost between calving and weaning; pathogenic illness between 1 to 3 months of age is the most frequent cause of these death losses. The economic impact of this issue is astronomical in Minnesota. Once cow udders get caked in mud and manure and the passive immunity from cow to calf wears off after about a month, the incidence of scours or other problems increases dramatically.

The academic solution is to calve the cows out on pasture to get them out of the tight confines of winter lots; out of the mud and manure, but that creates multiple additional issues that need to be addressed to do it successfully. Water and protection from the wind are the two biggest obstacles. However, the biggest long term issue is damaging the pasture once the frost goes out in the spring. For many outfits, developing and managing a sacrifice area that has a perennial covering of thick sod is going to be one of the most beneficial ways to accomplish calving objectives without long-term damage to the overall pasture.

The specifics of how to use the sacrifice area in conjunction with available lots is going to largely be dependent on the individual situation; but in simple terms a sacrifice area should be as high and well-drained as possible. The objective of many of these areas is to give cows and calves a clean, dry place to loaf, out of the wind, and away from the feed and water sources where mud and manure tends to accumulate. The sacrifice area should largely be used to bed cattle out of the wind and that is it. Bedding should be freshened periodically and after every snow. Manure will continue to accumulate in bedded areas, thus bedded areas may need to be moved around the area periodically to maintain cleanliness of cows.

Another additional benefit of maintaining a sacrifice area is to limit early grazing. The detriments of grazing too early are well documented. Grazing perennial grasses prior to 3<sup>rd</sup> leaf emergence in spring will reduce annual production by at least 30%. Another issue with early grazing is the additional erosion created by reducing grass root production by at least 70%.

Creating a winter and spring system of sacrifice pastures or areas will solve many issues for cow-calf outfits in Minnesota if properly laid out, maintained and utilized. Keep in mind the primary objective of these areas is to keep cattle out of the mud and wind.

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