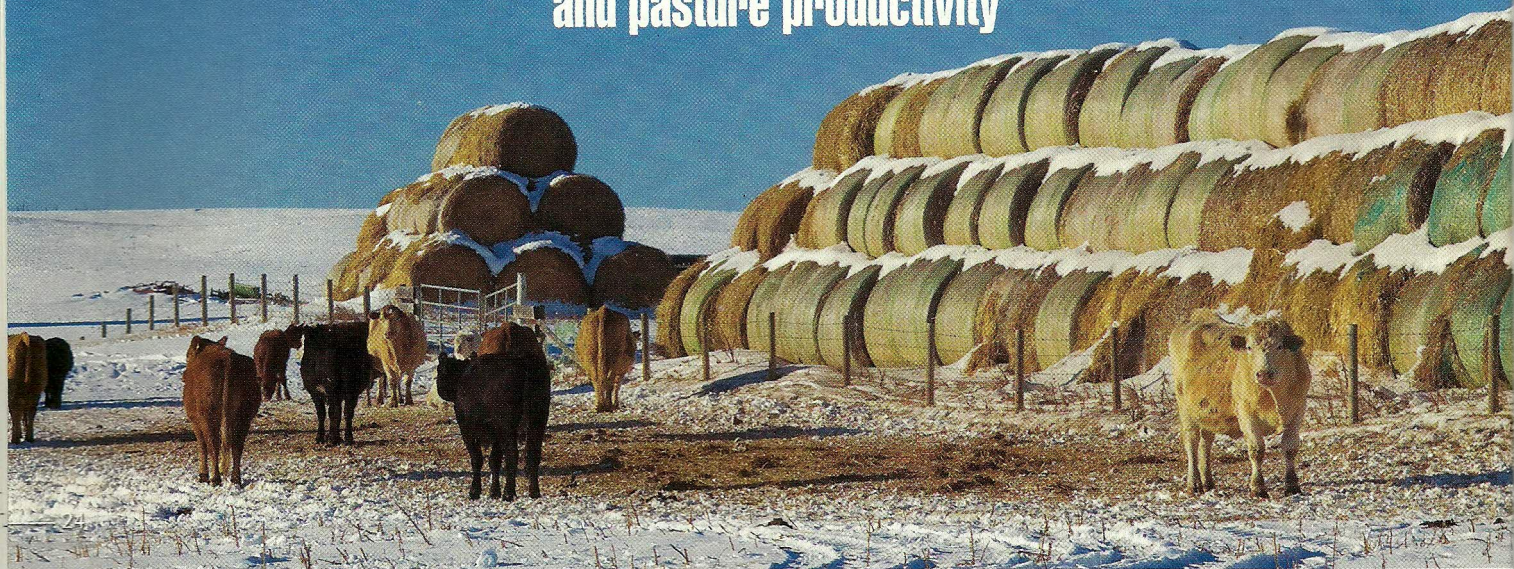


The art of winter bale-grazing

Studies help improve environmental performance and pasture productivity



Winters are long and cold on the Canadian Prairies. While a lot of cattle producers have traditionally kept livestock in confined wintering sites such as corrals or barns, many are switching to extensive winter feeding systems, which aim to spread feed, cattle and manure uniformly across a field.

Making the switch can lead to production and economic benefits such as increased soil fertility and associated crop or pasture yields, reduced fuel and labour costs and, according to some specialists, improved herd health.

Research from the Western Beef Development Centre in Saskatchewan suggests that there may be increased nitrogen capture in the soil profile due to winter bale-grazing, compared to manure spread from a corral. This may result in increased nutrient use efficiency per unit of land area (increasing pasture growth). In addition, improving pasture production reduces or eliminates the need for cultivation to rejuvenate old pastures. Leaving pastures intact maintains vegetative cover, protecting the soil from wind and water erosion and preserving carbon stored in the soil. While many of the practices used in in-field winter feeding systems are considered economically and environmentally beneficial, inadequate management of these sites may result in nutrient and bacterial loss to nearby water bodies.

Agriculture and Agri-Food Canada (AAFC) has been investigating winter bale-grazing at a number of sites throughout the Prairies to better understand and improve nutrient-use efficiency within these systems. The Watershed Evaluation of BMPs (WEBs) program, has been investigating the environmental and economic effects of beneficial management practices (BMPs) at nine watershed sites across Canada. Winter bale-grazing is being assessed in two of those locations – the Pipestone Creek Watershed in southeastern Saskatchewan and the South Tobacco Creek Watershed in southern Manitoba.

Pipestone Creek

In the Pipestone Creek Watershed, the practice has been under investigation since 2010. The landowner bale-grazes 800 head of cattle on 40-acre paddocks, and has found considerable improvements in pasture quality as a result. Researchers have set up a series of experiments to compare the chemistry and biology of runoff water from bale-grazed fields to fields that have had no manure spreading or bale-grazing, as well as to fields that have had fall-spread manure. As yet, there are no published findings from the study.



A bale-shredder unravels bales for winter feeding.

South Tobacco Creek

In the South Tobacco Creek Watershed, lead researcher Jim Yarotski and his WEBs team have been studying the practice since 2009, although the scale is much smaller than that of its Saskatchewan counterpart. The fields under study are each under three hectares, with one having about 60 head of adult cattle grazing for 30 days in November/December every other year, and the other with no livestock, to act as a control. Forage is spread in windrows, and wind shelters are provided.

The teams are monitoring runoff and collecting water, soil and residue samples from the two fields. Water quality samples are also being collected from the farmer's feedlot, and the data will be used for comparison. Future research will also compare the runoff from the bale-grazed fields to fields spread with manure from the feedlot. As yet, there are no available findings from this study, as much of the collected data has not yet been analyzed, but the researchers hope that the work will provide guidance and recommendations on this practice, and also shed some light on the behaviour of nutrients and pathogens during the snowmelt runoff season.

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