



Western Beef
Development Centre
Division of PAMI



*September 9, 2010
For Immediate Release*

2010 HAY CROP ISSUES DUE TO ABOVE AVERAGE RAINFALL

Record rainfall made haying a chore in 2010, and now many producers must manage poor quality hay, say industry advisors.

Most of the agricultural regions of Saskatchewan had much higher than normal rainfall from April to August, and most of central Saskatchewan had record amounts. Haying is usually completed in July, but is being completed much later due to this year's rainy weather which created conditions where field drying was difficult to impossible.

Hay must be dried to 15% moisture to store properly. The wet summer this year has resulted in a significant amount of hay being made that is too wet to store properly. Mold and heat damage occurs when hay is made above 18% moisture. Moldy hay means a loss of protein and energy levels for feeding to cattle and other livestock.

Tough hay (above 18% moisture) in stacks or storage can generate enough heat to start on fire. Wet hay that is at risk of heating should be monitored with a temperature probe. It should be stacked or stored separately from dry hay to prevent catastrophic loss in the event of fire.

Other regions (e.g., Ontario, Northeast US states) typically have wetter summers and have experience with managing wet hay issues. Producers can find useful information from the Saskatchewan Ministry of Agriculture Ag Knowledge Centre, Saskatchewan Forage Council, or the Western Beef Development Centre.

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Backgrounder: Issues with Moldy & Heat Damaged Hay

The 2010 growing season in Saskatchewan has been one of the wettest on record. Precipitation statistics show large parts of the province have received 150 to 200% of average rainfall, with some areas exceeding 200% of average.ⁱ Wet years are not common on the Prairies, but when they do arise they can create major problems for agriculture – crop, livestock and forage producers.

Record rainfall delayed haying this year. Typically haying occurs in July, but many producers are still out cutting and baling into late August and September. And in many instances, producers are baling hay that is tough (>18-20% moisture). However, safe hay moisture level depends on the density and size of the bale. While moisture meters (retailing between \$200-300) are a good investment to test bale moisture and avoid baling too wet, some producers may have felt pressured to just get hay made despite high moisture levels.ⁱⁱ Producers using moisture meters should calibrate them before use (compare them to oven-drying).

If hay is not cured sufficiently in the windrow prior to baling there will be mold growth, heat damage and a subsequent loss in nutritional value (protein and energy).

Producers faced with this reality must manage quality and palatability issues arising from heat damaged and moldy hay, say industry advisors.

While mold may be visible when feeding bales this winter, it is a good idea to have your feed tested to check for heat damage. The acid detergent insoluble nitrogen (ADIN) test is key to detecting if hay has received heat damage.ⁱⁱⁱ Be sure to advise the testing lab to add the ADIN test as it is not typically part of a general feed analysis.

If a producer's hay has mold there are several strategies to minimize potential dangers:

- Limit feeding of moldy hay to backgrounder/finisher calves and bulls and avoid feeding moldy hay to pregnant cows due to risks associated with mycotoxins.
- Roll moldy forages on the ground or run bales through a processor so mold spores blow away and livestock can be more selective of which plant parts to consume.^{iv}
- Try to limit moldy hay to 40-60% of your livestock's ration makeup, mixing moldy hay with good quality forage.^v
- Supplement Vitamin A to avoid deficiencies associated with feeding moldy hay fed for long periods.^{vi}

Lastly, if high moisture hay is placed into confined storage there is risk of spontaneous combustion due to reduced air circulation and release of heat from the bales. The risk tends to be low for most producers as bales are often left out in the field for several weeks after baling. However, if temperatures of stored hay rise above 130°F (55°C), a chemical reaction may occur producing flammable gases that can ignite when exposed to air. It is suggested that a producer check hay regularly if they know their hay was baled at moisture levels over 20%. Homemade temperature probes are easy to construct to check temperature.^{vii}

Additional information and questions related to moldy and heat damaged forages is available by contacting any of the following technical experts:

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Saskatchewan Ministry of Agriculture Regional Offices and Forage Specialists

Kindersley 306-463-5513 John Hauer, Regional Forage Specialist	Swift Current 306-778-8285 Trevor Lennox, Regional Forage Specialist
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Regina 306-787-8087 Saskatoon 306-933-8116	Yorkton 306-786-1531 Todd Jorgenson, Regional Forage Specialist

ⁱ AAFC – National Agroclimate Information Service. 2010. Percent of Average Precipitation (Prairie Region) April 1, 2010 to August 29, 2010. Available online at: http://www.agr.gc.ca/pfra/drought/prpgs10_e.htm

ⁱⁱ Price quotes obtained from a local Case New Holland dealership; \$211 is the cost of a 20" probe and \$329 is the cost for a unit that tests the moisture of a windrow.

ⁱⁱⁱ Alberta Agriculture and Rural Development (AARD). "Heat Damage in Silage and Hay". Adapted from *Alberta Agriculture Beef Herd Management Reference Binder and Study Guide - 307*. Available online at: [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/for4906](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/for4906)

^{iv} Feist, M. 2003. *Factors to consider when feeding mouldy hay*. Saskatchewan Agriculture and Food.

^v Neel, J.B. "Feeding Moldy Hay to Beef Cattle." The University of Tennessee Extension. Info Series: AS-B 349. Available online at: <http://animalscience.ag.utk.edu/beef/pdf/Drought/ASB349FeedingMoldyHaytoBeefCattle.pdf>

^{vi} Alberta Agriculture and Rural Development. 2003. "Moldy Feed and Reproductive Failure in Cows." *Agri-Facts*. Agdex 666-5. Revised May 2003. Available online at: [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex849](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex849)

^{vii} House, H. 1998. "Spontaneous Combustion and Hay Fires." Ontario Ministry of Agriculture, Food & Rural Affairs (OMAFRA) Available online at: <http://www.omafra.gov.on.ca/english/livestock/dairy/facts/hayfires.htm>