

BCRC BEEF SCIENCE CLUSTER

RESEARCH

Facts

IN PROGRESS

Do wheat DDGS affect E.coli 0157:H7 shedding? FOS.02.09

Project Title: Examining the Impact of Wheat Distillers Grains on the Shedding of E.coli 0157:H7

Researchers: Dr. Tim McAllister, AAFC Lethbridge, Dr. Kee Jim, Feedlot Health Management Services, Dr. Calvin Booker, Feedlot Health Management Services and Dr. Kim Stanford, ARD Lethbridge

Background: The expansion of North America's ethanol industry has increased feed grain costs and increased the use of distillers dried grain with soluble (DDGS) in feedlot rations. Some U.S. reports indicate that feeding high levels of corn DDGS may double the prevalence of E. coli 0157:H7 shedding. Canadian studies examining this issue in rations with wheat DDGS have used small numbers of cattle that have been experimentally inoculated with E. coli 0157:H7. The ecology of E. coli 0157:H7 in inoculated animals differs from those that are naturally colonized, so research is needed to determine whether adding wheat DDGS to feedlot diets triggers E. coli 0157:H7 shedding.

Objective: to evaluate the impact of incorporating different levels wheat DDGS in feedlot diets on E. coli 0157:H7 shedding.

These researchers will feed thirty pens of commercial feedlot cattle (300 head per pen, 9,000 animals) containing 0, 20 or 40% wheat DDGs for the complete feeding period from entry to the lot until shipment for slaughter. Fresh manure samples will be collected weekly during the peak E. coli 0157:H7 shedding period (June to November). Fecal pH will be measured, and E. coli 0157:H7 will be detected and counted in the lab. Hide swabs will be collected from 450 animals immediately prior to shipment for E. coli 0157:H7 detection and counting. The effect of DDGS inclusion rate on E. coli 0157:H7 prevalence and shedding will be determined.

Implications: Determining optimal DDGS inclusion rates that minimize the risk of E. coli 0157:H7 shedding will be important to ensuring a competitive cost of production while maintaining food safety.

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