

Testing and Removal of Feeder Calves Persistently Infected with Bovine Viral Diarrhea Virus at the Time of Feedlot Arrival and Outcome on Health, Performance and Carcass Characteristics

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Introduction

In a previous study we determined the effects of testing and removing cattle persistently infected (PI) with bovine viral diarrhea virus (BVDV) at revaccination. We found that there were no statistical differences for mortality, retreatment, performance or carcass characteristics. However, we did find morbidity to be statistically different between the two cohorts (19 % for non- PI exposure vs 30 % for PI exposure). In light of our previous findings, a new research trial was completed to determine the effect of testing and removing PI-BVDV cattle on arrival to the feedlot and the outcome on health, performance and carcass characteristics.

Materials and Methods

Auction derived steers (n = 1,577) arrived at a 12,000 head capacity feedlot in Kansas. Upon arrival, the cattle were administered an endectocide, a modified-live vaccine containing bovine herpesvirus type 1, parainfluenza type 3, BVDV (types 1 and 2) and bovine respiratory syncytial virus, a steroid implant and a fresh skin (ear notch) specimens were collected and placed in phosphate buffered saline solution and tested for BVDV antigen by antigen capture ELISA (ACE). If an animal tested positive for BVDV by ACE, it was removed from the home pen (range = 1 - 2 DOF). Twenty-one days after the original ACE test, the ACE positive animals were confirmed to be positive by IHC. After confirmation of BVDV PI positive status, the home pen of origin was considered to have contact on arrival to PI-BVDV. Pens with contact on arrival were compared to pens that had no contact (NC) to PI-BVDV. Animals exhibiting symptoms consistent with respiratory disease were removed for

diagnosis and treated with antimicrobials if necessary. Contact on arrival and NC pens were followed through closeout and slaughter. Pen-level response variables were generated and analyzed using regression techniques. Continuous response variables were analyzed using general linear models whereas discrete binomial response variables (events/trials) were analyzed using generalized linear models with a logit link function.

Results

Cattle in this study generally had low morbidity rates across both exposure groups (4.8 % morbidity). Cattle that had NC on arrival exhibited an overall morbidity of 7.2 % compared to that of 2.3 % for cattle with contact on arrival (P < .01). No significant differences were detected between the two cohorts for retreatment or mortality. Additionally, there were no significant differences in performance parameters (end weight, days-on-feed, average daily gain, dry matter intake, feed to gain and cost of gain). Besides an increase in yield grade 4 and 5 carcasses in the contact on arrival cohort (P < .01), there were no other statistical differences in the carcass characteristics between the two cohorts.

Significance

Although between the two studies there were no differences in mortality, retreatment, and performance with respect to the length of exposure to a PI-BVDV animal, our recent study suggests that testing and removal on arrival may be more effective than testing and removing at revaccination for reducing morbidity during the feeding period. A direct comparison between these two test and removal procedures is warranted.