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Bale Feeder Demonstration

Joe Sellers

Iowa State University, sellers@iastate.edu

Kevin Maher

Iowa State University

Dennis R. Maxwell

Iowa State University

Sam Ruble

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Bale Feeder Demonstration

Abstract

Winter stored feeding and associated waste in hay feeding is a major expense to cow calf operations. SPA summaries from Iowa and Illinois beef herds in 2000 to 2004 determined that 60% of total herd costs were associated with feed. Michigan State University research found that bale rings with solid bottoms and bale rings with cone inserts reduced waste compared with other feeders, with 6.1% and 3.5% waste, respectively. These results were found when feeding medium to high quality hays. With help from local sponsors, research and extension staff evaluated bale feeder waste with lower quality hays.

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Joe Sellers, extension beef program specialist
Kevin Maher, ag specialist
Dennis Maxwell, ag specialist
Sam Ruble, animal caretaker
McNay Research Farm

Introduction

Winter stored feeding and associated waste in hay feeding is a major expense to cow calf operations. SPA summaries from Iowa and Illinois beef herds in 2000 to 2004 determined that 60% of total herd costs were associated with feed. Michigan State University research found that bale rings with solid bottoms and bale rings with cone inserts reduced waste compared with other feeders, with 6.1% and 3.5% waste, respectively. These results were found when feeding medium to high quality hays. With help from local sponsors, research and extension staff evaluated bale feeder waste with lower quality hays.

Materials and Methods

Franklin bale feeders with cones were purchased with support from the Iowa Beef Center, the Lucas County Agricultural Extension District, and McCorkle Hardware. These feeders were compared with typical bale rings used at the McNay Farm. From January through March 2009, dry, pregnant fall calving cows were assigned either treatment (51 head, cones), or control (50 head, bale rings), stratified by body condition score. Cows were fed low quality hay for 46 days. Similar procedures were followed in 2010, with 58 cows assigned to rings and 57 assigned to cones, and fed for 54 days.

Hay quality in 2009 was low, with samples testing 8.51% CP, 51.41% TDN, 70.5% NDF, 48.1% ADF and 10.65% CP, 53.89% TDN, 67.4% NDF and 44.9% ADF with outside storage. Hay sampled in 2010 averaged 8.72%

CP, 54.37% TDN, 66.4% NDF and 44.3% ADF. Even with this low quality hay, cows with BCS of 4 and in early pregnancy would be estimated to maintain their condition under average southern Iowa winter conditions. NOTE: CP = crude protein; TDN = total digestible nutrients; NDF = neutral detergent fiber; ADF = acid detergent fiber; BCS = body condition score.

Results and Discussion

Hay disappearance from both cones and rings were similar each year:

2009 – cones – 31.7 lb hay/head per day,
rings – 33 lb/day (3.9% difference)
2010 – cones – 30.79 lb hay/head per day,
rings – 31.38 lb/day (1.9% difference)

Performance in both years with either cones or rings was disappointing, with losses in weight and BCS. In 2009 cows fed in rings lost 36.7 lb and .59 BCS. Cows fed with cones lost 25.5 lb and .52 BCS. The winter of 2010 had more extreme weather, and animal performance was reduced, with cows using rings losing 70 lb and .53 BCS. Cows fed with cones lost 101 lb and .79 BCS.

The cold and wet weather and the lack of selectivity of hay consumption resulted in performance below projections. Assuming average hay loss, cows consumed less hay than expected. Cows were exposed to severe cold and snowfall, with resulting higher maintenance requirements. Complications to feeding in rings with cones on a pasture setting included difficulty moving the heavy feeders during muddy conditions and accumulation of debris at the bottom of the cones with high fiber hays.

The staff is planning to conduct a future demonstration utilizing higher quality hay with cows in the last third of pregnancy, to determine if consumption and performance is closer to projections.