



The effect of growth-promoting implant status on the sale price of beef calves sold through a livestock video auction service from 2010 through 2013

G. M. Rogers,*¹ M. E. King,† K. L. Hill,‡ T. E. Wittum,§ and K. G. Odde†

*Grassy Ridge Consulting, Aledo, TX 76008; †Department of Animal Sciences and Industry, Kansas State University, Manhattan 66506; ‡Merck Animal Health, Kaysville, UT 84037; and §Department of Veterinary Preventive Medicine, College of Veterinary Medicine, The Ohio State University, Columbus 43210

ABSTRACT

Data were collected to quantify the effect of implant status on the sale price of lots of beef calves marketed through a livestock video auction service from 2010 through 2013 and to calculate the percentages of implanted lots. Information describing factors that could potentially affect the sale price of lots of beef calves was obtained electronically from the auction service for 27,746 lots (2,749,406 total calves) selling in 92 video auctions. All lot characteristics that could be accurately quantified or categorized were used to develop a separate multiple-regression model for each study year using a backward selection procedure. Implant status had no effect on sale price in any of the 4 yr of the study ($P = 0.53, 0.39, 0.64,$ and 0.12 , respectively, for 2010 to 2013). The percentage of lots that were implanted in each year was 28.4, 30.3, 30.5, and 29.0 for the years 2010 to 2013, respectively, with a mean of 29.5%. The

percentage of lots of beef calves that were implanted was relatively low in the West Coast, Rocky Mountain/North Central, and South Central regions of the United States ranging from 18.2 to 27.9%. However, 64.9% of the lots from the South East region were implanted. The results of this study indicated that implant status of beef calves marketed through a livestock video auction service had no effect on sale price. Approximately 30% of all lots were implanted in each year of the study with approximately 33 and 25% of the steer and heifer lots being implanted, respectively.

Key words: beef cattle, growth promotion, implant, nursing calf, sale price

INTRODUCTION

Research over the last 50 yr has clearly demonstrated the efficacy and cost effectiveness of growth-promoting implants in beef cattle, while failing to show safety issues in either the implanted cattle or in humans consum-

ing beef from implanted cattle (FDA, 2002; Preston, 1997, 1999; Selk, 1999). Implanting nursing beef calves has consistently improved ADG from the time of implant insertion to weaning (Selk, 1997). Most studies have demonstrated that implanting had no negative effect on future reproductive performance of heifer calves when a single implant was administered according to label instructions at 2 to 3 mo of age (Goehring et al., 1985; Bolze and Corah, 1988; Carpenter and Sprott, 1991; Whittier et al., 1991; Deutscher, 1994; Duckett and Andrae, 2001).

The percentage of cow/calf operations using growth-promoting implant technology has declined in recent years. National Animal Health Monitoring System data (2,713 cow/calf operations from 23 states) found that only 14.3% of all participating operations implanted some of their beef calves in 1996. The percentage of herds implanting some calves increased as herd size increased with a low of 8.6% for herds with less than

¹Corresponding author: beef@aledobb.com

50 cows to 55.4% for operations with greater than 300 cows (NAHMS, 1997). Results from a subsequent National Animal Health Monitoring System survey in 2007 (2,872 cow/calf operations from 24 states) showed that the percentages of operations that implanted some of their beef calves decreased to 9.8% with a range of 5.5 to 26.9% for operations with less than 50 or greater than 200 cows, respectively (NAHMS, 2008). In a more recent study, using data from more than 5 million beef calves sold through a video livestock auction service from 1995 through 2009, the percentages of lots of beef calves that were implanted decreased from 64.3% in 1995 to 26.5% in 2009 (Seeger et al., 2011).

The opportunity for nonimplanted calves to enter the “natural” market is economically important to producers if those calves receive a premium price at sale compared with implanted calves. The objectives of this study were to quantify the effect of implant status on the sale price of beef calves marketed through a livestock video

auction service from 2010 through 2013 and to calculate the percentages of lots of calves that were implanted.

MATERIALS AND METHODS

Data Collection

Information describing factors that could potentially affect the sale price of lots of beef calves that were marketed through a livestock video auction service (Superior Livestock Auction, Fort Worth, TX) was obtained from the auction service in an electronic format. These data were collected for all lots of beef calves that were offered for sale from 2010 through 2013, and data were stored in a separate computer file for each study year.

The descriptive pieces of information that were available for each lot of calves were date of the video auction, number of calves, sex of the calves (steers, heifers, or both steers and heifers), the base BW, whether the calves had been weaned before shipment from the farm or ranch of

the current owner, geographical region of the United States where the lot was located before the auction, breed description of the cattle, frame score of the calves, flesh score of the calves, the vaccination history, a subjective classification indicating the amount of BW variation within the lot, whether the calves had horns, whether the calves had been implanted with a growth-promoting compound, whether the lot qualified for a USDA-approved Age and Source Verification program, the number of days between the date of the auction and the planned date of delivery, whether the lot qualified for one or more of the video auction service's special programs: Value Added Calf, Certified Natural (CN), Non-Hormone Treated Cattle (NHTC), Superior Progressive Genetics, or Bovine Viral Diarrhea-Persistently Infected Free, and the sale price of the lot (\$/45.4 kg). The specific and current requirements of each of the video auction service's special health and management programs are available at www.SuperiorLivestock.com.

Cattle sold through the livestock video auction service were delivered directly from the farm or ranch of the current owner in semitrailer truck-sized lots (approximately 22,680 kg). Lots of beef calves that consisted of both steer and heifer calves were divided into 2 single-sex lots before analysis. This was done because these mixed-sex lots had different values for base weight, number of head, and sale price for each sex. The implant status of the mixed-sex lots were the same for both sexes in some lots but different in other lots.

Factors describing the lots of beef calves that were not numeric in the original file received from the video auction service were classified into well-defined groups, and each group within a factor was assigned a numeric code.

Statistical Analysis

The experimental unit of study in these analyses was a lot of beef calves. In each year of the study, a separate multiple-regression model was de-

Table 1. Number of lots, nonadjusted means, and ranges for continuous traits describing lots of beef calves marketed through a livestock video auction service¹ from 2010 through 2013

Trait	No. of lots	Mean \pm SD	Range
2010			
Lot size, head	7,478	97.8 \pm 66.9	4–1,000
Base weight of the lot, kg		257.1 \pm 37.0	136.1–408.2
Days from auction to delivery		72.0 \pm 44.4	0–273
Sale price, \$/45.4 kg		117.63 \pm 10.56	82.00–169.00
2011			
Lot size, head	7,008	98.9 \pm 68.9	5–1,260
Base weight of the lot, kg		253.7 \pm 37.1	99.8–408.2
Days from auction to delivery		73.0 \pm 54.0	0–293
Sale price, \$/45.4 kg		142.50 \pm 13.67	104.00–240.00
2012			
Lot size, head	6,369	100.9 \pm 75.6	5–1,450
Base weight of the lot, kg		253.9 \pm 36.9	136.1–419.6
Days from auction to delivery		63.8 \pm 50.5	0–284
Sale price, \$/45.4 kg		162.70 \pm 17.55	115.00–286.00
2013			
Lot size, head	6,891	99.0 \pm 71.3	8–1,100
Base weight of the lot, kg		256.6 \pm 38.8	136.1–412.8
Days from auction to delivery		53.3 \pm 41.9	0–204
Sale price, \$/45.4 kg		164.01 \pm 18.47	115.50–281.00

¹Superior Livestock Auction, Fort Worth, Texas.

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