



Ridin' Herd

► by Rick Rasby, Extension beef specialist, University of Nebraska

Be prepared for opportunities this summer

The ethanol industry is expanding, but at a slower rate than anticipated. There are estimates that the production of ethanol will triple and may quadruple in the next five years. There are a number of ethanol plants prepared to begin producing ethanol and, therefore, grain byproducts. As the number of plants increases, the amount of corn byproduct being produced increases. Ethanol byproducts can be used in the diets of beef cows, developing heifers, stockers and feedlot cattle.

Pricing at the plant and availability

A daily/weekly/monthly price for distillers' grains (DGs) is sometimes hard to find. Prices of byproducts can be obtained by calling the ethanol plant. As a general rule, the price of distillers' grains is cheapest in the summer and greatest in the late fall and early winter.

It appears, at least in Nebraska, that the price follows placement of cattle in the feedlot. Most cows in the Midwest calve in the spring, and calves are weaned in the fall. Feedlot inventory is lowest in the summer months and increases in the late fall as spring-born calves are being marketed.

Cow-calf producers have had difficulty buying distillers' grains in the winter at a reasonable price. We have created a demand and, at least currently, there is not enough supply of the product. This will not be the norm in the future considering the number

of ethanol plants that have been proposed and that are coming on-line.

For many cow-calf producers, price and availability of distillers' grains are out of sync with when supplemental feeds are needed. Cows and calves graze pasture in the spring/summer and fall with usually only mineral and salt supplemented. The availability of distillers' grains is greatest and the price is the lowest in the summertime. The past two summers, when cattle-on-feed numbers have decreased, the availability of distillers' grains has increased, and the price was lower compared to the price in the late fall and winter.

The question is, will there be an opportunity this summer to economically purchase wet distillers' grains plus solubles (WDGS) or modified wet distillers' grains plus solubles (MWDGS) and store them in a bunker or bag for use in the winter?

Storage

The three most common forms of distillers' grains are wet, dried or pelleted/cubed. The price increases from the wet to the cubed form as would be expected due to the added energy and labor associated with drying, pelleting and cubing. The cubes and pellets are not 100% distillers' grains.

The challenge with pelleting and cubing distillers' grains is the fat content. Distillers' grains will be between 10% and 12% fat, which makes it a challenge to make a hard pellet or cube. We have made a hard cube with very few fines that is two-thirds distillers' grains.

There is a company in Nebraska that is making a cube that is more than 70% distillers' grains. In that plant, after the cubes leave the press, they are put in a cooling bin before being bagged or transported. This extra step allows the cube to harden and reduces the amount of fines.

We have experimented with making pellets (not cubes) that contained more than 80% distillers' grains with acceptable results.

There are plant differences with the byproduct being produced, and this does have an effect on the amount of distillers' grains that can be incorporated into the pellet. It is intuitive that more distillers' grains could be included in a pellet compared to a cube because the pellet is smaller in diameter and more pressure can be applied to the dye when making the pellet. Dried distillers' grains plus solubles (DDGS), pellets and cubes can be stored for long periods of time without many problems.

DDGS are less expensive than pellets or cubes, are usually about 88%-90% dry matter, and will store for long periods of time on concrete flooring or in an overhead bin. There is potential for DDGS to "bridge" in an overhead bin. It seems that the bridging is greater when the byproduct is hot or warm when it is delivered into the bin. If DDGS is the product and an overhead bin is the method of storage, then make sure the product is cool when put into the bin. Dried distillers' could accumulate moisture in a hot, humid condition that has the potential to cause some bridging.

At 65% water and 35% dry matter, WDGS pose the most challenges for small-scale cow-calf producers and backgrounders. Being able to handle that much water in a feed is a challenge.

WDGS keep for about a week in the summer and about three weeks in the winter. Ethanol plants do not deliver half loads, and a semi-load of WDGS is 25-30 tons. In many cases it is difficult to use this amount of feed before its shelf life has expired and it becomes rancid (due to the fat content) and moldy.

WDGS, at 65% moisture, don't bag in plastic bags very well. When pressure is applied to expel the air to provide an anaerobic environment, the bag splits. In addition, WDGS are too wet to pack in a bunker or upright silo.

If air can be expelled, much like what is done when corn is ensiled, WDGS can be stored for a long period of time without becoming moldy or rancid. With this in mind, the following rationale was used to

Table 1: Bulking agent (forage) percentages mixed with WDGS*

	Bag	Bunker
WDGS		
Wheat straw, %	12.5	25
Cornstalks, %	12.5-50	29-35
Grass hay, %	15-56	30-40
WDGS alone, %	—**	—
Solubles		
Wheat straw, %	50	50
Cornstalks, %	50	59
Modified WDGS		
DGS alone, %	—	—

*Percentages are on a dry-matter (DM) basis.
 **No pressure, bagging PSI = 300.
 Source: University of Nebraska-Lincoln.

Fig. 1: Bunkered mixture, 2006:



investigate methods to purchase WDGS: When it is less expensive and abundant (summertime), add some forage to the WDGS so the mixture can be bagged or ensiled in a bunker silo to expel air and provide an anaerobic environment so it can be stored for a period of time and fed in the winter when needed.

Table 1 illustrates the percentages of forage on a dry-matter (DM) basis that we have used to successfully bag or bunker WDGS. The forages were ground using a 5-inch (in.) screen and used as bulking agents.

We developed a byproducts storage manual that can be found on our web site, <http://beef.unl.edu>. At the home page on the left-hand side is a navigator bar titled "By-Products Feeds." Click on that, and the next page will have the storage manual.

Final thoughts

Continue to sort out opportunities to keep feed costs low in this time of increasing inputs for cows in the cow-calf enterprise. If

there are "fire sales" of WDGS or MWDGS this summer, be prepared to leverage this opportunity. Make sure purchases are economical and fit your operation.

We have developed a spreadsheet to help you determine the cost of bagging and/or bunkering distillers' grains. Again, the spreadsheet can be accessed via our web site, <http://beef.unl.edu>. At the home page on the left-hand side is a navigator bar titled "By-Products Feeds." Click on that, and on the next page click on item number six. This will take you to a page where you can click on "Co-product STORE (Storage To Optimize Ration Expenses) Spreadsheet."

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Editor's Note: "Ridin' Herd" is a monthly column written by Rick Rasby, professor of animal science at the University of Nebraska. The column focuses on beef nutrition and its effects on performance and profitability.