

Livestock for Landscapes' Lessons From the Field

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We're Thrilled With Thistle!

Whenever I tell folks that I've trained lots of cows to eat lots of different kinds of thistles, the first question I get is "Don't the spines/prickles hurt them?" The answer: "Apparently not."

In 6 years of doing this, a trainee has never had a health-related issue as a result of eating thistle. Thistle-eaters gain weight at rates equal to or better than their non-thistle eating counterparts, they breed back, calve successfully, and teach their offspring to eat the weeds too.

Trained cows start at the top and chew their way down to the bottom of thistles. I've walked into trainees' pastures to look for Canada thistle, only to find that every plant has been bitten off even with the grass. Finally, a herd I taught to eat late-season diffuse knapweed decided on its own to add Canada and musk thistle to their diets.

As with any plant, there are cautions to training cows to eat thistles. Canada thistle is a nitrate accumulator, so I have to allow time for the rumen to adjust and I make sure that animals are never put in a solid stand of that weed.

I highly recommend thistles as a forage. They've got good nutrition, are generally available from spring through fall, and are very resilient!

Cows Beat Back Brush

Cows are grazers, goats are browsers, right? Not if you've been paying attention.

Cows that I've trained to eat weeds have also eaten a lot of brush: Coyote brush in California, willows, wild rose, and more in Montana. I attribute this to the training broadening their idea of what forage is. Other folks share with me that their cattle eat blackberry, and multiflora rose.

With all this evidence that cows are much more than grazers, I started looking into nutritional values for the brush species that bother us most - those things we think of as weeds that "ruin" our pastures. Turns out they're nutritious!

Researchers in Wisconsin took a look at this in 2001. Their 2-year experiment found that cattle grazing could be used to "open up" and restore overgrown oak savannah. They used 6 cow calf pairs in June, July and August in two treatments: 1) one day per acre per month, and 2) three days per acre per month. The cattle spent 34% of their time grazing brush, 35% grazing forbs, and 29% grazing grass. A photo comparison of the control pasture and a grazed pasture showed that the brush layer had been practically eliminated after the second year. They found that using 5,000 to 7,000 pounds of cattle per acre provided for reasonable weight gain and shrub removal. You can read more at: <http://www.cias.wisc.edu/wicst/pubs/oaksavarticle.htm>.

If you're doing a lot of work to save your farm from brush and replace it with grass so your cows can eat it, maybe you could look at it from another perspective. We can make lemonade out of lemons, why not pasture out of brush? After all, the definition of pasture is: "Grass or other vegetation eaten as food by grazing animals."

Let us at that Leafy Spurge!

When I first started teaching cows to eat weeds in 2004, I had heard a lot of the same information that you may have heard. Sheep and goats can eat it but cows can't. The sap can cause irritation or burning in the mouth and digestive system, skin irritation and diarrhea.

On the other hand, I knew that cows on the Rex Ranch in Nebraska were eating spurge. So, with a healthy dose of caution, I went ahead with the training.

I taught cows to eat three weeds that year, including Canada thistle and spotted knapweed, and I have to say that the most difficult of the three was leafy spurge. Some cows ate it readily and consumed large quantities. Others were more reluctant. In the end though, all cows ate the weed and we saw none of the harmful effects we had been told to expect.

I tested the trainees in pasture in 2005. They demonstrated that they could and would eat leafy spurge in pasture and I saw no negative effects. They stripped leaves and flowers from the stalks, and once I let them out into the newly mown hayfield adjacent to the trial pasture, they returned to finish off the patch of leafy spurge they had been working on.

In 2007, Lester Pryce, of Saskatchewan's Prairie Farm Restoration Administration, watched my DVD decided to try my training process himself. Since he didn't have all the instructions, it took him a bit longer, but he succeeded. He was surprised at the willingness of the cattle to eat spurge in training and at calf behavior. "If green crested wheat and leafy spurge were put in a tub, often the calves would eat the spurge and leave the grass." When the cattle were left to graze a 30-acre pasture to 50% utilization he found that every leafy spurge plant had been grazed to some degree.

Pryce said of his experiment, "We learned that it is definitely possible to train cattle to eat new

foods using Kathy's cattle training process, and that there may be a possibility for producers to develop a very low cost method for training cattle to consume problematic weeds on our rangelands."

So why do we think that cattle don't eat leafy spurge? I followed the citations back to one source, the 1939 "Poisonous Plants of the United States" by Walter C. Muenscher who related a story of leg hair loss on horses working in spurge infested grain fields. There was no citation for the story and it wasn't clear if it was actually *Euphorbia esula* that he was describing.

Another reason we may have the wrong idea about leafy spurge is that we haven't always understood the important role variety plays in allowing animals to process nutrients and toxins. Thus, in some experiments, cows may have been accidentally given too much spurge. Negative effects were attributed to the weed, not the quantity or lack of variety. In fact, my 2005 cows demonstrated that the more variety they had, the better their spurge consumption.

Finally, sometimes we have too easily taken the cow at her word. If she doesn't immediately eat something, we have assumed it is unpalatable without taking into account the role of learning and neophobia in animal diet choices.

One last point: in my search to find out why leafy spurge was so harmful I found a paper by scientists who actually looked for the harmful effects supposed to be caused by leafy spurge sap. They found no lesions in "nasal passages, oral cavity, tongue, esophagus or viscera" of animals who had eaten leafy spurge.

When something you think doesn't add up to what you've observed, it's time to look more closely, read more, and share what you've learned with others. In the words of Mark Twain, "It ain't what you know that gets you into trouble. It's what you know for sure that just ain't so."

Maybe it's time for us to take another look at leafy spurge.