

The chief of the foods grown were clover, winter rye, corn and rape grown together, sorghum and dwarf Essex rape. The sheep were pastured on these in turn. The winter rye furnished an excellent bite for fall and spring. Next came a plat of peas, oats and rape sown together. This plat was eaten down three times. After these came corn and rape. The corn and rape furnished an excellent food. The sheep were put on to it when it was about a foot high. The weak point of this pasture was that it did not come again. After the corn and rape, sorghum followed. And rape followed sorghum. Thus the sheep had abundant supplies of food during all the season. When the forage was wet from rain the sheep were pastured on the grass. Movable fences were used.

This system of growing forage for sheep will some day be adopted in all arable sections of the United States, that is to say, it will be adopted in a modified form. Farmers who keep sheep will sow one more kinds of pasture for them to tide them over the dry period that usually follows the spring months. The advantages of the system include the following: (1) It enables the farmer to keep a much larger number of sheep than it would be possible in the absence of such forage. (2) It enables him to grow a better quality of mutton because of the succulence of the food. (3) The system is death to every form of weed growth. (4) It does not impair the fertility of the land. and (5) The crop that follows such depasturing is sure to furnish an abundant growth in a normal season. Minnesota alone by adopting such a system generally could grow all the sheep in the United States without using one acre of land now under cultivation.

FARMING.

STEER AND HEIFER BEEF

Widely different opinions are held as to the comparative value of steer and heifer beef. American packers rate steers at from 25 to 50 cents per hundred more than heifers of the same age, breed and general qualities. On the other hand, the opinion in England is the reverse, heifer beef being rated higher than steer beef.

For some years feeding experiments have been made at the Iowa Stations to study the comparative value of steers and heifers for fattening. In the first trial one lot of steers, one lot of spayed heifers, and one lot of open heifers were

used. They were all grade Shorthorns, as nearly alike in breeding and development as possible. There were five animals in each lot. The lots were fed and treated in the same manner. Seven of the heifers calved during the trial, which interfered with the comparison. The steers made a larger gain and sold for one cent per pound, live weight, more than the heifers. During the whole test, which lasted about eleven months, the steers made an average gain of 806 pounds; one open heifer, clear of calf, gained 775 pounds; four open heifers that had calves made an average gain of 628 pounds; two spayed heifers, clear of calf, made an average gain of 736 pounds; and three spayed heifers that had calves averaged 645 pounds gain.

The steers were sold at 5.75 cents and the heifers at 4.75 cents per pound, live weight. Allowing 3.5 cents per pound for the steers and 2 cents for the heifers at the beginning of the trial, there was a profit of \$64.39 on the steers, \$30.51 on the unsplayed heifers, and \$13.76 on the spayed heifers. The average proportion of beef in the carcass was 63.2 per cent. for the steers, 62.4 for the unsplayed heifers, and 62.8 for the spayed heifers.

When slaughtered, the carcasses were cut and judged by an expert. The heifers gave a larger percentage of prime cuts (ribs and loins) than the steers, so that, on the basis of the meat and by-products obtained and the price paid for the steers, the heifers were worth from 0.57 to 0.62 cent a pound more than was paid for them.

Crediting each lot with the actual value of the different cuts and the by-products, and not including the expense of killing and handling, it is calculated that, at the prices which the butcher paid, he made \$20.45 on the steers, \$58.12 on the unsplayed heifers, and \$64.84 on the spayed heifers. In other words, the returns made by the heifers would have justified a purchase price of \$5.37 per hundred for the spayed heifers and \$5.32 for the open heifers, instead of \$4.75 for each, and still have left the same profit as with the steers.

The results of a second trial to compare steers and heifers for beef production have been recently published. The test was made with 15 pure-bred or high-grade Herefords. The animals were divided into three equal lots, one of steers, one of spayed heifers, and one of open heifers, and all were fed alike during fourteen months.