

ANIMAL HUSBANDRY

Feeding and breeding studies with beef cattle, dairy cattle, and swine have been in progress at this Station for ten years. During the past two years investigations have been initiated in regard to swine parasites. Problems related to range grazing and timber production are also being studied.

The livestock work covered by this annual report is in the nature of a progress report and should be considered as such. It is desirable to have at least three years' results on all feeding work before definite recommendations can be made, and a much longer period is required for gaining accurate information in breeding studies.

The Bureau of Animal Industry, United States Department of Agriculture, is cooperating in the beef cattle and swine work carried on at this Station.

BEEF CATTLE INVESTIGATIONS

The Station maintains three herds of beef cattle. Breeding and feeding studies are in progress with a purebred Polled Hereford herd. The fact that this Station is carrying on breeding and feeding studies with Polled Herefords does not mean that the Station officials are placing their stamp of approval on this breed in preference to other beef breeds. A grade herd of Hereford cattle has been bred up from native cattle over a period of 20 years and provides a good example of what can be accomplished by using good beef bulls on native cattle. Offspring from this herd is being used in pasture and feeding tests. The herd is also being used for the purpose of proving purebred Polled Hereford bulls produced in the purebred herd. A herd of native and first-cross cows is maintained to make various studies relative to fat calf production. The work with this herd is an outstanding example of what can be accomplished by using good purebred sires on grade and native cattle.

Management of Breeding Herds

The three herds of beef cattle maintained by the Station are carried on permanent pastures from approximately April 1 to November 10. The herds are wintered on various combinations of feeds. For breeding studies the herds are usually divided into groups of about 20 cows each and are pasture-bred during a 60- to 90-day period. This breeding period usually runs from approximately April 20 to July 1. The cows are bred so that they will drop calves from late January to early April.

During the summer period the cows are not fed any supplemental feed other than a mineral mixture. The mineral mixture is composed of equal parts of salt, steamed bone meal, and ground limestone. The calves in some of the groups are creep-fed. These tests are discussed under following sub-heads. When calves are creep-fed, the creep or pen should be placed in the part of the pasture that the cows frequent most often. The opening for the calves to pass into the creep should be just wide enough for the calves to pass through but too narrow for the cows. The calves are usually weaned in late September or early October, approximately a month before the cows are removed from permanent pasture. The carrying capacity of the various permanent pastures on which the breeding herds are carried varies from one to

three acres per cow. The carrying capacity of the pastures depends upon the pasture mixture, fertilization, and natural fertility of the soil.

The different methods of wintering the cows are discussed under following subheads. The results of creep-feeding calves during the summer are also discussed.

Calf Production

Various methods of calf production have been studied at this Station since 1935. The native herd (grade Jersey and native cattle and a few first-cross heifers) has been used to study veal calf production and fat calf production. For four years, calves produced in this herd were sold as veal calves when they reached an approximate average weight of 250 pounds. Since 1939 the calves produced in this herd were carried until they reached an average age of eight months and were sold as fat calves.

The calves produced in the grade Hereford herd are not creep-fed. They are used in either bull proving studies or in the various pasture tests. The heifer calves when they reach breeding age (2 years old) are placed back into the breeding herd.

The calves produced in the purebred Polled Hereford herd are creep-fed. The bull calves to be used as breeding animals at the Station are selected when the calves are a year old. The remaining bull calves are sold to Georgia farmers. The females are added to the purebred herd when they reach breeding age.

Creep Feeding vs. Non-Creep Feeding First- and Second-Cross Calves: The calves used in this feeding test were first- and second-cross calves. They were dropped in February and March 1942 by the cows in the native herd. The first-cross cows in this herd are first-cross Hereford or Milking Shorthorn. The calves were sired by good purebred Polled Hereford bulls. The cows and their calves were placed on permanent pasture April 3, 1942. The creep or pen in which the calves were fed was placed near the center of the pasture where the cows had a tendency to lie around during the middle of the day.

When the creep-feeding period started April 30 the cows and their calves were divided into two comparable groups. One group of calves was creep-fed a grain ration composed of six parts, by weight, of ground snapped corn and one part peanut meal (45%). Approximately three weeks were required to get the calves to eating the grain mixture in any appreciable quantities. The check group of calves was not creep-fed. The cows were not fed any dry feed. A mineral mixture was kept before the cows and their calves. The 144-day creep-feeding period ended September 21, 1942.

Table 29 shows that the creep-fed calves had an average daily feed consumption of 4.06 pounds. They made an average daily gain of 1.91 pounds as compared to an average daily gain of 1.56 pounds for the non-creep-fed group. The creep-fed calves weighed, on the average, at the end of the test 482.9 pounds as compared with 404.3 pounds for the check group. The creep-

fed calves sold for \$12.75 per 100 pounds while the check group sold for \$10.75. The difference in pounds of gain per calf due to creep-feeding was 76.55. The increase value per calf due to creep-feeding was \$17.27. The total feed consumed per calf was 585 pounds, which had a market value of \$6.69, leaving a net value due to creep-feeding of \$10.58.

TABLE 29.
CREEP-FEEDING VS. NON-CREEP-FEEDING FIRST- AND SECOND-CROSS CALVES
Spring and Summer 1942

	<i>Calves Creep-Fed</i>	<i>Calves Not Creep-Fed</i>
Total number calves -----	17	15
Date dropped -----	Feb. 2 to March 18	Jan. 26 to April 13
Date off test -----	Sept. 21	Sept. 21
Date creep-feeding started -----	April 30	--
Number of days creep-fed -----	144	--
Average birth weight (pounds) -----	70.53	68.47
Average weight at end of period (pounds) -----	482.94	404.33
Average gain per calf (pounds) -----	412.41	335.86
Average daily gain per calf (pounds) -----	1.91	1.56
Average daily feed consumption (pounds) -----	4.06	--
Ground snapped corn (pounds) -----	3.48	--
Peanut meal (pounds) -----	.58	--
Feed consumed per calf (pounds) -----	585.00	--
Ground snapped corn (pounds) -----	501.00	--
Peanut meal (pounds) -----	84.00	--
Feed consumed per 100 pounds of gain (pounds) -----	141.77	--
Ground snapped corn (pounds) -----	121.52	--
Peanut meal (pounds) -----	20.25	--
Selling price per 100 pounds (dollars) -----	12.75	10.75
Average slaughter weight (pounds) -----	468.24	394.67
Average value per calf (dollars) -----	59.70	42.43
Total value of calves at end of period:		
7,960 pounds @ \$12.75 per 100 pounds -----	\$1,014.90	--
5,920 pounds @ \$10.75 per 100 pounds -----	--	\$636.40
Difference in pounds of gain due to creep-feeding -----	76.55	--
Increased value per calf due to creep feeding (dollars) -----	17.27	--
Cost of feed consumed per calf* (dollars) -----	6.69	--
Net value per calf due to creep feeding (dollars) -----	10.58	--

*Feed valued at: Corn 1c per pound; peanut meal 2c per pound.

