

# Hawaii beef producer animal health and welfare certification training and impact evaluation

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## Introduction

In Hawaii, cattle production is among the top agricultural commodities; however, most of the cattle are sent to mainland feedlots for finishing. Along with rising transportation costs and the economic constraints of feed importation, the production of local, grass-finished beef is a viable alternative to shipping feeders to the mainland. Minimizing physiological and psychological stress of cattle is essential for finishing beef cattle in both traditional feedlots and grass-finishing systems; thus, Hawaii ranchers need to be educated on best health and welfare management practices. The purpose of this study was to: (1) develop workshops to educate Hawaii ranchers on best health and welfare management practices, (2) determine current knowledge and attitudes regarding health and welfare management practices, (3) use pre- and post-workshop questionnaires to determine whether workshops significantly improved ranchers' knowledge and attitudes, and (4) determine if proper health and welfare management practices are important to Hawaii ranchers.

## Materials and Methods

Workshops were developed with the aid of resources from the National Beef Quality Assurance Program, Master Beef Producer programs, and veterinary literature on beef cattle welfare. The pre- and post-workshop questionnaires were constructed identically with 10 knowledge and 10 attitude questions. Questionnaire content was validated by extension faculty and the study was approved by the University of Hawaii Institutional Review Board. Ranchers were invited to attend one-day workshops on the islands of Maui, Hawaii, and Kauai. At the start of each workshop, ranchers were given a unique identification number and asked to fill out the pre-workshop questionnaire, which included questions regarding demographic information and a consent form.

Immediately following the workshop, ranchers submitted their post-workshop questionnaire and evaluation form. Responses were coded and then analyzed using SAS and the JMP Pro 9.0.2 Matched Pairs platform.

## Results

A total of 122 ranchers submitted both a pre- and post-workshop questionnaire. After exclusion of minors and late participants, the study database consisted of 95 males and 16 females ranging in age from 21 to 70 years. Workshop participants included ranch owners, managers, and workers with education backgrounds that ranged from elementary to one individual with a doctorate. Analysis of complete question sets ( $n=97$  for knowledge;  $n=108$  for attitude) showed a significant improvement in knowledge (mean difference; 1.76;  $P < 0.0001$ ) and attitude (mean difference, 5.14;  $P < 0.0001$ ). Participants familiar with the Beef Quality Assurance program had a significantly higher mean score in both knowledge (mean, 18.23;  $P = 0.0034$ ) and attitude (mean, 46.01;  $P = 0.0177$ ). Gender, age, and employment status had no significant effect on knowledge and attitude scores.

## Significance

Analysis of pre- and post-workshop questionnaires showed that workshops were very effective at improving ranch participants' knowledge and attitudes regarding health and welfare management. Additionally, questionnaire analysis suggested that Hawaii ranchers were interested in improving management practices, especially in areas of low-stress cattle handling. Feedback from these workshops will be used to help understand the most effective ways to provide ranchers with effective training tools.