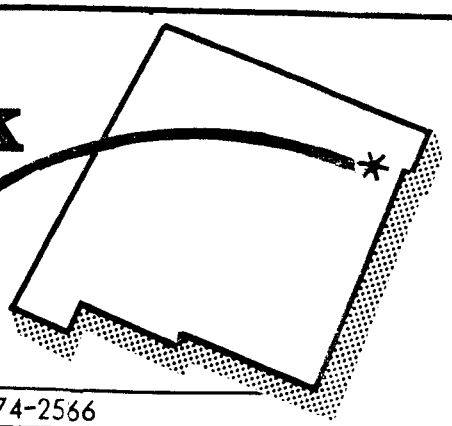
Agricultural Experiment Station U.S. Department of Agriculture

Clayton Livestock Research Center



PROGRESS REPORT

Route 1 Box 109 Clayton, New Mexico 88415 Tel. (505) 374-2566

Progress Report No. 57 (January, 1989)

CONTINUED STUDIES ON WHOLE SHELLED CORN IN RECEIVING RATIONS FOR STRESSED CALVES

Glen Lofgreen, Mark Branine, Danny Garcia and Mike Hubbert

In an earlier study at this center it was found that whole shelled corn could be used as an ingredient in receiving feeds for newly arrived calves when fed with a protein supplement and native grass hay (Progress Report No. 52, 1988). This type of receiving feed can be easily handled by the stocker operator who does not have facilities for milling and mixing a more complex receiving feed. Whole shelled corn can be placed in the feed bunk and the protein supplement top dressed on the corn, while the hay can occupy another portion of the feed bunk or some type of hay feeder. The purpose of the trials described in this report was to determine if the protein supplement and grass hay could be replaced

Item	75% conc. plus grass hay first week only	Whole corn plus grass hay	Whole corn plus protein supplement and grass hay	Whole corn plus alfalfa hay
Number of calves	58	55	62	58
Purchase weight, lb	364	355	361	357
Daily feed intake, lb:				
Native grass hay	.8	3.3	2.9	0
Alfalfa hay	0	0	0	4.5
Whole shelled corn	0	4.0	4.1	4.8
20% protein supplement	0	0	1.4	0
75% concentrate milled feed	7.7	0	0	0
Total	8.5[b]	7.3[a]	8.4[b]	9.3[c]
Daily wt/gain from purchase, lb	1.34[b]	.05[a]	.97[b]	1.27[b]
Feed per lb gain, lb	6.34[a]	146.00[b]	8.66[a]	7.32[a]
Cost per lb gain, ¢	59.17	1335.71	79.42	58.75
Health:				
No. of calves treated for BRD[1]	23	24	30	26
Treatment days per sick calf	3.5	4.1	3.7	3.0
Deads	1	3	1	0
Costs for 28-day receiving period:				
Feed, $ per head	12.44	8.15	10.93	10.88
Medication, $ per head	1.69	2.48	2.57	1.94
Death loss, $ per head[2]	8.07	8.07	8.07	8.07
Total	22.20	18.70	21.57	20.89
Purchase price, $ p/head ($1.025/lb)	373.10	363.88	370.03	365.93
Cost after 28-d receiving period	395.30	382.58	391.60	386.82
28-d weight, lb	402	356	388	393
Cost after 28 days, $ per cwt	98.33	107.47	100.93	98.43

[1] BRD = Bovine Respiratory Disease Complex

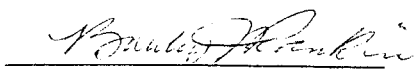
[2] Average purchase weight x price per pound x no. of deads ÷ no of surviving calves

by alfalfa hay thus making it necessary to supply only two feeds to newly received cattle--whole shelled corn and alfalfa hay.

Two loads (233 head) of medium and large frame, Nos. 1 and 2 male stocker calves were obtained from order buyers in Arkansas and Florida and trucked to Clayton, New Mexico. Average purchase weight was 369 lb. Calves were allowed free access to native grass hay and water over night and were processed the following morning. Immediately following processing the calves were placed on the following receiving rations predetermined at random: (1) standard receiving ration used at this center consisting of a 75% concentrate milled feed (15% crude protein) fed free choice for four weeks with native grass hay supplied free choice for the first week only; (2) whole shelled corn plus native grass hay, both fed free choice for four weeks; (3) whole shelled corn and a pelleted 20% crude protein supplement fed in the proportion of three parts corn to one part supplement. This combination and native grass hay were provided free choice for four weeks; (4) whole shelled corn and alfalfa hay, both being fed free choice for four weeks. A medium quality alfalfa hay was used since studies at this center and in California have shown that highly palatable, leafy, fine stemmed alfalfa fed to newly received cattle often increases morbidity and mortality due primarily to bloat. Each morning all calves were carefully inspected for signs of morbidity. Those diagnosed as morbid were brought to the handling area and treated. Weights were recorded every seven days.

Results are summarized in the accompanying table. As shown in an earlier study, whole shelled corn and grass hay do not supply sufficient nutritive value to promote optimal gains. The specific nutrients which are supplied in inadequate amounts by this combination are protein and calcium. The addition of a 20% crude protein supplement apparently supplied the needed nutrients. The supplement was designed to increased calcium intake as well as protein.

Supplying whole shelled corn and alfalfa hay also appeared to meet the nutritional needs of the calves. This combination produced gains equal to those achieved on a 75% concentrate milled feed and grass hay limited to the first week. The combination of whole shelled corn and a medium quality alfalfa hay fed free choice is easy to handle and meets the needs of those who do not have access to facilities to mix multi-ingredient rations.



Bobby J. Rankin, Head, Department of Animal and Range Sciences

Agricultural Experiment Station
NEW MEXICO STATE UNIVERSITY
Las Cruces, New Mexico 88003-0058
David W. Smith, Director
Publication

Penalty for Private Use, $300

BULK RATE
POSTAGE & FEES PAID
USDA
PERMIT No. G269