Bulletin No. 82 - Feeding Beet Pulp to Steers and Sheep

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Feeding Beet Pulp to Steers and Sheep.

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LOGAN, UTAH.
The Agricultural Experiment Station of Utah.

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For the last two winters feeding experiments have been carried on by this Station to ascertain the value of beet pulp and beet molasses as food for sheep and steers. In a feeding test made with sheep two years ago, the results of which are reported in bulletin No. 78, sugar beet pulp and sugar beet molasses gave profitable returns. When lucern and pulp were fed, one pound of gain was made from 7.95 pounds of lucern and 17.86 pounds pulp. One hundred pounds of increase was made at a cost of $2.48 and pulp had a value of $1.86 per ton. When lucern, grain (one-half screenings and one-half bran) and pulp were fed, one pound of gain was made from 4.23 pounds lucern, 1.56 pounds grain and 10.14 pounds pulp. One hundred pounds of increase was made at a cost of $2.28 and pulp had a value of $3.38 per ton. These results agree with the results obtained in the last feeding experiment, namely, that the greatest profit comes from feeding lucern and pulp to sheep when a small amount of grain is added to the ration. Pulp fed in limited quantities with lucern or lucern and grain did not give as good results as when similarly fed *ad libitum*. When lucern, bran and molasses were fed one pound of gain was made from 8.1 pounds of lucern, 1.5 pounds bran and 1.43 pounds of molasses. One hundred pounds of increase was made at a cost of $2.59.

In the feeding experiment carried on last winter the steers and sheep that received only lucern and beet pulp made the smallest gains per day, and of all lots they required the most dry matter per pound of growth, but gave the largest profit. The steers made one pound of gain from 11.5 pounds of lucern and 31.4 pounds pulp at a cost of 2.8 cents. The sheep made one pound of gain with 16.6 pounds lucern and 36.7 pounds pulp at a cost of 3.8 cents. Pulp when fed *ad libitum* with lucern to steers had a value per ton of
$1.85 and when similarly fed to sheep it had a value of $1.13. One hundred pounds of increase with steers on a full ration of lucern and grain (½ bran and ½ shorts) cost $4.93. One hundred pounds of increase with another lot of steers of no better feeding quality on a full ration of lucern, grain and pulp cost $3.98. One pound of gain was made from 7.2 pounds lucern, 3.2 pounds grain and 17 pounds pulp. Pulp had a value of $2.06 per ton. When a full ration of lucern and pulp was fed with a half ration of grain one pound of gain was made from 9.2 pounds lucern, 2.03 pounds grain and 19.1 pounds pulp. One hundred pounds increase cost $3.51 and pulp had a value of $1.66 per ton. When a full ration of grain and pulp was fed with a half ration of lucern one pound of gain was made from 4.28 pounds lucern, 3.65 pounds grain and 21.3 pounds pulp. One hundred pounds increase cost $3.84 and pulp had a value of $2.54 per ton.

The above results indicate that the greatest profit is secured when lucern and pulp are fed ad libitum with no grain or a minimum of grain (½ bran and ½ shorts).

Molasses in small quantities (four pounds per animal per day) fed with eight pounds of grain per animal per day and with pulp ad libitum had a value of $2.35 per ton.

Mr. Hans Larsen, a feeder at the Logan sugar factory, feeds thousands of sheep and steers for shipment to the Pacific coast every winter. His feeding operations are financially successful and he values beet pulp at $2.50 per ton. Lucern and beet pulp are fed ad libitum regularly twice a day in well drained open yards and only such quantities given as will be eaten up clean in a few hours. All animals have constant access to salt and water and are bedded with straw during the coldest months. Good drainage of yards and plenty of bedding should always be provided, if possible, as heavy pulp feeding causes a very laxative condition.

Much more feeding of sheep and cattle should be done in the vicinity of beet sugar factories by farmers than is now practiced. Because of its high per cent. of water beet pulp could not be profitably transported long distances. One ton of pulp contains about 1800 pounds of water. On account of its succulency and carbonaceous character it is a most valuable food for winter use and makes an excellent supplementary food.
to lucern and the grains. Pulp keeps well in the open air in large piles but in small piles it may freeze, which injures its food value. It has a strong offensive odor during early fermentation and therefore it should not be stored near dwellings or in barns where live stock is kept. Fermentation seems to improve rather than injure it. If sub-soil drainage is good, pulp may be stored in pits and covered with some kind of straw or litter but not with barnyard manure.

In feeding beet pulp the best practice is to begin with a small quantity per day and gradually increase until the desired number of pounds is reached, taking several weeks for it. There is more danger of feeding too much at first than too little. When too much is fed, animals get off feed and scour, but straw added to the ration will help obviate this trouble. The feeding should begin with one or two pounds per head per day for sheep and hogs, and ten or fifteen pounds per day for cattle. Along with grain and dry forage, sheep will take per head per day from two to ten pounds, cows thirty to fifty pounds and steers forty to eighty pounds. Pulp may be fed along with concentrates to hogs in small quantities, but as it is not naturally suited to this class of animals the quantity fed should be small. For swine pulp should not be depended upon too largely, for to them as a single food it is only a maintenance ration. Animals will take rapidly to pulp if it is mixed with grain. The amount of pulp fed per day should be reduced toward the close of the fattening period, especially if the animals are to be shipped long distances to market.

Sheep should be dipped for scab two or three times at intervals of two weeks before being put into the feed lot; otherwise, most profitable returns may not be obtained. When steers are to be fed a considerable length of time they should be dehorned as it makes them more tractable and docile.

Dry and comfortable but not necessarily warm quarters, constant access to salt and water, regular feeding and kind treatment are essential if most profitable results are to be obtained.