Effect Of A Protein Supplement On The Performance Of Calves Grazing Bahiagrass

W. E. Kunkle and J. A. Baldwin
Department of Animal Science
Gainesville, Florida
and
County Extension Director
Bronson, Florida

Summary
A cottonseed or soybean meal supplement was fed to calves grazing bahiagrass pastures during the fall. Both the supplemented and unsupplemented groups grazed one acre of bahiagrass per calf during the 113-day trial, started August 28, 1986. The calves were thin and averaged 350 pounds when the trial started. The protein supplement was fed three days each week at a level equivalent to one pound per calf per day.

The protein supplement improved gains .33 lb/day (.74 vs .41 lb/head/day). Each pound of added gain required 3.2 pounds of protein supplement and cost $.38.

Introduction
Summer gains of stocker cattle have been improved when the calves were supplemented with protein. A summary of 10 trials conducted in Oklahoma showed that gains were increased .47 lb/head/day when the cattle were supplemented with 1 pound of 40% natural protein supplement daily. Two Florida trials showed gains were increased .33 lb/day when 1 pound of soybean meal was fed daily to calves grazing bahiagrass pasture during the summer.

The objective of this trial was to determine the effect of supplemental protein on the performance of calves grazing bahiagrass during the fall.

Conducting The Study
Thirty-nine crossbred calves were divided by gate cut into two groups containing 17 and 22 head. The calves used in the trial were selected from a group of 74 calves based on weight and age, resulting in a more uniform group of calves. The 32 steer and 7 heifer calves had been purchased from auction markets during the two months preceding the trial. Over 50% of the calves showed very little fat cover, and visual appraisal showed they averaged 40% Brahman and 60% British breeding.

The trial was initiated August 28, 1986 and ended December 19, 1986. The calves were individually weighed and condition scored on August 28, October 31 and December 19. At the start of the trial all calves were ear tagged, weighed, dehorned, implanted, dewormed and the bulls castrated.

The calves were grazed on bahiagrass pasture at a stocking rate of one calf/acre during the summer.

1 Appreciation is expressed to Frank Bullock, Williston, Florida for his cooperation in conducting this trial.
113-day trial. The groups of 17 and 22 calves were assigned to 17 and 22 acre pastures respectively. The bahiagrass pastures were fertilized with 50 lb/acre of nitrogen, two months prior to the trial, and excess forage was available during the entire trial.

Cottonseed meal or soybean meal was fed in wooden feed bunks to the group of 22 calves. Cottonseed meal was fed during the first half of the trial and soybean meal during the last half. The group was fed 50 pounds of meal on Monday, Wednesday and Friday of each week, providing a level equivalent to about 1 lb/head/day. Water and a complete mineral were provided ad libitum during the trial.

**The Outcome**

Calves grazing bahiagrass gained .58 lb/day during the 113-day trial conducted during the fall (Table 1).

The calves fed cottonseed or soybean meal gained .33 lb/day more than the unsupplemented calves (.74 vs .41 lb/day) during the 113-day trial. The supplement improved gains more during November and December (day 64 to 113) when the gains were lower. The protein supplement fed per pound of added gain was 3.2 lb. The cost of cottonseed and soybean meal was 12 cents/lb. for this trial, and the cost of added gain was 38 cents/lb of added gain.

Steers gained .64 lb/day compared to .55 lb/day for heifers during the trial. Most of the calves were thin in condition, but visual appraisal of condition indicated the calves supplemented with cottonseed meal maintained condition score, whereas the unsupplemented group lost one-third of a condition score.

**Table 1. Effect of a protein supplement on the performance of calves grazing bahiagrass**

<table>
<thead>
<tr>
<th>Item</th>
<th>None</th>
<th>Protein³</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of calves</td>
<td>17</td>
<td>22</td>
</tr>
<tr>
<td>Initial weight, lb (8-28-86)</td>
<td>364 ± 15</td>
<td>353 ± 14</td>
</tr>
<tr>
<td>Final weight, lb (12-19-86)</td>
<td>409 ± 18</td>
<td>437 ± 15</td>
</tr>
<tr>
<td>Avg. daily gain, lb 0-64 days</td>
<td>0.60 ± 0.12</td>
<td>0.82 ± 0.10</td>
</tr>
<tr>
<td>64-113 days</td>
<td>0.16 ± 0.15</td>
<td>0.64 ± 0.13</td>
</tr>
<tr>
<td>0-113 days</td>
<td>0.41 ± 0.08</td>
<td>0.74 ± 0.07</td>
</tr>
</tbody>
</table>

1 Bullock Farms, Williston, Florida
2 Calves grazing bahiagrass (1 calf/acre) during September, October and November
3 Cottonseed or soybean meal fed at rate equivalent to 1 lb/head/day on Monday, Wednesday and Friday

96