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Chopping Hay for Storage

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The curing and handling of hay on a farm, where considerable livestock is fed, involves the use of much time and is the cause of a great deal of expense. Chopping hay at harvest time, instead of storing it as it comes from the field, is a practice which has been followed for some time by farmers in certain sections of the East and, recently it has commanded the attention of farmers in Minnesota and other states in the Middle West. The practice offers some advantages and some disadvantages. Whether or not the practice is justified depends on existing conditions and becomes a question which each farm manager must decide for himself.

Machinery and Power Needed

The silo filler, which most dairy farmers own or have access to, may be used. Work with such machines, however, is somewhat slow in handling of loose hay. Machines that are equipped with special feed rolls and are thus adapted more especially for handling of loose hay or straw make possible a greater capacity with less labor. Such machines can also be used for filling silos. If a farmer with an average amount of hay to chop, were to own a machine especially for chopping hay, the machine cost would be high. With some forethought and planning in the selection of a proper machine, it should be possible to perform satisfactorily more operations than one with the same machine and thus make possible the chopping of hay with little or no additional investment in machinery.

The power requirement is about the same as that for silo filling. The average farm tractor is a satisfactory power unit. It is well to have a cutter of ample size. If the power is relatively small, the cutter should be operated at minimum speed and may be fed to the capacity of the available power.

Details of the Practice

Curing in the field is done in the usual way. After it is sufficiently dry, the hay is loaded onto the rack and hauled to the barn. There it is unloaded by hand onto the feed table of the chopper. The chopper is equipped with a blower by means of which the chopped hay is elevated into the mow.

One man can handle the unloading for ordinary capacities if a hay chopper with special feed rolls is used. If plenty of

power is available and a large capacity is desired, two men are required to do the unloading. If an ordinary silo filler is used it is necessary for one man to feed the hay into the cutter.

The blower pipe should be located in the mow in such a position that the chopped hay may be distributed readily to all parts of the mow. The horizontal section of the pipe should not slant upward. It should be level or the far end should be slightly lower than the end near the machine.

The machine is set to cut the hay in lengths ranging from about one-half inch to one and one-half inches. The average length of the cut material will be somewhat longer because some of the stems will go through the machine cross-wise or nearly so.

It has been found advisable not to tramp the hay in the mow. It should be distributed to all parts of the mow by means of the blower.

Labor Requirements and Capacity

The possible capacity depends on power available, size of machine and size of crew. At the Iowa State College it was found that hay could be chopped with an 18-inch cutter operated by three men at the rate of 5.6 tons per hour. In Ohio two men pitching hay from the wagon into the chopper handled from 3 to 4½ tons per hour.

In tests conducted in Minnesota it was found that when two men were pitching hay into the chopper 4½ tons were cut per hour, and with one man pitching into the same machine the rate was reduced to 2½ tons per hour. This machine was equipped with special feed rolls for handling hay and the throat opening was 18 inches wide. It was equipped with three knives and was set to cut the hay into one-half inch lengths. The power used was a Fordson tractor, the speed of the cutter was 600 r.p.m. and the height of the blower pipe was 30 feet above the cutter.

It must be remembered that the figures given here on capacity are possible during steady running. Any necessary waiting for the hay to arrive from the field would reduce the rate accordingly.

Moisture Content of the Hay

While some information is available with regard to the relation of moisture content to keeping qualities of chopped

hay, it is not definitely known how much moisture the hay may contain and still not brown or be in danger of spontaneous combustion. Some reports indicate that hay with a moisture content as high as 30 per cent has been kept satisfactorily. In tests made in Minnesota it was found that hay which was stored with a moisture content of 25 per cent turned brown. Available evidence indicates that under ordinary conditions the moisture content of chopped hay when it is stored should be less than 25 per cent. Results of tests in Ohio indicate that chopped hay should be fully as dry as long hay when stored if the same quality of hay is desired.

Advantages and Precautions

A ton of chopped hay requires only about one-half as much space for storage as is required for a ton of long hay when it is well settled. Thus twice as much hay may be stored in the same mow if the hay is chopped. A word of caution is necessary in this connection. If chopped hay is stored in an overhead barn it is necessary that the strength of the supports be checked very carefully to make sure that they are capable of carrying the additional weight.

Chopping hay for storage eliminates any labor requirement in the mow. The total labor requirement for unloading is somewhat less than when hay is handled in the regular way, but the labor requirement for field work and hauling is unchanged.

Chopped hay may be removed from the mow and fed with less labor and with more accuracy than long hay. It may be hauled in a cart and the matter of apportioning a definite quantity to each animal is made easier.

Agricultural Experiment Stations have reported very little on the advisability of feeding chopped hay. However, such information as is available indicates that from a feeding standpoint chopped hay is fully as satisfactory as long hay. This is confirmed by dairymen feeding chopped hay. Another advantage is that less is wasted by the cattle when feeding.

Hay should be well cured before it is chopped for storage. It has been found that heating which may occur when chopped hay is blown into the mow on top of hay that has been there several days, takes place at the point where the new hay meets that which was previously placed there.