

Training Cattle to Eat Weeds

by Troy Smith

Isn't it a shame that weeds grow so fast and so well? Even during drought, when good grasses suffer, many weed species seem to thrive. It's too bad cattle producers have to invest in mechanical and chemical control methods, trying to rid pastures of pesky plants that grazing animals shun. It's a shame, because many, if not most, broadleaf and grassy weeds are just as nutritious as the forages cattle favor.

Analysis shows many common weeds pack as much or more protein punch than cultivated forage crops. The protein content and digestibility of green and growing weeds often compares with that of alfalfa. Most winter annual, summer annual and perennial weeds would satisfy the crude protein requirements of beef cattle. Considering their high leaf surface areas, relative to stems, many weed species could produce a significant volume of forage too, if the cattle would eat it.

Many cattle folk have seen cattle prune the buds or blossoms from weedy plants. And some grazing managers apply prescribed grazing strategies to make animals eat targeted weeds. In many situations, however, cattle are too selective to put a dent in a healthy crop of weeds. Kathy Voth, a Loveland, Colo.-based animal behaviorist and consultant, says it doesn't have to be that way. Since 2004 Voth has been teaching cattle to be less picky and consume more of their pasture smorgasbord, including the weeds.

Over the last nine grazing seasons, Voth has visited stock farms and ranches in seven states and two Canadian provinces



to train grazing animals to eat various species of weeds. She shows cattle producers how to apply the step-by-step training process she has developed. It's based on knowledge Fred Provenza and his Utah State University colleagues gleaned from researching how animals choose what to eat.

Why cows eat what they eat

According to Voth, the research suggests animals first learn from their mothers. Calves will learn to graze the same plants their dams graze. They'll learn from other

cattle too, but their mothers are the primary influence.

Secondly, animals choose foods on the basis of palatability. When preferred foods become scarce, they will sample new things. The "decision" to eat a new food again is based on "feedback" from the digestive system to the brain regarding the nutrients and toxins in the particular food.

"The brain matches feedback to the taste and smell of a food and then categorizes that taste and smell as good or bad, based on its nutritional value," explains Voth. "The brain considers the changing nutritional needs of the animal and adjusts how much and what kind of food the animal eats to take advantage of the nutrients and toxins in a food.

"In general an animal eats more of foods high in nutrients and less of foods low in nutrients or high in toxins. So flavor is based on palatability, and not

the other way around. Foods taste good or bad because of the nutrients or toxins in the plant and the animal's physical condition. As an animal's physical condition changes, so do the kinds of foods it prefers."

The training process

Voth's method of training animals to eat a particular weed species takes eight to 10 hours spread out over a seven-day period. Her tools include empty plastic supplement tubs (250-lb. size) and eight different types of feeds known to be highly palatable.

Voth uses various types of bagged feeds available at local feed stores. They could include grains and pellets or cubes made from alfalfa, beet pulp, distiller's grains and other ingredients. Variety is good.

"Pick things that have different flavors, smells, sizes, shapes and textures," advises Voth. "By introducing lots of different things, animals will get used to the idea that food can come in different forms. I use one 50-lb. bag of feed, per 25 animals, at each feeding."

During the first four days of the training period, cattle trainees are fed in the morning and again in the afternoon or evening. A different type of feed is introduced at each feeding. Voth says it's important to develop a routine. It helps to feed them at about the same time each morning and each night with the same person(s) driving the same vehicle and doing things in the same way. She also recommends calling the cattle to feed by voice or car horn, for example. This helps build expectation among the trainees.

"In effect, you're creating a "language" that includes visual and audible cues telling my trainees, 'Here they come again. I bet they're bringing good stuff! We should run over there and eat whatever it is,'" grins Voth.

Day five is the feeding when the targeted weed will be introduced to the trainees, so a



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supply of that plant will have to be picked. However, Voth puts nothing in the tubs that morning. She says skipping one feeding actually helps keep animals coming to the tubs and actually reinforces the learning process. Voth cites behavioral research showing that when animals receive an intermittent reward for performing a certain action, they will keep trying until they get the reward. For example, a laboratory rat can learn that a feed pellet will appear every time he presses a lever. If the rat later receives his reward only part of the time, he will still take every opportunity to press the lever, in anticipation of the reward.

“Translated to the cattle training, when I skip that morning feeding, I start the process of ensuring they don’t quit coming to the tubs,” explains Voth.

For day five’s evening feeding, Voth places about half a bag of familiar feed in each tub along with some of the targeted weed species. A small amount will do — just enough so they can sample the weed. Trainees may not eat all of it, but that’s okay.

On day six Voth provides an afternoon feeding of about one-quarter bag of familiar feed per tub mixed with more of the targeted weeds. On day seven the tubs are loosely filled with weeds only. In Voth’s experience, if cattle will eat weeds from the tubs, they will also start grazing those same weeds in the pasture. Voth says trainees may even start grazing the targeted weed soon after it was first introduced to the feeding tubs.

She advises producers to look for the evidence. By observing what cattle are grazing, producers may see that the number of times weeds are fed in tubs can be reduced.

“Watch for bitten off leaves and stems,” suggests Voth. “As soon as I see evidence of grazed weeds, I end the training.”

Voth tells producers to train cattle to eat one weed species at a time. Conduct training early in the targeted weed’s growing season, rather than after weeds become overly mature. If producers wish to train the cattle to graze more than one targeted weed,

another species can be introduced as soon as cattle start eating the first one. It usually isn’t necessary to start the process over from the beginning. Often, just throwing some of that next targeted weed into the tubs is enough to get them to sample it. However, Voth and the producers she’s worked with usually find that “educated” cattle will start, on their own to sample some other types of weeds while grazing.

In the beginning, Voth often trained cattle in a dry lot setting, but she now recommends conducting the training in a pasture where they can start grazing weeds as soon as they develop a taste for them. Since calves learn from their mothers and all cattle are life-long learners that copy their herd mates, the trained cattle will teach “uneducated” cattle that weeds are an acceptable part of the forage mix.

Voth has trained up to 110 cow-calf pairs, but smaller groups — say 25 or 50 — are easier, if only because weeds have to be collected and fed in tubs during training. She recommends training groups of at least 10 or 12 animals, since competition for feed in the tubs is a factor. For practical application, a producer might consider training groups of breeding heifers.

Training can be accomplished with portable feedbunks, but Voth says plastic tubs offer advantages. They are easy to handle with little if

any extra equipment. Cattle can’t see what’s in a tub until they stick their heads inside. And because only a few animals can put their heads inside at the same time (usually three cows or yearlings), feeding in tubs spurs competition for the feed, including the weeds placed there.

Realistic expectations

When producers decide to train cattle to eat

weeds, Voth advises them to have realistic expectations. Typically, cattle will graze weeds a little bit at the start, but consumption should increase over time. As cattle become more “open-minded” and consider weeds to be palatable forage, they often graze them down to a similar height as the other forages they are grazing.

With regard to poisonous weeds, Voth does not recommend targeting



Training cattle to eat weeds is a simple process using empty supplement tubs.

highly toxic plants. She advises producers to become familiar with the weeds common to their locality and target weeds that can safely become part of a grazed forage diet.

Voth says all plants contain some toxins and relatively few species are extremely dangerous to cattle. Most cases of toxicosis occur when cattle consume too much of certain toxic plants because of a lack of other forage. Research shows, says Voth, that when there is adequate mixed forage available, cattle have the ability to vary their diet according to the levels of nutrients and toxins present in the plants.

Applying Voth’s method, growing numbers of producers have reported success in training cattle to eat numerous species of troublesome weeds. The list includes various thistles, spotted knapweed and even leafy spurge. Consequently, Voth is frequently asked whether grazing of

weeds has had a significant impact on subsequent weed populations. As many product advertisements state, actual results may vary, depending on overall grazing management.

But Voth’s method really isn’t about killing weeds. It’s about taking advantage of a potential forage source. She cites economist John Morley’s findings that, based on average pasture weed populations, if a producer’s cattle eat just 70% of the available weeds, that producer would have about 43% more forage.

“People often ask if teaching cattle to eat them will eradicate weeds,” says Voth. “If cattle eat them, does it matter?” **HW**

Editor’s Note: More information about training cattle to eat weeds can be obtained from Kathy Voth’s website, livestockforlandscapes.com.

