Alfalfa Hay in a New Package

Wafers For Cows

Frank Wiersma

Five years ago machinery companies and agricultural engineers, aided by eager journalists, generated enthusiasm among farmers and feeders over hay wafers and wafering machines. Enthusiasm had all but disappeared before hay wafers became a reality. Field hay wafering machines are now commercially available but the enthusiasm must be at least partially revived before a market for the machines will exist.

At least three farmer-owned wafering machines have wafered an appreciable tonnage of hay in Arizona. Wafers from these machines are being used primarily on a trial basis by about 10 different feeders. They may prove to be the pioneers in an entirely new method of harvesting, handling and feeding alfalfa hay in Arizona, but the changeover will not occur overnight.

New Machines Are Compact

The wafering machines were made by the Lundell Manufacturing Company and cost about $8,000 each. They are compact miniatures compared to some of their experimental predecessors. They utilize a unique principle to compress alfalfa hay into 2-inch cubes at the rate of three to four tons per hour. Hay is forced through stationary dies by two rollers acting like steamrollers passing over a grating.

The alfalfa is cut, chopped and windrowed with a flail-type harvester. The windrow is turned at least once and wafered when the moisture content drops below 20 per cent. Wafers are elevated into a trailing wagon and hauled to storage. From this point to the feed bunk, the advantages of wafering over baling will be realized. Wafers can be unloaded into an elevator, either by dumping or by using unloader wagons, and elevated into some type of crib or fenced storage.

The high density wafers require only about two-thirds as much storage space as bales. They can be removed from storage with a skip loader or under-floor drag, loaded into a truck or feed wagon and delivered to the point of consumption. This system involves no manhandling of heavy bales — the entire system can be mechanized.

Self-Feeding Possible?

Some farmers are looking at the possibilities of self-feeding wafers, eliminating the move from storage to feed bunk. However, some re-design of present self-feeding methods will be necessary to overcome the bridging tendency of wafers.

Will livestock eat wafers? Feeders who are trying them emphatically say "yes." Cattle, once accustomed to them, seem to prefer the hard wafers to the fines that were broken loose in handling. Waste is reduced and stem accumulation in the manger — the result of selective eating — is eliminated because in the harvesting and wafering process the leaves and stems are chopped and thoroughly mixed.

The manufacturer calls this "homogenized hay." Since cattle like wafers they eat more, much to the delight of feeders who are always looking for ways of encouraging their cattle to consume more feed.

Are there any nutritional advantages in wafers over bales? "Yes," says the manufacturer. "Maybe," says the feeder. "I doubt it," says the nutritionist. Apparently there is nothing magic about wafered hay containing nutrients that do not exist in baled hay. The quality of the hay is still influenced primarily by how well the original nutrients were preserved during harvest and storage. It is conceivable that wafering might lend itself to easier and more effective preservation of these nutrients.

Must Redesign Handling

The most attractive feature of wafered hay is the potential cost savings in handling. However, to realize this saving, a significant modification in present hay handling methods and equipment will be necessary. Some of this equipment is yet to be designed and tested. Before a feeder will go to the expense of adapting his system to feeding wafered hay, he must be assured of the availability at reasonable prices of hay in the wafered form.

At present, the limited number of wafering machines in the field cannot give him this assurance. At the same time, $12,000 to $15,000 investment necessary for the line of machinery required to harvest alfalfa in the wafered form is also difficult to justify without a ready market for wafers.

So just as the tractor, combine, field baler and other machines involving a new principle had to overcome consumer resistance, so will the hay waferer. But eventually, the back-breaking job of man handling bales three or four times between field and feed bunk may be replaced by a mechanized flow of wafered hay.

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BELOW, left, is the wafering machine which picks up flail-chopped alfalfa from the windrow and delivers wafers to the trailing wagon. At right, fenced-in hay stack enclosures. When loading out of storage, the elevator hopper is set in slots in the concrete floor.