
CANE BRAKE

Agricultural Experiment Station,

UNIONTOWN, ALABAMA.

BULLETIN NO. 8. - - - APRIL, 1890.

— SUBJECTS —

CATTLE FEEDING,

PIG FEEDING.

THE BROWN PRINTING CO., PUBLIC PRINTERS AND BOOK BINDERS.

CANEBRAKE AGRICULTURAL EXPERIMENT STATION,

UNIONTOWN, ALABAMA.

BULLETIN NO. 8.....APRIL, 1890.

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CATTLE FEEDING.

[W. H. NEWMAN, Asst. Director.]

This experiment was undertaken to compare the feeding value of some of the products of canebrake soils.

The last of Oct., 1889, four steers were purchased as follows:

Nos. 1 & 2—old work oxen that had run on pasture during the summer. They were from ten to twelve years old. No. 3 was between three and four years old—had run in a fine pasture during summer.

No. 4.—A grade short horn eight years old—a turned-off work steer.

All of the animals were fairly good beef when put up.

The feeding occupied five periods of twenty one days each exclusive of the preparation period.

During the first period steer No. 3 refused the corn meal but gained fifty pounds on pea vine hay. This hay seemed to be relished more than any other “roughness” except cotton seed hulls.

FIRST PERIOD.

November 4th to Nov. 25th, 1889.

Steer
No.

FOOD CONSUMED.

| | | |
|----|---|------------|
| 1. | 539 lbs. Pea vine hay.....average fed per day..... | 25.66 lbs. |
| | 169 lbs. Green cotton seed.....average fed per day..... | 8.08 lbs. |
| 2. | 631 lbs. Pea vine hay.....average fed per day..... | 30.04 lbs. |
| | 92½ lbs. Cotton seed meal.....average fed per day..... | 4.40 lbs. |
| 3. | 453 lbs. Pea vine hay.....average fed per day..... | 21.57 lbs. |
| | 3½ lbs. Corn meal.....average fed per day..... | |
| 4. | 668 lbs. Cotton seed hulls.....average fed per day..... | 31.80 lbs. |
| | 115 lbs. Cotton seed meal.....average fed per day..... | 5.47 lbs. |

RESULTS.

| No. of Steer. | | Weight at beginning. | Weight at end. | Gain. | Cost of food. | Cost per pound of gross increase. | Gain per day in pounds. |
|---------------|-------|----------------------|----------------|-------|---------------|-----------------------------------|-------------------------|
| 1 | ..... | 1316 | 1394 | 78 | \$3 49 | 4.47 ct | 3.70 lbs. |
|  | ..... | 1326 | 1414 | 88 | 4 08 | 4.63 ct | 4.19 lbs. |
| 2 | ..... | 900 | 950 | 50 | 2 28 | 4.56 ct | 2.38 “ |
|  | ..... | 1350 | 1470 | 120 | 2 82 | 2.35 ct | 5.71 “ |

SECOND PERIOD.

November 25th to December 16th.

| Steer No. | FOOD CONSUMED. | |
|-----------|----------------------------|--------------------------------------|
| 1 | 184½ lbs mixed hay | average fed per day 8.79 lbs. |
| | 107½ lbs green cotton seed | average fed per day 5.10 lbs. |
| 2 | 192 lbs mixed hay | average fed per day 9.14 lbs. |
| | 120 cotton seed meal | average fed per day 5.71 lbs. |
| 3 | 526½ lbs pea vine hay | average fed per day 25.07 lbs. |
| | 18½ lbs corn meal | average fed per day ..... .88 lbs. |
| 4 | 823 lbs cotton seed hulls | average fed per day 39.19 lbs. |
| | 180½ lbs cotton seed meal | average fed per day 8.59 lbs. |

RESULTS.

| Steer No. | Weight at beginning. | Weight at end. | Gain. | Cost of food. | Cost per pound of gross increase. | Gain per day in pounds. |
|-----------|----------------------|----------------|-------|---------------|-----------------------------------|-------------------------|
| 1 | 1394 | 1310 | 84 | \$1 42 | ..... | ..... |
| 2 | 1414 | 1350 | 64 | 2 16 | ..... | ..... |
| 3 | 950 | 1004 | 54 | 2 77 | 5.12 ct | 2.57 |
| 4 | 1470 | 1500 | 30 | 3 85 | 12.83 ct | 1.42 |

THIRD PERIOD.

December 16th to January 6th.

| Steer No. | FOOD CONSUMED. | |
|-----------|----------------------------|--------------------------------------|
| 1 | 373 lbs mixed hay | average fed per day 17.76 lbs. |
| | 116½ lbs Green cotton seed | average fed per day 5.53 lbs. |
| 2 | 484½ lbs mixed hay | average fed per day 23.07 lbs. |
| | 125 lbs cotton seed meal | average fed per day 5.95 lbs. |
| 3 | 457½ lbs pea vine hay | average fed per day 21.79 lbs. |
| | 122½ lbs corn on cob | average fed per day 5.84 lbs. |
| 4 | 741½ lbs cotton seed hulls | average fed per day 35.32 lbs. |
| | 168 lbs cotton seed meal | average fed per day 8 lbs. |

RESULTS.

| No. of Steer. | Weight at beginning. | Weight at end. | Gain. | Cost of food. | Cost per pound of gross increase. | Gain per day in pounds. |
|---------------|----------------------|----------------|-------|---------------|-----------------------------------|-------------------------|
| 1 | 1310 | 1376 | 66 | \$2 40 | 3 63 cts. | 3 14 |
| 2 | 1350 | 1420 | 70 | 3 67 | 5.24 cts. | 3 33 |
| 3 | 1004 | 1054 | 50 | 2 83 | 5.66 cts. | 2 38 |
| 4 | 1500 | 1534 | 34 | 3 53 | 10.38 cts. | 1 61 |

FOURTH PERIOD.

January 6th to January 27th.

| Steer No. | FOOD CONSUMED. | |
|-----------|------------------------------|--------------------------------------|
| 1 | 335½ lbs cotton seed hulls | average fed per day 15.97 lbs. |
| | 182½ lbs green cotton seed | average fed per day 8.69 lbs. |
| 2 | 671½ lbs hulls and mixed hay | average fed per day 31.97 lbs. |
| | 52½ lbs cotton seed meal | average fed per day 2.50 lbs. |
| 3 | 466½ lbs pea vine hay | average fed per day 22.22 lbs. |
| | 81½ lbs corn meal | average fed per day 3.89 lbs. |
| 4 | 736½ lbs cotton seed hulls | average fed per day 35.07 lbs. |
| | 168 lbs cotton seed meal | average fed per day 8 lbs. |

RESULTS.

| No. of Steer | Weight at beginning. | Weight at end. | Gain. | Cost of food. | Cost per pound of gross increase. | Gain per day in pounds. |
|--------------|----------------------|----------------|-------|---------------|-----------------------------------|-------------------------|
| 1 | 1376 | 1392 | 16 | \$2 53 | 15.81 cts | .76 |
| 2 | 1420 | 1480 | 60 | 3 02 | 5.03 cts | 2.85 |
| 3 | 1054 | 1090 | 36 | 2 98 | 8.27 cts | 1.71 |
| 4 | 1534 | 1594 | 56 | 3 52 | 6.28 cts | 2.66 |

FIFTH PERIOD.

January 27th to February 17th.

| Steer No. | FOOD CONSUMED. | |
|-----------|---------------------------|-------------------------------------|
| 1 | 735 lbs rye hay and hulls | average fed per day 35 lbs |
| | 178 lbs green cotton seed | average fed per day 8.47 lbs |
| 2 | 639½ lbs hulls | average fed per day 30.45 lbs |
| | C. S. meal refused | average fed per day |
| 3 | 348 lbs mixed hay | average fed per day 16 57 lbs |
| | 126 lbs corn meal | average fed per day 6 lbs |
| 4 | 747½ lbs hulls | average fed per day 35.59 lbs |
| | 168 lbs cotton seed meal | average fed per day 8 lbs |

RESULTS.

| Steer. | Weight at beginning. | Weight at end. | Gain. | Cost of food. | Cost per lb. of gross increase. | Gain per day in pounds. |
|--------|----------------------|----------------|-------|---------------|---------------------------------|-------------------------|
| 1 | 1392 | 1340 | 52 | \$3 19 | ..... | ..... |
| 2 | 1480 | 1518 | 38 | 1 59 | 4.18 cts | 1 80 |
| 3 | 1090 | 1080 | 10 | 2 74 | ..... | ..... |
| 4 | 1590 | 1620 | 30 | 3 54 | 11.8 cts | 1.42 |

SUMMARY OF PERIODS.

| Steer. | FOOD CONSUMED. | Weight at beginning | Weight at end. | Gain. | Cost of food. | Gain per day |
|--------|---|---------------------|----------------|-------|---------------|--------------|
| 1 | 2167½ pounds mixed hay 753 pounds cotton seed | 1316 | 1340 | 24 | \$ 13 03 | .22 |
| 2 | 2618½ pounds mixed hay and hulls 390 pounds C. S. Meal | 1326 | 1518 | 192 | 14 52 | 1.82 |
| 3 | 1904 pounds pea vines, 348 pounds mixed hay 342½ pounds corn and meal | 900 | 1080 | 180 | 13 60 | 1.71 |
| 4 | 3716½ pounds cotton seed hulls 799½ pounds C. S. Meal | 1350 | 1620 | 270 | 17 26 | 2.57 |

There are some remarkable features in the results of this feeding experiment.

The four bullocks consumed in one hundred and five days 14,354½ lbs. of hay and cotton seed hulls and 2,285 lbs. of cotton seed, cotton seed meal and corn and corn meal, or a total of 16,639½ lbs. of food. This enormous quantity of food produced only 666 lbs. of gross increase at an aggregate cost of only \$58.41. It required twenty five lbs. of the mixed food to produce one pound of gross increase, and this cost 8.8 cents per lb.

At 3¼ cents per lb., the increase was worth \$24.97; the total cost of the food was \$58.41. This leaves a balance of \$33.43 for which the manure is the only asset.

The changes rendered necessary in the rations of some of the steers on account of refusal to eat portions of them caused some unprofitable consumption.

The results indicate that stall-feeding at present price of beef-cattle is not profitable.

PIG FEEDING.

In order to compare the nutritive effects of whole corn and corn meal four pigs, all of the same litter—thoroughbred essex—were selected and a pair put in each of two pens. One pair was fed what whole corn they would eat and the other fed a full ration of meal.

The feeding was divided into two periods with an intermission of fourteen days between, during which all were fed alike upon corn in an open lot.

It will be seen by examining the accompanying statement of results, that the pair fed upon meal gained 58½ lbs. more than those fed upon whole corn. When butchered, the meat of those fed upon meal was whiter and firmer than that of the corn fed pigs. The difference in favor of feeding meal is sufficient to more than pay for the trouble of grinding the corn.

FIRST PERIOD.

November 12th to December 9th.

Preparation period 7 days—Feeding continued 21 days.

| Pig. | ROTATION. | Weight at beginning. | Weight at end. | Gain. | Amount eaten in pounds. | Ration per day Lbs. | Lbs. of food to make one of flesh. | Cost of food. | Cost to make one lb. of meat. |
|------------|-----------------|----------------------|----------------|------------------|-------------------------|---------------------|------------------------------------|--------------------|-------------------------------|
| 1 } 2 } | Corn meal..... | 85.50 | 116.25 | 30 $\frac{3}{4}$ | 181 $\frac{1}{2}$ | 8.64 | 3.30 | \$1.45 | 2.64 cts. |
| | | 71. | 95.25 | 24 $\frac{1}{2}$ | | | | | |
| | | | | 55 $\frac{1}{4}$ | | | | | |
| 1 } 2 } | Whole corn..... | 83. | 98.75 | 15 $\frac{3}{4}$ | 154 $\frac{1}{2}$ | 7.35 | 5.36 | 0.96 $\frac{1}{2}$ | 3.46 cts. |
| | | 76.50 | 88.50 | 12 | | | | | |
| | | | | 27 $\frac{3}{4}$ | | | | | |

A preparation period of seven days preceded the commencement of the experiment. Pigs were nine months old at the beginning of the feeding—were in good store condition—gleaned the mule lot with very little additional food until put up for this experiment.

SECOND PERIOD.

December 31st to January 20th.

| Pig. | ROTATION. | Weight at beginning. | Weight at end. | Gain. | Amount eaten. Lbs. | Ration per day Lbs. | Lbs. of food to make one of flesh. | Cost of food. | Cost to make one lb. of meat. |
|------------|-----------------|----------------------|----------------|------------------|--------------------|---------------------|------------------------------------|--------------------|-------------------------------|
| 1 } 2 } | Corn meal..... | 134.75 | 177.50 | 42 $\frac{3}{4}$ | 216 | 10.28 | 3.23 | \$1.72 | 2.58 cts. |
| | | 210. | 134. | 24 | | | | | |
| | | | | 66 $\frac{3}{4}$ | | | | | |
| 1 } 2 } | Whole corn..... | 114.50 | 135.50 | 21 | 137 $\frac{1}{2}$ | 6.54 | 3.84 | 0.85 $\frac{3}{4}$ | 2.39 cts. |
| | | 93.75 | 108.50 | 14 $\frac{3}{4}$ | | | | | |
| | | | | 35 $\frac{3}{4}$ | | | | | |

All ran together in a lot for fourteen days between the periods, and were fed together on whole corn. Preparation period of seven days before commencing the second period.

ERRATA.

In Bulletin No. 7, page 7, the whole paragraph at bottom of page commencing, "The increased cotton, &c.," should be omitted.