Project Title: **An Evaluation of the Portable HunterLab Video Imaging System (BeefCam) As a Tool to Predict Tenderness of Beef Carcasses Using Objective Measures of Lean and Fat Color**

Principle Investigators: **A.M. Wyle, R.C. Cannell, K.B. Belk, M. Goldberg, R. Riffle and G.C. Smith: Colorado State University**

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Layman's Summary:

A study was conducted to evaluate the performance of the HunterLab Video Imaging System (BeefCam) for accuracy and precision in predicting the tenderness of beef carcasses. Three trials using Beefmaster type carcasses (528) from three different packing plants were conducted. The carcasses were evaluated for color of the ribeye and color of fat. Steaks were collected and evaluated for tenderness using the Warner-Bratzler shear force test. Trial I determined the best prediction model for sorting groups into "tough'' or ''tender''. Trial II was done to validate the model *from* trial I. Trial II was conducted to test system modifications and to sample carcasses not exposed to high-voltage electrical stimulation.

Trial I and II showed that the system could accurately sort "tough" carcasses from 'tender" ones without incorrectly identifying too many carcasses (97% and 96% accuracy, respectively). However, the carcasses that were selected for trials I and II did not represent many carcasses that would be considered "tough". The BeefCam system was less accurate in sorting out the "tender" carcasses, as the probability of a "tender" carcass being classified as "tough" was 62% mid 76% in trials I and II, respectively. System modifications attempting to correct these problems proved unsuccessful. Results from trial II were not as promising as the results from trial I.
Although these results show promise, the underlying problems will need to be addressed before new tests are initiated.

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