

Dehydrated Potatoes for Sheep

By
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The disposal of low grade potatoes continues to be of importance to the potato industry. Some method of disposing of them is needed that will protect the grower of quality potatoes both in regard to market demand and price and disease control.

Work conducted at this station² demonstrated that dehydrated potatoes could replace up to one-half the corn in a hog fattening ration if proper attention is paid to protein and mineral supplements. When fed under the conditions of the station trial, the dehydrated potatoes had a value approximately that of yellow corn.

Since it was demonstrated that dehydrated potatoes have a relatively high feeding value, the North Dakota Research Foundation has developed a process for dehydrating cull potatoes at low cost. This process makes possible production of dehydrated potatoes at a cost comparable to that of feed grains. Plants are now in operation in North Dakota using this low cost process.

Use as Livestock Feed

In order to further study the value of this product as a livestock feed, trials are continuing at the North Dakota Agricultural College. During the spring of 1946, fifty coming yearling ewes were on a trial comparing yellow corn and dehydrated potatoes.

Table I presents the pertinent data on that trial. Since it is known that potatoes are low in protein, the ewes in the lot fed potatoes were fed .24 pound of soybean oil meal per head daily; while those that were fed corn were fed .16 pound of oil meal per head daily. The dehydrated potatoes were found to be extremely palatable—the lambs starting on feed quite readily. The lambs continued to eat up to one pound per head daily with no signs of scouring or other ill effects. The only death loss during the fifty-six day trial was one ewe in the corn lot.

A comparison of the average daily gains in the two lots shows: 0.307 lbs. on corn and 0.225 lbs. on potatoes. This indicates that the potato ration was 73% as effective as the corn ration in promoting gains.

The feeding value of dehydrated potatoes in this trial is slightly below that calculated after the pig feeding trial,

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²Dehydrated Potatoes for Fattening Pigs—Longwell, J. H., and Buchanan, M. L.—N. D. Agr. Exp. Sta. Bi-Monthly Bulletin, Vol. VII No. 6, July and August, 1945.

Table 1—Yellow corn versus dehydrated potatoes for sheep

	Lot 1 Yellow Corn		Lot 2 Potatoes	
Days on Feed	56		56	
Number of Lambs	25		25	
Initial Total Weight	1838	lbs.	1842	lbs.
Initial Average Weight	73.5	lbs.	73.7	lbs.
Final Total Weight	2268	lbs.	2156	lbs.
Final Average Weight	91.1	lbs.	86.2	lbs.
Total Gain	430	lbs.	314	lbs.
Gain per Lamb	17.20	lbs.	12.57	lbs.
Average Daily Gain	.307	lbs.	.225	lbs.
Total Feed		Pounds		Pounds
Grass Hay		2765		2765
Soybean Oil Meal		220		330
Yellow Corn		1272		1272
Dehydrated Potatoes	
Total Cost		\$44.49		\$36.47
Cost per Pound Gain		\$ 0.103		\$ 0.11

Bonemeal and salt were self fed to both lots.

Feed Prices

Grass Hay.....	\$10.00 per ton
Soybean Oil Meal.....	\$60.00 per ton
Yellow Corn.....	\$1.25 per bushel
Potatoes.....	\$20.00 per ton

where it was found that dehydrated potatoes could replace corn pound for pound up to one-half corn and one-half potatoes.

There is a possibility that the low cost process using a continuous press to remove a portion of the fluid may result in a reduction of feeding value. The lower feeding value of dehydrated potatoes in this trial, 73%, is comparable to the results of Woodman and others³ who calculated a nutritive value of 79.2 for dehydrated potatoes compared to grain when fed to sheep.

Conclusions:

The results of this trial indicate that dehydrated pota-

atoes as produced by present processes are a palatable feed for sheep. The sheep did well throughout the feeding period and gained at the rate of 0.225 pounds per day on the potato ration as compared to 0.307 on the corn ration. This would indicate that dehydrated potatoes may be used as a substitute for grain in sheep rations if care is taken to provide additional protein and minerals.

With our present scarcity of feed grains and the economic importance of disposing of the cull potatoes, it would seem apparent that dehydrated potatoes can be used as a substitute for grains in both hog and sheep rations.

³Investigations of the feeding value of artificially dried potatoes. H. E. Woodman and R. E. Evans, Jour. Agr. Science, Vol. 33, pt. 1, Jan. 1943.