

Baleage production has its place

UNIVERSITY PARK — In the last two years, farmers have become more interested in using round balers for making silage, known as round bale silage or baleage. This round bale silage is particularly useful for small and part-time farmers because it is cheaper than many other silage production practices, faster when needed in small quantities, and less dependent on the weather. Although it is not a standard management option, baled silage can be a useful management tool.

Several scientists from Penn State's College of Agriculture have been researching round bale silage. The team is comprised of animal scientists, an agronomist, and agricultural engineers. Their goal has been to define the role round bale silage may play in providing Pennsylvania farmers with another forage handling and feeding option.

Small farmers who do not have conventional silage equipment or the capital to invest in it can use baled silage, says Sidney Bosworth, Penn State Extension agronomist. It can also be used by farmers who have silage equipment, but whose silos are filled. In these cases, it can be a means of storing excess forage that needs to be harvested.

The principles for making conventional hay silage also apply to making round bale silage. The forage must be harvested at the proper state of maturity because this, more than any other factor, influences the nutritive quality of the forage. This applies to both legumes such as alfalfa or red clover, and grasses such as timothy and orchardgrass.

For every day that alfalfa is left uncut after the bud stage, total digestible nutrients will decrease by nearly a half percent a day, Bosworth stresses.

In order to concentrate the fermentable carbohydrates necessary for good ensiling, the hay crop should be wilted. Forage ensiled too wet will not ferment properly and will have high levels of butyric acid and excessive dry matter losses, resulting in poor intake by livestock. Baling at 55 percent moisture gives the best ensiling, according to research.

Another requirement for quality silage is the presence of lactic acid-forming bacteria (*lactobacillus*). These bacteria grow under an oxygen-free environment. Compared to conventional chopped silage, round bale silage makes it more difficult to create this oxygen-free environment. This may be the reason

for some of the failures with round bale silage.

A dense, tight bale is necessary to reduce the oxygen level. Air in the bale can be reduced by raking single swaths into windrows. Tighter bales can be produced from smaller windrows and a baler with a reduced ground speed. In addition, the plastic bags should be slipped over the bales and properly sealed as soon as possible. If the open end of the bag is tied as close to the bale as possible, then doubled back on itself and tied again, you'll have a good seal.

In feeding experiments with beef brood cows, the researchers encountered several problems with round bale silage that were not apparent in round bale hay. As an example, silage bales must be rolled tightly, making them difficult to be self-fed. Feeding round silage bales on concrete or other flat surfaces does not usually allow adequate, thorough consumption of the forage.

Several different feeding systems were tested, with the most promising being a feed rack consisting of pipes at a 30 degree angle which hold the bale above the ground within a three-sided metal feeding gate, according to Lowell L. Wilson, animal scientist.

"Using this system, the cows have easier access to one end, both sides and even the lower side of the bale, increasing consumption. It is also essential to remove the strings around the silage bale since this loosens up the bale and allows greater consumption."

William Kjelgaard, agricultural engineer, says that "the 30 degree inclined feeder helps shift bale weight, relieving tightness so the animals can sink their teeth into loose silage."

If the bale is very dense, and twine wrap remains intact while in the feeder, forage intake can be so low that it affects cattle performance.

For winter feeding, the scientists did not encounter problems with the outside of the bale freezing, probably because of the acids and heat generated by fermentation.

Round bale silage is used by most producers as an emergency storage method when silage chopping and conventional storage equipment and facilities are not available, says Kjelgaard.

James Garthe, Extension agricultural engineer, adds that round bale silage is a good option when bad weather interferes with hay harvest.

"If you can't dry it right and the forecast looks gloomy, maybe it can be bagged," adds Garthe.

This can be a very effective

means of storing silages, but it must be well managed. A mistake at any point in the harvesting-storing-feeding process can result in failure and lost feed.

Feedmobile

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mobile's Lancaster County success.

With no tractors or trucks to assist them, the Amish consider mobile processing units to be a valuable asset, and High estimates that 60 percent of the processing done by Modern Milling's truck is generated by Amish farms.

Although the firm's founder can recall a day when as many as 12 U.S. manufacturers built mobile processing units, he now claims to

be the only one left. Paradoxically, with the industry as a whole on the wane, Feedmobile, Inc., continued to expand, with the company's latest venture being an office in London to handle European sales. The firm currently conducts overseas business in England, Ireland, Switzerland and Africa.

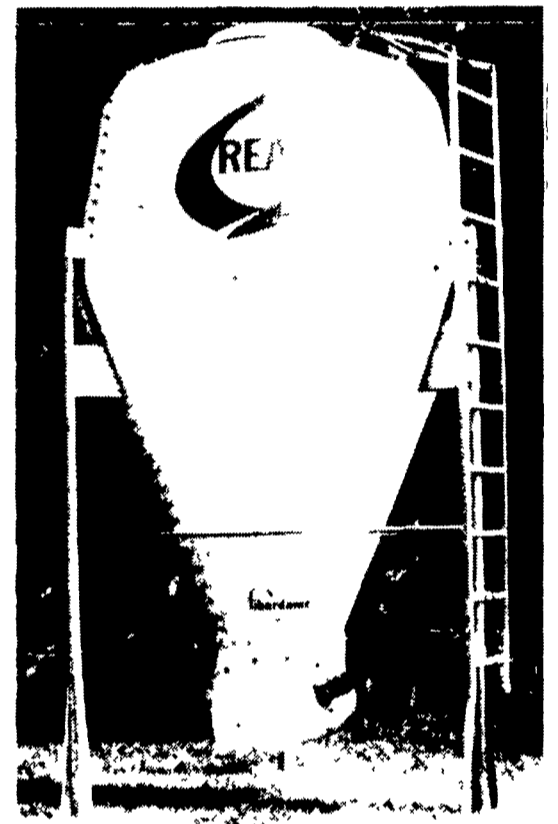
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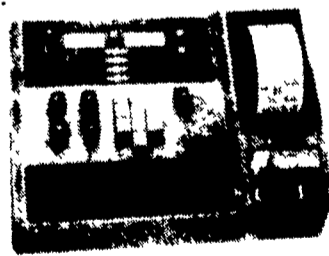
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Wild horse demo slated

LEWISBERRY — Wild horse training and gentling demonstrations will be provided free of Lewisberry next Saturday, June 16. The demonstrations will coincide with the availability of a new shipment of 25 mares with foals ready for adoption, arriving from the public rangelands of Nevada.

Tom White, an experienced horse trainer and farrier, will begin training and gentling demonstrations with wild horses at the Adoption Center beginning at 10 a.m. White, originally from New Mexico, has trained mustangs since he was a boy. Members of the Echoing Hoofbeats 4-H Horse Club will also provide demonstrations with several of their adopted wild horses.

Frank and Doris Goodlander, who operate the Center, said the

public is welcome to tour the facility, and country food concessions will be available. Invitations have also been extended to the State's 500 4-H Horse Clubs.

According to the Goodlanders, "In addition to the newly arrived horses, we currently have over 70 wild burros that are looking for good homes." The adoption fee for a wild burro at the Pennsylvania Center is \$140, and \$215 for a wild horse. This helps pay for veterinary care, transportation, round-up, and administrative costs. No adoption fee or transportation cost is charged for unweaned offspring accompanying their mare or jenny.

The Adoption Center is located about half-way between York and Harrisburg. For additional information call the Goodlanders at (717) 938-2560.