



Simple strategies to reduce impacts of ergot alkaloids on beef cattle.

REDUCING ERGOT'S IMPACT

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Background: Ergot is plant disease caused by a fungus (*Claviceps purpurea*). It can infect many species of open pollinated annual crops and forages, including rye, triticale, wheat, barley, bromegrass, wheatgrass, orchardgrass, and bluegrasses, among others. The fungus replaces the grain or seed kernels with hard, black or purplish ergot bodies known as sclerotia.

The ergot bodies contain a variety of alkaloids that can be detrimental to cattle health and welfare. Toxicity varies depending on the amount and type of alkaloids present in an ergot-contaminated feed source. High levels of ergot contamination can cause sloughing of hooves, ears, or tails. Rarely, nervous symptoms like convulsions or temporary paralysis may also occur. Long term exposure to low levels of ergot contamination may cause a reduction in milk production and growth, or spontaneous abortions.

Ergot contamination and toxicity can be concentrated in products like pellets that are made from grain screenings, but some [previous research](#) in sheep has demonstrated that certain pelleting processing strategies may help reduce ergot toxicity levels.

Objectives: The objectives of this study are to:

1. Determine if common cereal ergot alkaloid profiles exist in various growing regions and across different cereal crops in Alberta and Saskatchewan
2. Determine if low-cost feed processing strategies (heating, pelleting) or storage for two years changes the types of ergot alkaloids present or their concentrations
3. Evaluate the utility of the most promising grain-processing strategy in a cattle-feed study

Implications of the Research: If low cost grain processing strategies are indeed effective at mitigating the risk of ergot toxicity across the multiple alkaloids and concentrations that may be present in cereal grains in western Canada, feed companies will be able to pro-actively process feed that has a high risk of ergot contamination, such as mill-run grain or screenings. If storage effectively reduces ergot toxicity, it would be possible to stockpile ergot contaminated grain for future use, potentially reducing the negative animal health and welfare impacts of ergot.

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