



RESEARCH AND TECHNOLOGY DEVELOPMENT FOR THE CANADIAN BEEF INDUSTRY

Measuring the Canadian Beef Advantage

PROJECT TITLE Development and validation of a new platform technology for non-invasive carcass fat and lean predictions in beef cattle

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Background

Agriculture and Agri-Food Canada's Lacombe research station has been instrumental in developing the Canadian beef carcass grading system, automated grading technology, and determining the effects of genetics and management on carcass value. The science from this program has also helped inform federal grading regulations. However, large scale carcass cut-out projects are tremendously expensive to conduct, and the funding and lab expertise available to do this type of work has declined drastically over the past 15 years. This research will help to address industry concerns regarding the loss of beef grading research capacity at the AAFC Lacombe Research Station.

Objectives

This research will determine whether Dual Energy X-Ray Absorption (DEXA) scanning of the carcass can be used as a less expensive, non-destructive alternative to full carcass dissections. Carcasses from 160 fed steers and heifers will be run through the DEXA system, then be completely dissected into backfat, seam fat, body cavity

fat, lean and bone. The researchers will then develop an equation that uses the DEXA readings to predict the carcass dissection results. The equation will be validated on 80 additional carcasses from research cattle, as well as 100 carcass sides collected from a commercial packing plant.

This project will not develop a new grading technology, but it will develop an alternative to manual carcass dissection. If the DEXA equations are able to accurately predict the dissection results, then there will be much less need to conduct costly, time consuming carcass dissections in the future. Carcasses could simply be run through the DEXA scanner instead.

Implications

This technology should help AAFC Lacombe to continue its traditional role in carcass evaluation research in a more cost effective manner. This will benefit the development of science-based carcass grading regulations, contribute to animal nutrition and genomics research programs, and help develop more accurate methods of determining carcass yield grades.

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