

Summary

The varieties of milo used in these tests were not distinctly different from the standpoint of chemical analysis.

A definite preference was shown for R.S. 610 in the palatability tests. Kafir 44-14 appeared to be the second most palatable, with Redlan and Amak R-12 distinctly less palatable.

In feeding trials where the assigned variety of ground milo was fed free-choice with supplement, the rates of gain were not greatly different among treatments.

The pigs fed Darset, as the grain, required about 29 pounds more feed per 100 pounds of gain than was required on the average for the other five varieties.

In terms of the cost of producing pork, with Kafir 44-14 rate at 100 percent, the relative values of the other varieties were: Amak R-12, 99; Redlan, 99; R.S. 610, 95; Dekalb F 62A, 95; and Darset, 87 percent.

Mineral Supplementation of Weathered Range Grass When Fed in Wintering Rations of Cattle

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In previous research at this station, it was found that the minerals of alfalfa hay improved the utilization by sheep or cattle of rations containing high levels of ground corn cobs, cottonseed hulls, or wheat straw, but no improvement was noted when prairie hay was the roughage. Also, additional minerals in general have not been beneficial when fed to cattle maintained on the native blue stem grass ranges during the winter season if cottonseed or soybean meal were the source of supplemental protein.

As it is possible that the results obtained on the range were confounded by the availability of early spring grasses which contain a high level of minerals, it was thought that the feeding of weathered range grass to cattle maintained in drylot would give a more critical test. The results of such a test presented in this report.

Procedure

Two pairs of identical-twin Aberdeen Angus steer calves weighing about 500 pounds each at the start of the experiment were fed a ration composed of 2 pounds of cottonseed meal plus weathered range grass for 172 days. In addition, salt and a mixture containing vitamins A and D were fed. The hay and cottonseed meal were fed once daily; the animals were given more of a weighed portion of hay than they would consume and that left in the feed trough was weighed 24 hours later in order to determine the daily consumption.

One member of each set of twins received in addition a daily supplement of 102 grams of minerals composed, in percent, of: potassium carbonate, 31.55; calcium hydrogen phosphate, 48.97; magnesium sulfate, 10.75; sodium chloride, 7.43; ferrous sulfate, 0.91; manganese sulfate 0.10; sodium borate, 0.19; copper carbonate, 0.02; zinc sulfate, 0.07; cobalt chloride, 0.0001; and molybdenum oxide, 0.0008. These minerals were mixed with the cottonseed meal and fed daily.

The animals were weighed at the start of the experiment and at 14-day intervals for duration of the experiment. The initial and final weights were preceded by a 16-hour "shrink" period during which both feed and water were not available to the animals.

Results and Discussion

Many workers have shown that one set of identical-twin cattle to be equivalent to as many as 20 or more unrelated animals in experiments similar to this one. In Table 1, it is noted that in twin Set A there was no difference between the gains of the animals, while in Set B, the animal receiving supplemental minerals gained 21 pounds more than the control animal. These results suggest that the supplemental minerals did not stimulate gains in these animals.

Both of the animals receiving minerals exhibited glossy hair coats indicative of more natural oils in their hair. The control animals had

TABLE 1. Effect of supplemental minerals upon gains of cattle fed weathered range grass.

Item	Twins Set A		Twins Set B	
	1	2	3	4
Animal number	1	2	3	4
Supplemental minerals	—	+	—	+
Total gains, lb.	73.0	72.0	56.0	77.0
Cottonseed meal, lb.	144	144	144	144
Minerals, lb.		38.7		38.7
Hay, lb.	1919	1906	1661	1860

coats that were considerably duller. The significance of this observation is not known.

In earlier work at the Kansas Agricultural Experiment Station, it was noted that a mixture of trace minerals likewise caused animals receiving prairie hay plus cottonseed meal to have a glossier coat than their controls. The Kansas experiment was also conducted in drylot. No such observations have been reported when trace minerals were added to the cottonseed meal of animals maintained on a winter range area near Stillwater.

Under range conditions, the animals have more opportunity for selective grazing than did the twins used in this experiment. Also, the range animals have access to late winter and early spring grasses which have a very high mineral and protein content. Under these conditions, supplemental minerals have not, in most trials, been beneficial to the range animals unless urea replaced a part of the cottonseed meal.

These results, obtained from a more critical experiment, support the observation that when sufficient cottonseed meal is supplied to the rations of cattle maintained on native range pastures, there is little likelihood that minerals other than salt should be supplied.

The Value of Aureomycin¹ In Wintering Rations for Heifer Calves

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Certain antibiotics are generally accepted as desirable additives in many swine and poultry rations. Their use in rations of cattle and sheep is less widespread. Many claims as to the value of antibiotics in cattle rations have been made. Only little data are available on the value of antibiotics in cattle wintering rations. Therefore, a test was conducted to determine the value of a certain antibiotic, Aureomycin, in wintering of heifer calves.

Procedure

Sixty-four weanling heifer calves were divided into six lots and were fed prairie hay starting November 5, 1958. Lots 1 through 4 contained 9 heifers each. Those in Lots 1 and 2 weighed approximately

¹ Aureomycin is the trade name of chlortetracycline manufactured by American Cyanamid Co., Pearl River, New York. Thanks are due this company for supplying Aurofac 10 which was the source of the Aureomycin hydrochloride used in this test.