



Feeding Outside the Box

Explore alternative feed options for your herd.

by Heather Smith Thomas

When traditional feeds are in short supply or have become expensive, stockmen often consider alternatives. There are a number of non-traditional feeds that can be used, according to David Bohnert, beef Extension specialist and ruminant nutritionist at Oregon State University's Eastern Oregon Agricultural Research Center at Burns, Ore.

Non-traditional forages

"Some of the non-traditional forages coming into use in this part of the country include teff and triticale," he says. "You can cut these for hay and also graze them. Teff is a warm season

annual grass, similar in some ways to coastal Bermuda grass."

Bohnert says common alternative feeds in the Northwest and in some other regions include grass seed straw, distiller's grains, which have been shown to be a good energy and protein supplement, and baled or grazed cornstalks. Cull onions, turnips, potatoes, carrots, dry beans and other vegetables are available in some areas. Vegetable waste from food processing can be useful, depending on location and how it is fed.

Bakery waste and other wasted food can sometimes be added into cattle rations if cattlemen are in an area where there's a bread-

making factory or a manufacturer of cookies or candy bars.

"Food companies have to get rid of cull products occasionally and cattlemen have fed these," Bohnert says. "You have to be careful how much you feed and have to balance the diet appropriately, but these are all things that can be utilized. A nutritionist here in Oregon once created a ration using cherry pies, candy bars and corn flakes as part of the energy base, and the cattle did fine on it."

The rumen advantage

Bohnert explains that the beef cow has the advantage of a large rumen. "When looking at possibilities, we need to think outside the box," he says. As long as there are no toxins in the feed, the rumen microbes can ferment and use nearly anything as a source of energy or protein. It's important, however, that the product is fed in appropriate amounts.

"This is the wonderful thing about ruminants," Bohnert says. "We can take advantage of their ability to digest low-quality forages that otherwise would never get used, but these often need to be supplemented with protein and/or energy."

According to Bohnert, there are numerous possibilities when it comes to feedstuff cattle can be fed. "Some of the liquid syrup from distillers grains, or from making alcohol, can be useful if you can figure out a way to feed it," he says.

Alternative feeds can help lower feed costs. "The main thing that limits their use is location," he explains. "You must be fairly close to where they are produced or it will cost too much to transport them to your place, especially the ones that have high moisture content like cull potatoes or onions. Otherwise you are paying a lot for hauling water."

Moisture content is also a concern when feeding a product in cold weather. "For instance, a wet vegetable waste may be too frozen to handle, to transport or to feed," Bohnert explains. "But if you can get the vegetable waste all at once and put it in a silo, it could make good silage. You don't need a big silo if you have the ability to bag the feed. It might be worthwhile to purchase a bagger if you know you'll have access to a certain product long-term. Then you can mix it with your low quality grass hay or straw. Once it's fermented it can be fed year round, even in very cold weather."

Wet distiller's grain is a good alternative in some areas, like the Midwest. "Anywhere there's an ethanol plant, you might be able to utilize this by-product.



"When you get into some of the regional foodstuffs that may have different moisture content and growing conditions, nutrient levels may be variable. They need to be tested for nutrient content, and then you can work them properly into a ration, or have your extension agent or a nutritionist help you formulate a diet that will be appropriate."

— David Bohnert

But if you live more than 50 miles away, it becomes less economical because of transport costs," he explains. Not every operation can use wet distiller's grain effectively.

Test alternatives

When exploring alternative feed sources, cattlemen are encouraged to consider potential contaminants or toxins.

"If you're using something like turnips or camelina meal you need to think about glucosinolates which can affect thyroid function," Bohnert says. Camelina meal is a by-product of processing camelina seeds for oil extraction in biodiesel production. This oil meal may contain up to 20% fat and, normally, about 35% crude protein.

"Another alternative feed in our region is grass seed straw — the aftermath from growing grass seed," Bohnert says. "If it's fescue or perennial ryegrass, it may contain endophyte fungi, which produce toxins. People who graze pastures or put up hay using these forages often have the same problem, which can also occur with any plants that might have ergot alkaloids."

These can cause potential problems with reproduction

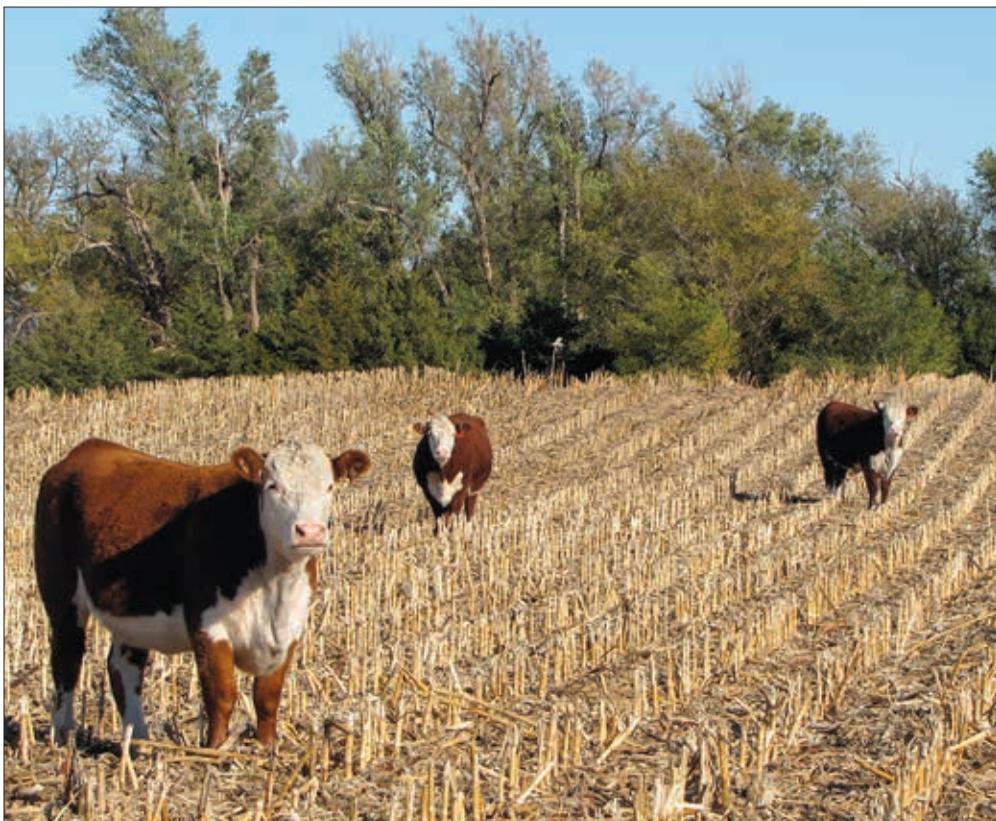


PHOTO COURTESY VERA SCHULTZ

or interfere with proper blood circulation to the extremities. In winter poor circulation may result in frozen ears, tails or even feet.

“A few years ago one producer here lost nearly 600 cows,” he says. “He was feeding fescue grass seed straw and didn’t have it tested. When weather got cold, the cows froze their feet. When using alternative feeds, you need to be aware of things like moisture content, and potential concerns about toxins or contaminants like mold. For example, corn can have deadly aflatoxins, and other feedstuffs are also apt to mold if they are wet.”

Producers considering a feed source that they’re unfamiliar with should get advice on testing it from their university Extension service. “Many of the alternative feeds should be tested. Distillers grains are a good source of energy and protein but can have high sulfur levels, which can cause ‘polio’ in cattle,” says Bohnert.

Storage situation

Storage is another issue with some alternative feeds. Beef producers should ask themselves: How will wet feed be stored if it’s not delivered every day? Can it be stored in a grain bin or silo?

“Distiller’s grains contain some fat and tend to bind and bridge in a grain bin, which means someone has to get in there and knock it down, which can be dangerous,” Bohnert says. “There are many things to think about when choosing a feed you haven’t used before.”

Cattlemen should also learn how to properly feed the alternative choice. For example, Bohnert says, “When feeding turnips or cull potatoes, there’s some risk for choke and you might want to drive over them with a tractor to break them up a little. Distillers grain is best fed in troughs because you lose too much if you feed it on the ground.”

Bohnert says one producer he has worked with uses old belting. “You could put this along a fence so the cattle could only have access to one side of it to minimize trampling and walking over the belting and feedstuff. In the Southwest we fed cubes with a feeder on the back of the pickup or trailer that lets the cubes fall on the ground as we drive along. A person could do this with distillers grain along the fence, on top of thick belting to keep it out of the dirt.”

Feed bunks can also be inexpensively constructed. Bohnert recalls when a study on distiller’s grain as a feed source was being conducted at Oregon State University, and the researchers acquired old torpedo tubes that the government was getting rid of. “These were aluminum, lightweight and made great feed bunks,” Bohnert says.

Quantity and quality

When using a non-traditional feed, producers must figure out how much to give the cattle. “Some alternative feeds can be fed in substantial amounts while others should be fed in limited amounts because of the fat content or other factors,” Bohnert says. “They should be limited to a certain portion of diet, but you don’t always know how much.”

Many alternative feeds are not routinely fed, so there’s not a lot of data on their nutrient content and no established criteria for how much you should feed.

“By contrast, we have a very good idea about the nutrient content of common feedstuffs such as corn, barley and soybean meal,” he says. “When you get into some of the regional foodstuffs that may have different moisture content and growing conditions, nutrient levels may be variable. They need to be tested for nutrient content, and then you can work them properly into a ration, or have your extension agent or a nutritionist help you formulate a diet that will be appropriate.”

Assumptions shouldn’t be made on how a certain feed will work until moisture and nutrient levels are known. If the feedstuff contains mostly water, the cattle would need to consume more and they may not do very well on that feed.

“I know one producer who wanted to feed onions and haul them from the Ontario area over here, to Burns,” Bohnert explains. “He was thinking it would be a good deal, and actually had a nutrient analysis conducted. But when we calculated how much dry matter he was getting per ton, we realized he could buy alfalfa hay cheaper, especially after figuring the hauling costs.”

He adds that cattlemen should look at all the costs and compare appropriately. “When hauling 10 tons of onions, you may only have two tons of dry matter,” he says. “With alfalfa hay, you might have eight tons of dry matter



PHOTO COURTESY DAVID BOHNERT

in a 10-ton load. You have to calculate it by dry matter, to see if it’s actually feasible to feed or supplement with a certain type of product. If you are using it as a supplement, do it on the energy or protein basis.”

If cattle have some form of roughage as a filler, even alfalfa hay works well as a supplement to balance the ration. “Even with alfalfa high priced, when you compare it with some of our other supplement options, it may still pencil out because currently most of them are higher priced as well. In our area, alfalfa is still very competitive with soybean meal and some of the other protein supplements,” Bohnert explains.

Feedstuffs should also be researched before a purchasing decision is made. “Is there any data available on this product, or any university research? Have your neighbors fed it? Talk to someone who has experience with it to get some kind of guidelines on how to feed it. You may find something about the feedstuff on the Internet but still might want to talk with your county agent and find more information, and find some way to filter the ‘real’ information from the unreliable. Otherwise you may find someone claiming a certain feed is the best thing in the world, but they’ve never fed it,” Bohnert says. “Do your homework to see if there is any research available on the product you are looking at.”

Reliable supply

Another consideration when deciding to use a nontraditional feed as part of a ration for cattle is to ensure a continued supply will be available.

“You may want to consider a purchase agreement,” Bohnert says. “In Northeastern Oregon some producers have run into a problem with figuring out consistent supply of feedstuffs. Let’s say you are interested in using potato waste, and the potato plant may say you can have their potato waste, but you have to take it all, every day. So you decide to take it all, and base your ration on this product.”

He adds, “Then you feed it for a few weeks, and the potato plant then tells you they don’t have enough anymore or they are changing the product. You’ve just based your long-term nutritional plan on this product and suddenly don’t have it. If you are counting on a certain foodstuff long-term, it’s good to have a purchasing agreement established with the company you are buying it from. If you are just buying a load or two, it’s not such a big issue. It all depends on your situation.”

While there’s no magic formula or an alternative feed that will work for everyone, Bohnert says it pays to look around and see what’s available in the area.

“Hauling, with diesel prices so high, is a big factor,” he explains. “You can’t afford to haul anything very far. Unless you live near a railhead, you won’t have cheap hauling. You need to find something grown locally that a cow could eat. It may be something next door that you haven’t thought about, or that you were not aware might be available. It might be something someone has been composting, or needs to get rid of, and you could utilize it. If you see someone producing something that cattle might be able to eat, talk to them.” **HW**

“Many of the alternative feeds should be tested.”

— David Bohnert