



Livestock for Landscapes

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Let's Talk Leafy Spurge for Cattle Grazing

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Leafy Spurge (*euphorbia esula*) is a Eurasian invader that is spreading at a rate of about 14% per year. In some places it has taken over entire pastures and cattle no longer graze there.

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. This basic sentence is included in most texts on leafy spurge.

On the other hand, I knew that cows on the Rex Ranch in Nebraska were eating spurge. Ranch Manger John Young said they discovered this after marking spurge to be sprayed once the cattle had been moved to a new pasture. When they returned, the spurge was grazed to the ground. Young thinks that their high-intensity, short duration grazing system may have encouraged the cattle to try the weed, and since it doesn't grow in monocultures there, cows can mix it with other forages, reducing any potential harmful effects.

So, in spite of the science, but with a healthy dose of caution, I went ahead with trying to get cows to eat leafy spurge. 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.

In 2005, when I was getting ready to try the cows and their calves in pasture on leafy spurge, I first gave it to them in dry lot in their familiar black tubs. It seemed that cows that ate well had offspring that ate well. Some calves did have loose stools after eating the weed and the grain we introduced them to. But because of the circumstances, we were not able to determine the cause of the problem.

By the end of the summer, the cows had demonstrated that they could and would eat leafy spurge in pasture and I was still seeing 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 trail pasture, they returned to finish off the patch of leafy spurge they had been working on. Though I have no actual data, I observed that when the cows had more variety they ate more spurge, and when I put them in trial pastures with less variety, they ate less leafy spurge.

It's not just cows at Rex Ranch and I who think leafy spurge is edible. In 2007, Lester Pryce, Saskatchewan's Prairie Farm Restoration Administration Community Pasture Land Manager, watched my DVD at a meeting and decided to try my training process himself with some Angus heifers and leafy spurge. Since he didn't have all the instructions, it took him a bit longer, but he had success. 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 does the science tell us differently? One reason may be the same thing that makes science so good: reliance on the works and information of others. In this case, all the citations I found eventually pointed 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. He provided no citation for this story, which

has been repeated numerous times, thus I wonder if we started with inadequate knowledge.

Another reason that science is wrong 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 were "overdosed" with spurge. When they got diarrhea or went off feed, it was attributed to the weed, not the quantity or lack of variety.

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. It would be like me saying, based on my observations, that only macaroni and cheese and hotdogs are palatable to 4-year-olds.

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.

My whole training process is based directly on the discoveries of many dedicated scientists, so I would never suggest that we ignore their information. Rather, when something 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 what we thought we knew for certain about leafy spurge.