

News Column

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## FEEDING GRAIN TO RUMINANTS

When I opened the gate to turn my ewes and ram out to graze milo stalks, bean stubble, and volunteer wheat on November 14, I knew I'd have a few sleepless nights. For some reason there were more milo heads on the ground this year than usual.

I checked carefully for a couple of days, counting to be sure the sheep were all alive, and checking their manure to see how much grain they were consuming. Then I quit worrying about them. This time of year it isn't unusual for me to leave for work in the morning when it is still dark, and return home after dark. They're right by the house, but some days I didn't even see my sheep.

Then on a Saturday morning almost three weeks later, as Ryan and I were leaving for a youth basketball tournament in Wichita, I noticed the sheep had finally found the milo stalks. Until then, they had spent all their time grazing volunteer wheat and picking up soybeans. Now I was worried again.

It was dark when we got home on Sunday evening, so it was Monday evening before I walked the pen again and,...hallelujah, they are all alive.

There is no question they consumed more grain in one shot than they should have though. Where there should have been manure pellets, or maybe soft piles, I found puddles. That's not what you want with sheep and is a definite sign the switch from roughage to concentrate was way too fast.

OK, so we all know that switching from hay to grain too quickly is a bad idea. But, if we work them up to it slowly, then cattle and sheep can tolerate high levels of grain in their diets.

Low grain prices might make you wonder if it would be cheaper or easier to feed more grain and less hay to your cow herd. Whether it is cheaper or not will depend on hay prices, but one thing we know is that you shouldn't go halfway. You need to either feed mostly hay or mostly grain, not half and half.

Cattle and sheep are ruminants. As ruminants, their digestive systems are able to break down relatively low quality feeds (roughage) and convert them to valuable nutrients on which they can survive and grow. Rumen microbes digest the cellulose in forages best when the rumen pH remains in the range of 6.0 to 6.5.

The more grain that is added to the diet, the more likely the pH will drop below 6.0. And, when the pH is below 6.0, then the rumen doesn't make the most efficient use of forages. The important detail to remember here is that you can feed about 25-30% grain (on a dry matter basis) and still have the rumen functioning to digest forages efficiently.

When grain consumption gets above 25-30% of the diet, then the pH starts to drop and neither the forage or the grain is digested most efficiently. On the other end of the spectrum, we have feedlot diets that are 75% or more grain, causing the rumen pH to drop to the low 5's, or even high 4's. When the pH is that low, grain is digested pretty well, but forage isn't.

To put some numbers to this, let's take a 1400 pound lactating cow consuming 2.5% of body weight in dry matter. That's 35 pounds of feed. Twenty-five percent of 35 is 8.75. So, 8.75 pounds is the maximum amount of grain that should be fed per day if we want to keep the cow utilizing forages efficiently.

In dry years, when hay is short, we sometimes flip-flop the grain to hay ratio and turn

these cows into feedlot cattle. That works too, if you're willing to limit feed. You could go with something like 70% grain and 30% hay. However, because of the higher nutrient density of the grain, you'd need to cut back the total pounds fed to avoid creating super fat cows.

The key number to remember today is 25%. Keep the amount of grain fed to cows at 25% or less, balance the ration for protein, and provide free-choice hay and you'll be good.

If you have questions, you can reach me at the Riley County Extension Office at 785/537-6350. Or, you can send e-mail to [gmclure@ksu.edu](mailto:gmclure@ksu.edu).

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