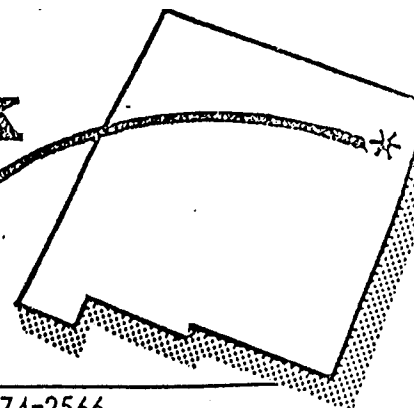




# Clayton Livestock Research Center

## PROGRESS REPORT



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### ENERGY VALUE OF COTTON GIN TRASH (GROUND COTTON BURRS) FOR FINISHING CATTLE

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Cotton gin trash (cotton burrs, cotton gin by-product) is seasonably available in many cattle feeding areas and usually is cheaper than cottonseed hulls. Since little information is available on its energy value for cattle feeding a trial was conducted at this Center to estimate its net energy value for maintenance ( $NE_m$ ) and weight gain ( $NE_g$ ).

Two hundred and thirty five medium and large frame, nos. 1 and 2 heifers of mixed beef breeding weighing 450 lb. were assigned to 12 pens of from 18 to 20 head per pen. Four pens were fed a finishing ration having the composition shown in table 1. Additionally four pens were fed the same ration shown in table 1 except 10% flaked corn was replaced by 10% ground gin trash and the final four pens were fed a ration in which 20% ground gin trash replaced 20% flaked corn. The results are presented in table 2.

As gin trash replaced flaked corn feed intake increased. This is expected because cattle attempt to compensate for energy dilution by increasing the intake of the lower energy feed. In this case the increased intake was linear with increasing level of gin trash. The 10% and 20% levels of gin trash brought about increased feed intakes of 12% and 24% compared to the control ration. The increased feed intake more than compensated for the energy dilution since cattle receiving gin trash gained more than the controls. As expected, however, the rations containing

Table 1. Composition of basal ration

Ingredient	Amount %
Steam flaked corn	65.1
Alfalfa hay	15.0
Hominy feed	5.0
Fat	3.0
Molasses	7.0
Urea	.85
Limestone	.6
Dicalcium phosphate	.65
Trace mineralized salt	.5
Ammonium chloride	.3
Cottonseed meal premix <sup>1</sup>	1.0
Total	100.0

<sup>1</sup> Supplied 2,000,000 units of vitamin A, 30 rumensin and 10g tyran per ton of finished feed, as fed.

gin trash were utilized much less efficiently than the control ration because of the lower energy of gin trash.

One of the interesting findings was that gin trash additions did not reduce yield. Normally the increased feed intake caused by an energy dilution results in a greater fill and a lower yield. Apparently in this case the rate of passage of feed through the digestive tract was more rapid on the ration containing gin trash so that the increased feed intake did not result in greater fill.

Item	Level of gin trash, %		
	0	10	20
<b>Performance:</b>			
Number of heifers	78	79	78
Initial weight, lb	453	450	457
Days fed	150	152	153
Daily feed intake, lb	15.71 <sup>a</sup>	17.56 <sup>b</sup>	19.49 <sup>c</sup>
Daily weight gain, lb	2.65 <sup>a</sup>	2.74 <sup>b</sup>	2.77 <sup>b</sup>
Feed per pound gain, lb	5.93 <sup>a</sup>	6.41 <sup>b</sup>	7.04 <sup>c</sup>
Cost per pound gain, ¢ <sup>2</sup>	39.51	40.07	41.12
<b>Carcass data:</b>			
Carcass weight, lb	542	554	568
Dressing percent	63.7	64.0	64.5
Quality grade score <sup>3</sup>	10.8	11.1	11.3
Fill, lb per head	46	45	41
<b>Net energy of gin trash, Mcal per 100 lb:<sup>4</sup></b>			
NE <sub>m</sub>	-	49.4	48.8
NE <sub>g</sub>	-	14.4	13.2

<sup>1</sup> Values on the same line which have different superscript letters are significantly different (P<.05).

<sup>2</sup> Cost includes ingredient cost plus \$15 per ton of finished feed.

<sup>3</sup> Quality grade key: 10 = Good, 11 = Top Good, 12 = Low Choice.

<sup>4</sup> Calculated by corn replacement method using 92 and 60 Mcal per 100 lb as the NE<sub>m</sub> and NE<sub>g</sub> values of flaked corn, as fed.

Using a corn replacement method the NE<sub>m</sub> and NE<sub>g</sub> values of gin trash were estimated. The average NE<sub>g</sub> was approximately 14 Mcal. per 100 lb. of gin trash. With corn at 60 Mcal. per lb., gin trash is worth 23% of the value of flaked corn. If flaked corn costs \$110

per ton, as it did in this trial, gin trash would be worth \$25 per ton. The delivered price at the time of this trial was \$27 just above its value. One should use his own costs to determine what he could afford for gin trash at 23% the value of corn.

Armed Forces Research Center improvements planned this fall will include completion of livestock watering system in the irrigated pastures. The 120 acres will be divided into eight 15-acre pastures.

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