

THE S I S .

THE SHEEP INDUSTRY IN KANSAS .

by

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The sheep industry is at present receiving very little attention among the Kansas farmers as compared with what it did twenty years ago. In 1884 the number of sheep in Kansas was 1,206,297, but from that time until 1895, when the number reached 136,520, there was a constant and steady decrease as shown by the figures, and the census of 1904 showed a total of only 167,721. Owing to the favorable climatical and food conditions prevailing in Kansas it is difficult to account for this decrease. However, there were certain conditions of environment which prevailed two decades ago, which undoubtedly had an influence in driving out the sheep industry. The first was the presence of a large number of dogs of worthless character, whose deadly work was surpassed only by that of the countless number of wolves that everywhere flourished off the flocks of the farmers. The country being undeveloped, especially in Western Kansas, as far as improvements are concerned, sufficient protection was not furnished the sheep at night, and watching them night and day added much to the expense of raising them. In conformation to these facts the following statement, taken from the Secretary of Agriculture in 1873, are given:

"Mr. R. J. Stevens, of Newberry, Kansas, in reply to an inquiry from the secretary of the Board says: 'Kansas is a state as well adapted to the sheep industry, and in Wabaunsee county we raise wool and mutton for 50 per cent. less than in the state of Ohio. But in other localities we need protection against the worthless dogs.'" In the same report James O'Neil, of Jefferson

county, Kansas, says: "I imported in 1869 one hundred and fifty of the best long-wooled Cotswold and Leicester sheep. I am thus far well pleased with the climate, and the sheep are healthy, but with the best of care they are reduced in number by wolves and dogs to seventy.

The only disadvantage in the sheep industry in Kansas mentioned in this and other letters of the same report was the ravage of wolves and dogs, and it is this, the writer claims, that has made the sheep raising industry unprofitable.

Another factor which came into operation later was the low price of wool. In the year 1895 wool sold as low as seven or eight cents per pound, and at the same time the price of mutton was low. The development of the wheat industry in central Kansas and the western part of the state also had its effect in helping to crowd out the sheep. Wheat raising gave very profitable returns and vast areas of grazing land were broken up and converted into wheat fields. All of these extensive influences acted together, reducing the Kansas sheep in number until almost none were left. However, more interest in sheep is being shown at present and it is probable that the advantage which Kansas offers for wool and mutton production will soon be recognized.

Her climate is almost an ideal one for sheep. Her long summers supply pasture for a period of at least seven months in the year, during which time no grain at all need to be fed unless to young lambs which are intended to go to an early market. During the winter months the weather is usually mild and there is little snow or rain, so that the sheep may spend much of their time in the fields, thus preventing the unusual loss of lambs and ewes which occurs in the winter and spring months for lack of exercise when

it is necessary to house them during rains and snows. The almost constant sunshine and general dryness of the air does much toward the destruction of infectious disease germs and keeps a dry fleece on the sheep, a condition which is very essential to health and thrift.

Kansas is directly on the route from the great grazing district of the western states to the great market centers, and with her abundance of forage and grain and favorable climatic conditions becomes the natural ground for millions of sheep on the western plains. Alfalfa hay, corn, Kafir-corn are feeds which are hardly to be surpassed for the rapid and economical fattening of these sheep, Kafir-corn especially being better digested by sheep than by any other kind of stock, and since Kafir-corn may be raised on the upland more rapidly than any other grain because of its drouth resisting nature, the keeping of sheep in such sections becomes of great economical importance.

Since the maturing of range lambs for the market is a phase of the sheep industry which is given as much or more attention by the farmers of Kansas as any other, it becomes important to determine from what section of the country these lambs should be secured as well as what feeds should be used in order to secure the best results in feeding. An experiment conducted by the Dairy & Animal Husbandry Department of the Kansas Experiment Station during the winter of 1904-'05 gave some very interesting and instructive results. Fifty range lambs were bought from Mexico ^{and fifty from Montana} for the experiment. On February 14th one of these sheep was found dead. The cause of the death was unknown. On several other occasions some were slightly ailing, but the rest remained well during the experiment.

The Montanas and Mexicans were divided into three lots of ten each, and one lot of twenty. The four lots of each kind were fed as follows:

Lot I. Shelled corn and alfalfa.

Lot II. Kafir-corn and alfalfa.

Lot III. Shelled corn, cotton-seed meal and prairie hay.

Lot IV. Shelled corn, alfalfa hay and silage.

The lots of twenty sheep each received the ration containing the ensilage. After the sheep were well on to feed they were fed all the grain they would clean up within a half hour after feeding, and all the hay that they would eat before the next feeding time. They were fed twice a day. The experiment lasted 108 days. The gains per hundred weight and cost of feed for each lot are given in the following table:

| Lot No. | :Ration Fed. | | Wt. Dec. 9 | Wt. Mar. 27 | Total Gain | Av. Daily Gain | Feed per cwt. gain | | | Cost of feed per cwt. gain |
|---------|--------------|-------------|------------|-------------|------------|----------------|--------------------|-------|-------|----------------------------|
| | :Grain: | :Rough.: | | | | | Gr: | Hay: | Ens: | |
| 1 | Shelled | | | | | | | | | |
| Mexican | Corn | Alfalfa | 520 | 830 | 310 | .287 | 424.5 | 577.4 | | \$4.39 |
| 2 | Shelled | | | | | | | | | |
| Montana | Corn | Alfalfa | 600 | 990 | 390 | .361 | 358.3 | 441.5 | | 3.72 |
| 3 | Kafir | | | | | | | | | |
| Mexican | Corn | Alfalfa | 510 | 810 | 300 | .277 | 457.6 | 515.3 | | 4.39 |
| 4 | Kafir | | | | | | | | | |
| Montana | Corn | Alfalfa | 570 | 980 | 410 | .379 | 340.8 | 474.6 | | 3.52 |
| 5 | Shelled | | | | | | | | | |
| Mexican | Corn | Prairie Hay | 420 | 670 | 250 | .231 | 530.0 | 390.9 | | 4.98 |
| 6 | Shelled | | | | | | | | | |
| Montana | Corn | Prairie Hay | 437 | 764 | 327 | .303 | 381.2 | 327.2 | | 3.78 |
| 7 | Shelled | | | | | | | | | |
| Mexican | Corn | Alfalfa | 1040 | 1660 | 620 | .287 | 422.5 | 432.2 | 296.7 | 4.37 |
| 8 | Shelled | | | | | | | | | |
| Montana | Corn | Alfalfa | 1170 | 1910 | 740 | .342 | 368.9 | 362.1 | 266.2 | 3.77 |

The corn fed was estimated at 70¢ per hundred, Kafir-corn 65¢ per hundred, alfalfa hay 27½¢ per hundred, ensilage 7½ ¢ per hundred and cotton-seed meal 25¢ per hundred.

As will be noticed, first, each lot of Montanas made a larger gain than the corresponding lot of Mexicans fed the same ration, and second, each lot of Mexicans consumed more feed per rate of hundred pounds of grain than the Montanas, the cost of feed therefore being less for the Montanas than for the corresponding lot of Mexicans. The Mexicans did not seem to consume as large an amount of feed as the Montanas. The best gains made were by Lot 4 on a ration of Kafir-corn and alfalfa. The second best was by Lot 2, fed a ration of shelled corn and alfalfa, and the third was by Lot 8, fed a ration of shelled corn, alfalfa and ensilage. Lots 5 and 6, receiving cotton-seed meal cannot be compared with the other lots in the point of gain for ration fed because they were lighter at the start than the others. They ate the cotton-seed meal with relish and made very satisfactory gains, No. 6 making gains at a cost of \$3.78. The lots receiving the ensilage ate it readily, consuming about one pound per head. The effect on the digestive system did not seem to be so marked as in the case of the others, the character of excretion with silage lot being practically the same as from the other lots. They did not eat quite as much corn as the other lots, probably on account of the larger bulk of roughage they consumed, consisting of hay and ensilage.

The period of cold weather during the months of January and February furnished a very favorable opportunity for the comparison of temperature on the northern and southern sheep. The sheep were weighed every two weeks and the average range of temperature every two weeks was figured from this data, furnished by the Physics

984

Department of the College, with the results shown in the following table:

| Two weeks ending: | Average Temp. | Gain per head | |
|--------------------|---------------|---------------|---------|
| | | Montana | Mexican |
| Dec 23 | 32. | 4.51 | 6.1 |
| Jan. 6 | 28.2 | 5.58 | 2.8 |
| Jan. 20 | 16.5 | 3.92 | 2.7 |
| Feb. 3 | 15.3 | 3.62 | 2.7 |
| Feb. 17 | 7.9 | 3.72 | 3.5 |
| March 3 | 43.3 | 7.35 | 5.41 |
| March 17 | 47.4 | 4.41 | 3.16 |
| March 27 (10 days) | 48.2 | 4.12 | 3.26 |

| Average temperature and gains for six coldest and six warmest months. ^{weeks.} | | | |
|--|-----------|---------|---------|
| | Av. temp. | Montana | Mexican |
| 6 Coldest weeks | 13.2 | 11.26 | 8.9 |
| 6 warmest weeks | 40.9 | 16.27 | 14.67 |

The above figures show a difference in gain of 1.6 in favor of the Montanas during the warmer weather, and 2.36 per head during the colder weather, indicating that the Montanas were not so much affected by the cold as the Mexicans. However, both northern and southern sheep showed a decided difference in favorable gains during the warmer weather.