Finishing Yearling Heifers Using Self-Fed Dried Distillers Grains on Pasture

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Summary

A 2-yr study compared a traditional system of grazing yearlings followed by a grain-based drylot finishing program to a system using a self-fed dried distillers grain supplement during a spring/summer/fall pasture grazing season. The self-fed (SF) heifers had greater ADG and ending BW on pasture but the traditionally managed heifers had greater final BW and HCW. At harvest, SF heifers had greater final BW and HCW.

Introduction

Traditionally, producers select replacement heifers at weaning time. Selecting replacement heifers at weaning is based on weaning weight. Once heifers are selected as replacements, producers have management options for cull heifers. Non-selected heifers could be sold or retained on weaning weight. When data were adjusted to a common empty body fat, carcass weight and marbling score were greater for traditionally managed heifers.

allowed to graze summer pastures without supplementation followed by a feedlot finishing phase.

Procedure

The experiment was conducted at the University of Nebraska Barta Brothers Ranch located near Rose, NE. In a two year study, 96 crossbred yearling heifers were used: Control (CON) and Self-fed (SF) to compare a traditional yearling system of spring/summer grazing followed by a feedlot finishing period to a system where yearling heifer grazed spring/summer/fall pasture and were offered a high concentrate self-fed ration. In the spring each year, heifer calves were weighed, vaccinated for respiratory disease, implanted with Synovex-H (Pfizer Animal Health), and dewormed with Ivomec (Merial Animal Health). Once weighed, heifers were assigned randomly to treatments. All heifers had limited access to grass hay for three days before two day consecutive BW measurements were recorded and used to stratified heifers and randomly assigned them to treatments after the second weight was recorded (CON = 688 lb; SF = 677 lb). Control heifers (n = 24/yr) were provided a summer pasture with no supplement followed by a feedlot finishing period. Self-fed heifers (n = 24/yr) had ad libitum access to a dried distillers grains plus solubles (DDGS)-based concentrate that was offered in a self-feeder during the grazing season.

Both CON and SF heifers were placed on native upland Sandhills pastures of similar topography and forage composition. Control heifers had a stocking rate of 0.61 AUM/ac while SF heifers were stocked at 0.87 AUM/ac based on the assumption that the distiller grain supplement would replace one third of the grazed forage consumed. Each treatment grazed from mid-May to the end of their treatments respective grazing period. Forage stubble height was measured at the end of each grazing period.

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Performance

Heifer performance and days on grass or in the feedlot are presented in Table 2. The SF heifers had greater ADG while on pasture as a result of the treatment. Gain for SF heifers was 3.39 lb/d while CON heifer ADG was 1.73 lb/d during the pasture phase and 3.51 lb during the feedlot phase (2.52 lb/d; combined grazing and feedlot phases for CON heifers, Table 3). Self-fed heifers consumed on average 10.12 lb/hd/d/yr of the DDGS concentrate. There was no difference in forage appraisal between the two treatments. Self-fed heifers were harvested approximately 93 d before their CON contemporaries.

Carcass Data

Control heifers had greater F:G on grass (11.58 lb) and in the feedlot (7.25 lb) than SF heifers (6.55 lb and 6.55 lb respectively). The CON heifers produced heavier carcasses than SF heifers (788 lb vs 711 lb). A greater hot carcass weight for CON heifers resulted in final calculated live weight being greater than SF heifers (1271 lb, 1146 lb respectively; Table 3). After carcass data were adjusted to a 28% empty body fat, there were differences ($P \leq 0.01$) in USDA marbling scores, calculated yield grade, and LM area (Table 4). Control heifers had higher marbling score and had a lower calculated yield grade then SF heifers (2.85 vs 3.11 respectively). Heifers on the control treatment had larger LM area compared to SF heifers.

This experiment was conducted to determine the possibility of adding another enterprise to an existing cow/calf enterprise and establish another profit center to generate revenue. Distiller grains was selected...
as the feed used in the self-feeder because distiller grains are usually less expensive in the spring/summer compared to the fall/winter and distiller grains does not have a negative impact on forage digestibility.

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Table 4. Carcass characteristics of Control and Self-fed heifers while grazing pasture

<table>
<thead>
<tr>
<th>Item</th>
<th>Actual</th>
<th>Adjusteda</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control</td>
<td>Self-Fed</td>
</tr>
<tr>
<td>% EBFb</td>
<td>27</td>
<td>29</td>
</tr>
<tr>
<td>Marbling Scorec</td>
<td>457</td>
<td>431</td>
</tr>
<tr>
<td>YG</td>
<td>2.80</td>
<td>3.36</td>
</tr>
<tr>
<td>12th Rib Backfat, in</td>
<td>0.42</td>
<td>0.57</td>
</tr>
<tr>
<td>LM Area, in</td>
<td>13.03</td>
<td>12.21</td>
</tr>
</tbody>
</table>

aData adjusted to a 28% empty body fat (Guiroy et al. 2001; Journal of Animal Science).
bOriginal EBF %: (Control 27.26; Self-fed: 29.01).
cMarbling Score 500 = Modest (Choice), 400 = Small (Choice), 300 = Slight (Select).