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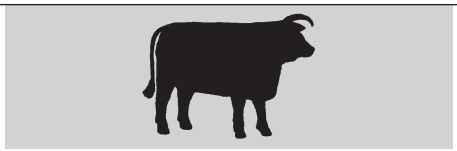

Compliance of large feedyards in the northern high plains with the Beef Quality Assurance Feedyard Assessment

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ABSTRACT

Despite increasing public scrutiny of practices used in raising animals for food, there is little readily available information about how cattle handling is managed in feedyards. The purpose of this study was to score cattle handling in commercial feedyards using the most widely adopted program for managing cattle handling, and to make these scores available as evidence of producer commitment to proper care and handling of cattle. Our objectives were to estimate compliance with the Beef Quality Assurance Feedyard Assessment (BQA FA) for cattle handling, to validate 6 cattle handling categories of the BQA FA, and to document management practices and elements of facility design. Categories scored were electric prod use; chute operation; rates of cattle vocalizing, stumbling, and falling; and rate of cattle jumping and running. This study compiles findings for cattle handling scores in commercial feedlots using the BQA FA. Of 28 sites, average scores were in compliance with BQA FA for the following 4 categories: electric prod use, vocalization, stumbling, and falling. For the following 2 categories, average scores were not in compliance: a score of 4.2% versus the target of 0% was recorded for cattle caught improperly in the squeeze chute; and a score of 52% versus the target of 25% was recorded for cattle that jumped or ran from the squeeze chute exit. All but one site exceeded this target. Curved crowd systems were recorded for 89% of feedyards, 11% used Bud Box systems, and 78.5% had rubber mats at the squeeze chute exit.

Key words: Beef Quality Assurance, cattle handling, feedyard, handling facilities, handling practices

INTRODUCTION

Numeric scoring of cattle handling is an essential component of many cattle handling and transport assessment programs used to objectively monitor quality of handling (Edge et al., 2005; Grandin, 2010; Nicholson et al., 2013). Numeric scoring of specific cattle handling categories for monitoring welfare in commercial production first gained substantial traction when guidelines were written and subsequently audited routinely in slaughter plants (Grandin, 1997, 2006; USDA-FSIS, 2009). Following the initial plant audit, much attention was focused on cattle handling categories, and by the second audit, plant compliance with the recommendation for stunning accuracy greatly increased (Grandin, 2000). Ongoing monitoring of cattle handling at packing plants has proved to be an effective approach to maintaining high standards of cattle handling (Grandin, 2005). The 5 cattle handling categories assessed at packing plants are (1) percentage of cattle moved with an electric prod, (2) percentage of cattle vocalizing, (3) percentage of cattle falling, (4) percentage of cattle successfully stunned on the first attempt, and (5) percentage of cattle that remain insensible on the rail (Grandin, 1997, 1998a). The Beef Quality Assurance Feedyard Assessment (**BQA FA**) provides guidelines for cattle handling in feedyards and is a useful tool for assessing cattle handling practices (NCBA, 2009). There are 6 category points in the BQA FA: rates of (1) driving aids/

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electric prod use, (2) squeeze chute operation/miscaught cattle, (3) cattle vocalizing, (4) cattle stumbling, (5) cattle falling, and (6) cattle jumping and running (NCBA, 2009). There is a need to validate the current categories, because numeric scoring may enable feedyard managers to measure and improve cattle handling. The objectives of this study were to (1) estimate feedyard compliance with BQA FA, (2) validate categories of the BQA FA for assessing cattle handling, and (3) document management practices and elements of facility design. Therefore, the BQA FA guidelines were used to assess cattle handling at 28 select large feedyards in Colorado, Kansas, and Nebraska. The median one-time capacity of feedyards in this study was 30,000 cattle, similar to that of a previously study (Barnhardt et al., 2014).

MATERIALS AND METHODS

All methods were approved by the Institutional Animal Care and Use Committee at Colorado State University and reviewed and exempted by the Institutional Review Board.

Description of Sample

To keep travel costs reasonable, a feedyard atlas, BeefSpotter (Spotter Publications, 2012), was used to locate areas where feedyards were clustered in the states of Colorado, Kansas, and Nebraska. Within these clusters, contact was made in alphabetic order. Fifty-six feedyards were contacted primarily by telephone, and an appointment was requested. Requests were also made in person at feedyard offices after visiting previously scheduled feedyards in the same vicinity. When a feedyard manager was contacted, the investigator explained that the purpose of the study was to survey industry adoption of Beef Quality Assurance (**BQA**) guidelines for cattle handling during administration of routine animal health and management protocols. The names and locations of all participants were kept anonymous in an effort to increase participation rates. Of the 56 feedyards that were contacted, 47 agreed to participate, 28 were included, and only 9 declined, resulting in an acceptance rate of 84% and a final participation rate of 50%. Not all feedyards that agreed to participate were included due to scheduling conflicts. All feedyards included were classified as large yards (with a one-time capacity of >1,000 cattle), and the sample included yards ranging in size from a one-time capacity of over 1,000 to over 100,000 cattle, with a mean one-time capacity of 34,583 cattle.

Terminology of the BQA FA

The authors recognize that the BQA program was modeled after the hazard analysis and critical control point approach to monitoring relatively few categories that provide information about multiple management practices, which was developed specifically for monitoring food safety concerns. When the hazard analysis and critical control point approach is used outside the original food safety context, numerical scoring may often be used in an effort to eliminate subjectivity in scoring a challenging category, such as behavior (Grandin, 1998a; Edge and Barnett, 2009). Though the entire BQA program was designed to parallel such an approach, the authors believe it is important that the language used in reference to the BQA FA not bear a food-safety connotation. To avoid any associated confusion, the authors adopted terminology designed to be descriptive and accurate. Going forward, BQA FA "category points" will be referred to as "outcome-based measures." These measures have been further divided into 2 subcategories: "handler-based measures" and "animal-based measures." The BQA FA term "acceptable level" will be referred to going forward as "target."

BQA FA

At each site, the BQA FA cattle handling observation scoresheet was used to score 100 cattle when available during scheduled visits. This approach was used because it is consistent with the guidelines for the BQA FA and how it is suggested to be using for scoring in the field. The following are the current BQA FA category points: (1) rate of electric prod use, (2) squeeze chute operation/rate of miscaught cattle (3) rate of cattle vocalizing, (4) rate of cattle stumbling when exiting the squeeze chute, (5) rate of cattle falling when exiting the squeeze chute, and (6) rate of cattle jumping or running when exiting the squeeze chute. A single observer performed all scoring to reduce variability, and in addition to scoring existing BQA FA outcome-based measures, the observer made note of all improper catches that occurred, with descriptions of the nature and location of the improper capture. Data were collected on the first 100 cattle processed when the investigator arrived at the working facilities, without bias for any specific type of cattle. The observer recorded the type of crowd or forcing pen that was used for handling cattle at each location, as well as the type of squeeze chute and exit flooring conditions. Finally, the observer noted whether feedyards used employees or contracted labor for working cattle.

Feedyard Assessment Assessor's Guidelines

According to BQA FA guidelines for handling cattle, data were collected and proportions were calculated for the following outcome-based measures, according to BQA FA protocol: (1) rate of electric prod use, (2) squeeze chute operation/ rate of miscaught cattle, (3) rate of cattle vocalizing, (4) rate of cattle stumbling when exiting the squeeze chute, (5) rate of cattle falling when exiting the squeeze chute, and (6) rate of cattle jumping or running when exiting the squeeze chute. For the measure of driving aids, information was collected about the primary type of driving aid that was used at each site, and the use of electric prod was