

With the past year's high grain prices and volatile cattle market, many beef producers are looking at alternative ways to reduce costs. One feeding option gaining in popularity is the use of by-products.

"Alternative feeds have been the most popular topic at our winter producer meetings," says Robert Stewart, University of Georgia animal scientist. Stewart credits the increased interest to the rising costs of the winter annual grazing in the Southeast.

"Our winter annual grazing in middle and south Georgia works well in terms of meeting the cow's nutritional requirements; but these forages are not cheap," Stewart.

Examples of winter annual crops include wheat, oats and rye grass that are used to supplement hay. Stewart says winter annual crops cost more than \$100 per acre to establish. Thus, the interest in alternative feeds.

In the Southeast, popular by-products include cottonseed, cotton gin trash (a by-product of the ginning process that contains boll residues, leaves, stems and lint), peanut hulls, corn stalks, brewer's grain (a by-product residue of grains fermented to produce beer), soy hulls, peanut skins and grain screenings (a by-product from the cleaning of small grains before milling).

Still yet another by-product gaining popularity in the Southeast and Midwest is broiler litter. The recent interest is generated by economics and nutrient potential, says Dan Buskirk, a Michigan State University animal scientist.

"There are an increasing number of poultry producers looking for environmentally friendly ways to handle turkey litter, thus it becomes an economical source of feed," says Buskirk.

In terms of nutritional value, turkey litter is high in nitrogen so it works well as a protein supplement in feedlot rations or as a lower energy feed for growing animals.

Weighing the Alternatives

A look at by-product feeding sources and the challenges and opportunities that come with them.

BY LISA HAWKINS MOSER



Alternative feeds popular in the Corn Belt region are wet corn gluten (a by-product that remains after the extraction of the starch, gluten and germ through a wet milling process), corn distillers' solubles (a by-product residue of grains fermented to produce liquor or ethanol), soy hulls, distillers' grains, rice bran and rice hulls, and wet beet pulp.

When corn prices were lower, Buskirk says limit feeding corn was a popular alternative to help stretch the hay supply. Today, Midwest cow-calf producers are extending their hay resources by taking advantage of crop residues such as soybean stubble hay.

"Soybean stubble is relatively low in quality and is often supplemented with some

protein source. It's typically used to stretch the hay supply," says Buskirk.

Serving a similar purpose as soybean stubble, wheat and barley stubble are common grazing alternatives in the Northwest, says Mark Nelson, Washington State University animal scientist. Sweet corn stubble is a higher quality product than the small grain

stubble that is grazed. Some Northwest cattle producers plant winter annuals among the stubble to provide

additional nutrition to the cattle. Turnip and radishes are also popular crops planted.

“Northwest cattlemen use more alternative feeds than any other area of the country. We have over 50 products that are yielding large amounts of money in the state,” says Nelson. “The most popular alternative feed in our region is potato products. These products include potato

peelings, cull potatoes, cull French fries, hash browns and potato crowns. Other common by-products in this region include: apple, grape and pear pomaces (by-products from the pressing of the fruits for juices), brewers’

grains, grain screenings, silage made from sweet corn residue, and hominy feeds.

While each region is unique in the combination of product feeds available, beef producers in all regions must consider several factors when deciding to use alternative feeds. The first factor on many producers’ lists is cost.

“The alternative feed has to be economically feasible or they would not feed it,” says Nelson.

This point is echoed by Angus breeder Richard Putnam

of Pack Power Farms, N.C. “I constantly analyze cost. I look at all types of by-products to determine which way I can feed the cows the cheapest,” says Putnam.

Putnam and his wife, Adelia, and their son, Steve, own and operate a 500-head purebred and commercial cattle farm in eastern North Carolina.

Putnam has been using alternative feeds since he started his business 20 years ago. “Lots of people in this area harvest corn and just plow the stalks under, or they combine wheat and burn off the wheat straw. It looked like a waste of resources. so I began using those by-products,” explains Putnam.

Over the years, Putnam has fed an assortment of products such as wheat straw, cottonseed, peanut hulls, grain screenings, poultry litter and various grades of hay. “We will take any quality of hay, sort through it and feed different groups of cattle the various grades,” says Putnam.

When estimating cost, Buskirk recommends ranchers price compare the traditional feed versus the alternative feed on a dry matter energy basis. Producers must also consider what levels of the feed are appropriate for the ration in terms of nutrient content and palatability. To illustrate this point, Nelson gives the following example.

“It’s cheaper per unit of energy to buy a potato product than it is to get that unit of energy from a cereal grain. However, there are limitations to the amount of the product we can put in the diet,” explains Nelson. “For example, potato products typically make up 10 to 20 percent of the diet on a dry matter basis. Since many of these products are wet and spoil quickly, product manufacturers have a limited market for the by-products. This helps keep the price down.

“Often it’s cheaper for the company to give the by-product to a livestock feeder than it is to

put it in a landfill or the city sewer,” says Nelson.

Also, some of these alternative feeds are only available seasonally. With the proper storage and handling facilities, some producers are able to take advantage of the price breaks.

“Traditionally, whole cottonseed increases 50 to 100 percent in price from Nov. 1 to April,” says Stewart. “Therefore, we encourage people to decide the tonnage they need and buy the product when the prices are low, even if they have to pay for storage and take delivery as they need it.”

Putnam watches for seasonal bargains and, when the right opportunity comes, buys the product and stores it.

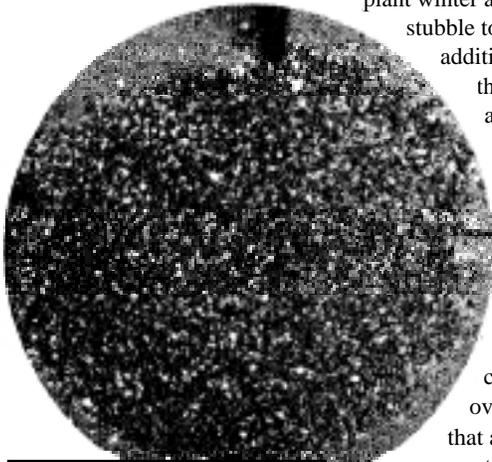
Spoilage is not a problem if products are stored properly. “I’ve tried to keep handling facilities to a minimum,” says Putnam.

At Pack Power Farms, silage is stored in silos built in the ground with a concrete floor and sides. The top of the product is protected with a plastic tarp. Products that cannot be stored in this fashion are kept in a barn with concrete floors. Often, Putnam will sort through grain screenings in this storage unit.

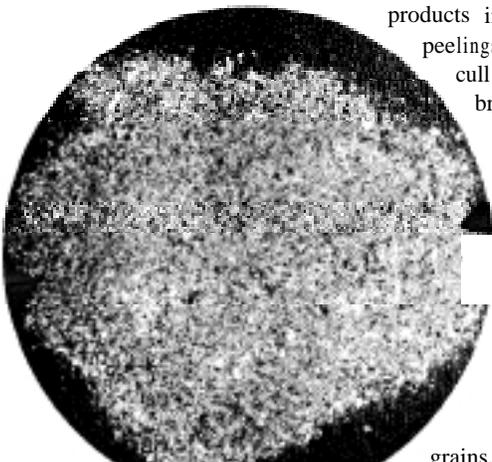
When thinking about handling facilities, Stewart says producers also need to factor in labor costs. He cites cottonseed as an example by saying, “The seeds will not flow through a grain bin so this product requires hand labor in terms of getting it from storage to the cattle. There is going to be a scoop and a bag involved as daily feeding is required.”

Many of the alternative feeds are available only by the ton, presenting a logistical challenge for those interested in using these sources.

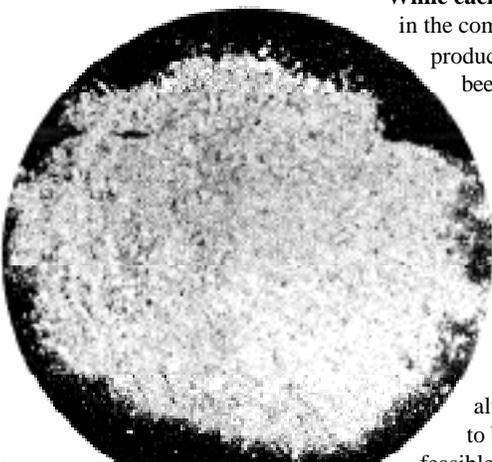
“With the average herd size in Georgia at 27 head, the typical producer will have to use a little bit of imagination or



BREWER'S DRIED GRAINS



CORN GLUTEN FEED



PEANUT HULLS

have some type of cooperation with a neighbor to take advantage of these potentially cheaper feeds," says Stewart.

Another challenge of

alternative feeds is the variability of the quality Putnam says there is little consistency in the products he obtains. He cites grain screenings as an example of a product with little consistency.

"I'll get some that will be all oats and others that will be from corn," says Putnam.

To overcome this problem, Putnam takes samples from his new by-products and has them analyzed for TDN (total digestible nutrients) and crude protein values. By accumulating the figures over time, Putnam often knows the nutrient value of each product. As a nutritional precaution, he provides supplemental minerals and vitamins to his cattle.

Once Putnam starts feeding his cattle an alternative feed, he maintains them on that feed for long periods of time. "If we're going through the winter with a set of cows, we will put them on a ration of coastal bermuda grass hay and cottonseed. They will stay on that ration at least until they calve in the spring before we move them to a different ration," says Putnam.

Due to differences in the palatability of the products, it can be difficult to keep cattle on feed if the rations change often, says Stewart. He explains,

"Cattle are not attracted to any new feed. Therefore, we always encourage producers to mix a familiar ingredient with the alternative feed."

Putnam says the only product that has presented palatability problems at his farm is turkey litter. "Sometimes the young calves do not care for turkey litter," he says. Therefore, he uses the litter primarily in the cow rations. His formula is one-fifth turkey litter mixed with four-fifths silage.

TABLE 1 Nutrient Composition of By-product Feeds

Feed	% of Dry Matter						
	DM	CP	TDN	CF	Ca	P	Ash
Cotton Gin Trash	92.0	6.0	44.0	38.0	.6	.20	10.0
Peanut Hulls	91.0	8.5	22.0	63.0	.2	.07	4.0
Corn Stalks	85.0	6.6	50.0	34.0	.5	.10	7.2
Ammoniated Corn Stalks	85.0	13.5	60.0	34.0	.5	.10	7.2
Broiler Litter	78.0	26.0	55.0	21.0	2.5	1.00	22.0
Whole Cottonseed	3.0	22.0	92.0	20.0	.20	.73	4.0
Brewer's Grain	24.0	26.0	81.0	15.0	.30	.57	5.0
Soyhulls	91.0	12.0	80.0	39.0	.60	.17	4.0
Peanut Skins	92.0	17.6	65.0	13.0	.20	.20	2.7

DM = dry matter; CP = crude protein; TDN = total digestible nutrients; CF = crude fiber.
Ca = calcium; P = phosphorus

WHOLE COTTONSEED

Where do you find an alternative feed supply? Putnam began by letting his neighbors know he was willing to use their by-products. "My neighbors know any by-products they don't want I will come get and find a way to feed them to my cows," says Putnam.

Also, producers may obtain alternative feeds by contacting their local processors and finding what feedstuffs are available. Usually, these companies will have a person

designated for the purpose of selling the by-product. For the unusual by-products such as bakery waste, a brokerage firm will likely handle the marketing.

Once the by-product is obtained, Putnam believes it's his job to increase its value. "We try to enhance the value of all these by-products by feeding them to our cattle correctly. We have no control over the price paid for our cattle, but this is one way we can lower the costs of production," says Putnam.

Stewart carries Putnam's thought one step further by challenging producers to plan for the future.

"As hard as it is to generate enthusiasm about feeding brood cows properly through the winter when the return may not be as high as they want, producers need to remember their winter feeding program dictates conception rates and is influencing their gross return in 1998."

