

BEET TOPS AS LIVESTOCK FEED

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Idaho will produce from 2½ to 3 million tons of sugar beet tops annually for livestock feed. Better utilization of this by-product feed could add significantly to the income of Idaho livestock producers. With the pasture season short, many beef cattle operators have to start feeding nearly a month early.

FEED VALUE OF SUGAR BEET TOPS

When the conversion of solar energy to plant food is considered, sugar beets are found to be one of the most efficient crops grown. If the beet by-products—including the beet pulp—from one acre of sugar beets are completely utilized as livestock feed, they will exceed the feeding value of an acre of alfalfa or an acre of grain produced under the same conditions.

ESTIMATE THE VALUE OF YOUR TOPS It is easy to roughly determine the amount of feed your beet tops can supply. *On the average, a 20-ton crop of beets will supply about 14 tons of tops per acre. This will provide an average of 2½ tons of dry matter, including 560 pounds of protein.* Included in a balanced ration this will produce more than 325 pounds of beef or lamb.

IN COLORADO, where intensive research has been carried out with sugar beet by-products, it has been shown that field-cured beet tops have about 72% the value of alfalfa hay. Dehydrated beet leaves and dehydrated beet tops were worth 15% and 8% more respectively on a total digestible nutrient basis than alfalfa.

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Beet tops should be ensiled while clean and whole, just as they come from the topper. Little or no packing is required when they go into the crib or bunker because of the moisture content and weight of the tops.

HOW TO SAVE TOPS

Beet top harvesters, which remove the tops from the root before digging, are the most effective means of saving the tops. The tops can be elevated into trucks and then hauled to pits, stacks or silos. *Crib-type silos on good drainage have an advantage over pits and concrete bottom bunker silos because of the seepage factor.* Ensiling is usually recognized as the best method of handling beet tops.

FIELD CHOPPING AND ENSILING Rapid moisture and carotene losses occur the first 10 days after tops are cut if they are windrowed or field stacked. Much of this loss can be prevented by field chopping and ensiling the tops. When ensiling fresh tops, it is good practice to add a low moisture forage crop such as straw or hay or concentrates to help absorb juices. *Beet tops are a highly laxative feed* if used as the only source of roughage. They should, therefore, be fed with another dry roughage or with grain. Cattle pasturing beet tops should have access to dry pasture or be fed straw.

DEHYDRATING Experimental choppers have been developed that reduce the particle size of beet tops so that regular alfalfa dehydrating equipment can be put to use for drying. Dehydrated beet top pellets are an excellent livestock feed. The limiting factor is the cost of putting them up. More research is needed in Idaho on the utilization of beet tops since this feed has so much economic potential.

WHEN TO CUT Beet tops should be cut *no sooner than a week before beet root harvest*. The sugar content of the root declines after the top has been cut. Research on the effect of topping shows that the sugar content of the root declines an average of .8 percent per week after top cutting. Sugar loss is lower late in the season.



A simple inexpensive method of ensiling tops is shown here. The only disadvantage is the spoilage loss that may result from air seepage along the sides of the baled straw. A plastic liner would prevent this loss.

FEEDING BEET TOPS TO LAMBS

When beet tops were fed to lambs as a part of a balanced fattening ration, Nebraska Experiment Station reports show that the tops from each root-ton of beets saved an average of 24 pounds of concentrate and 102 pounds of alfalfa hay. Converting these figures to an average 17-ton yield of beets, the tops from 1 acre would have replaced nearly 1 ton of alfalfa hay and 1/4 ton of grain. With present market prices, the value per acre of beet tops would be approximately \$30.

Lamb feeding trials conducted in 1961 and 1962 at Scottsbluff, Nebraska Experiment Sta-

tion resulted in higher daily gains for lambs fed beet top silage than for lambs fed corn silage.

Recent research shows that concentrates may be mixed with beet tops at the time silos are filled to produce highly satisfactory gains. In these tests, up to 300 pounds of corn, 300 pounds of beet pulp pellets and 300 pounds of dehydrated alfalfa pellets were added to each ton of tops.

FEEDING BEET TOPS TO BEEF CATTLE

Most beet top feeding principles that apply to lambs also apply to beef cattle. It is important to balance the ration and to include other roughages with the beet tops. They are highly laxative and will cause scouring if fed in too large an allowance. Your county agent can help you set up a good beef ration that will include beet tops.

PESTICIDE RESIDUES

CAUTION: Sugar beets which have been treated with the chlorinated hydrocarbons must not be fed to livestock which are going to slaughter. Pesticides in this category used on sugar beets include benzene hexachloride, endosulfan, toxaphene and aldrin. Residues are likely present on the tops when these materials have been used. These can accumulate in animal fat when treated tops are fed. Detection methods now used by the Federal inspection agencies will locate these residues if they are present in the meat.

The best available information suggests about 120 days is necessary to reduce residue levels to an acceptable tolerance. Research is being conducted at the University of Idaho to determine more precisely the time required for residue dissipation.

Treated beets may be used safely in wintering rations for breeding stock, but extreme cautions are essential to prevent slaughter animals from being fed pesticide treated beet tops.

PHOTOS: Courtesy of the Utah-Idaho Sugar Company.

SAMPLE RATIONS USING BEET TOP SILAGE

Feed	Pounds Fed Daily			
	Wintering beef calves	Fattening yearlings	Wintering cows ¹	Fattening lambs
Beet top silage	25 - 35	15 - 20	50 - 60	2 - 3
Protein supplement ²	1.0	1.0	1.0	.1
Alfalfa hay	2	2	-	.5
Grain	-	10 - 15	-	1 - 3

¹Plus straw or dry pasture.
²Supplemental protein requirements will depend upon the protein content and the amount of hay and grain fed. Most alfalfa hay will carry at least 10% digestible protein. Barley is quite variable in protein, but an average analysis of Idaho barley would show 11% protein. Fattening cattle need an 11% protein ration. If steers were consuming 15 pounds of barley per day, the barley would furnish 1.5 pounds of protein if protein content was at least 10%.

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