

**KEDLOR OR SOYBEAN OILMEAL AS A PROTEIN SOURCE
FOR COWS WINTERED ON HAY AND STRAW**

Beef cows have been wintered at this station on rations where straw plus supplemental protein has replaced up to two-thirds of the hay. These high straw rations plus protein did not affect the production of the cow or the growth rate of her calf. However, when wintering cows on low quality feeds, it is essential to provide adequate protein (nitrogen) so the rumen micro-organisms remain plentiful and active in the conversion of these low quality, high roughage feeds into usable energy.

Kedlor, a biuret product in which two urea molecules are joined together, contains 230 percent protein equivalent nitrogen but does not contain any feed energy. Kedlor has a slower release of ammonia in the rumen and is therefore less toxic to feed to cattle than urea, especially with high roughage rations. Soybean oilmeal, a natural source of protein nitrogen contains 44 percent protein, and 78 percent TDN (total digestible nutrients), about the same energy as does barley. Approximately 0.2 pounds of Kedlor 230 will provide the same amount of nitrogen as will one pound of soybean oilmeal.

In November, 1969 a trial was started to compare Kedlor 230 with soybean oilmeal on an equal basis. In the first year's trial, the cows received 7 pounds of crested-wheatgrass hay, chopped wheat straw (free choice) plus minerals. One half of the cows received one pound of soybean oilmeal while the other half received 0.2 pound Kedlor 230 plus one pound of barley to equalize the energy. When fed in this manner, there was no apparent difference between lots, either in weight gain or cost per day.

In November, 1970 the trial was continued in a similar manner with both lots of cows to receive 5 pounds of tame hay, chopped oat straw free choice plus minerals and supplements. It was planned to feed the Kedlor 230 by mixing it in the mineral mixture while the check lot would receive 0.5 pound of soybean oilmeal daily.

In 1970-71 neither lot of cows would consume their expected mineral intakes, so in February 1, 1971, the Kedlor was force fed by mixing it with barley at the rate of 0.2 pound Kedlor plus one pound of barley per cow per day. The soybean oilmeal lot also received the additional barley starting February 1, 1971.

The results are shown in Table 19 for both years.

Table 20 shows the average ration fed in 1970-71.

Table 19. Two Year Results Comparing Kedlor and Soybean Oilmeal as a Protein Source for Cows

Data on:	Kedlor		Soybean Oilmeal	
	1970-71	1969-70	1970-71	1969-70
Number of cows	42	40	44	42
Days wintered	107	113	107	113
Average weight (Nov. 30)	1088.2	1077.9	1074.3	1066.3
(March 17)	1112.4	1116.2	1133.4	1100.7
Avg. gain / head	24.2	38.3	59.1	34.4
Avg. daily gain / head	0.23	0.34	0.55	0.30
Avg. calf birth weight	72.1	76.0	75.3	77.7

Table 20. Average Ration Fed and Cost Per Cow Wintered on Either Kedlor or Soybean Oilmeal Protein Supplement

	Kedlor	Soybean Oilmeal
Ration lbs. / hd. / day:		
Chopped straw	16.8	15.4
Crested brome hay	5	5
Barley (Feb. 1 – March 17)	1	1
Kedlor	0.2 ^{1/}	----
Minerals	0.2	0.2
Soybean oilmeal (Nov. 30 – March 17)	----	0.5
Avg. cost / cow / day	19.2¢	17.3¢
Total cost/ cow fed	\$20.56	\$18.50

^{1/} Kedlor force fed with barley after February 1, before that, all minerals fed were not well utilized due to very poor consumption.

Summary

The data for 1970-71 show that the cows in the Kedlor lot consumed about 1.5 pounds more straw per day than did those fed the soybean oilmeal, apparently in an effort to equalize energy.

Under our conditions it was next to impossible to get adequate consumption of Kedlor by mixing it with the minerals. Therefore, the 1970-71 data on mineral intake is not entirely representative of actual intake.

It appears that the poor palatability of Kedlor may be a serious handicap, especially so in a mineral mix because of the very low intakes.