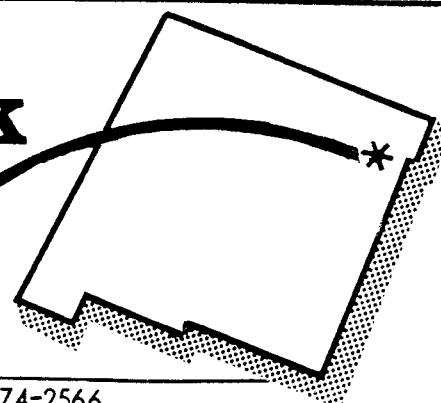




# Clayton Livestock Research Center

## PROGRESS REPORT



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### EFFECTS OF A LIQUID FEED SUPPLEMENT ON PERFORMANCE OF CALVES DURING A 28-DAY FEEDLOT RECEIVING PERIOD

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Management of newly-received stressed calves presents several challenges to the stocker or feedlot cattle operator. Previous research from this station has demonstrated the importance of optimizing energy intake for stressed calves for improvement of subsequent performance. The provision of a palatable, high-energy liquid feed supplement (LFS) may be an alternative method of improving energy intake during the receiving period.

On April 30, 1987, 130 male calves (avg wt 360 lbs) were shipped from Missouri to the Clayton Livestock Research Center (CLRC). Calves were processed according to standard CLRC procedures the day of arrival after the calves were allowed to consume grass hay and water. During processing, calves were randomly allotted into four treatments with each treatment replicated into three pens. Treatments were a basal diet consisting of a 50% concentrate milled feed (50M-1); LFS provided top-dressed into the basal diet and free choice from a lick tank (50M-2); the basal diet containing LFS top-dressed only (50M-3); and the basal diet with free choice LFS from a lick tank only (50M-4). In treatments 50M-2 and 50M-3, LFS was top-dressed at a rate of .10 lb LFS/100 lb body wt as determined by the mean body weight from calves in each pen. Grass hay was also provided free choice to all calves for seven days after arrival in the feedlot. Composition of the basal diet is shown in Table 1. The LFS was a

commercially available molasses and ethanol-based supplement, which also provided various vitamins and trace minerals.

TABLE 1. Composition of Basal (50M) Diet

Steam-flaked milo	25.2
Hominy feed	7.0
Soybean meal	5.3
Cottonseed hulls	7.0
Fat	3.0
Molasses	7.0
Alfalfa	43.0
Dicalcium phosphate	0.5
Salt	0.5
Ammonium sulfate	0.5
Premix (hominy-based containing trace minerals, bactitracin and vitamin A)	1.0

Performance data and cost of gain for each treatment are shown in Table 2. There were no overall differences ( $P < .10$ ) among treatments for weight gains, feed intake, or feed efficiency during the 28-day receiving period. Average daily gain and feed efficiency were numerically greater in the 50M-1 group compared to groups receiving LFS. Calves in the 50M-3 group had a lower mean intake of basal diet compared to other groups, indicating top dressing LFS alone at the rate provided in this study was not effective in stimulating intake of the basal

Table 2. Effect of LFS on Performance and Cost of Gain for Calves during a 28-Day Receiving Period

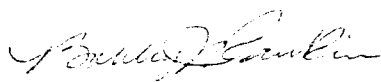
Item	Treatment				SE <sup>a</sup>
	50M-1	50M-2	50M-3	50M-4	
Initial wt, lb	368	352	360	358	
Final wt, lb	473	451	456	462	
ADG, lb/d	3.72	3.55	3.41	3.66	.23
Intake, lb/d <sup>b</sup>					
Basal	14.2	13.6	13.0	13.6	
LFS	--	.9	.4	.7	.12
Total	14.2	14.5	13.4	14.4	.78
Feed-to-gain, lb	3.8	4.1	4.0	3.9	.13
Cost of gain					
\$/100 lb gain	18.71	21.64	20.16	20.56	

<sup>a</sup> Standard error of mean, n = 3

<sup>b</sup> As-fed basis

diet. Calves in groups 50M-2 and 50M-4 had a lower intake of basal diet compared to 50M-1. However, total intake was similar indicating calves may have been substituting LFS for basal diet. Cost of gain was increased by 2.93, 1.45, and 1.85 \$/per 100 lb gain for the 50M-2, 50M-3, and 50M-4 groups respectively compared to the 50M-1 group. The results of this study suggested nutrient intake from the basal diet alone (50M-1) was adequate to meet the

animals' requirements without the supplemental nutrients provided by the LFS. Likewise, since there was no improvement in performance attributable to LFS, the additional cost of providing LFS during a 28-day receiving program similar to that used in this study would not appear to be economically justified. Whether a beneficial response to the LFS would be observed with other types of receiving programs requires additional research.



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