NUTRITION NOTES
Innovation + Research from Kent Nutrition Group SEPTEMBER 15, 2014

A BALE OF HAY, A BUCKET, AND A SCOOP

by Ed Creason, Western Region Beef Specialist

How much does a bale of hay weigh? How much can a bucket hold? How big is your feed scoop? Dr. Densil Allen, a retired veterinarian from Knob Knoster, MO recently said, "A bale of hay, a five gallon bucket, and a scoop are not standard measurements." Just take a moment to think about that. We all get into "measuring" feedstuffs in quantities that are comfortable and easy for us. How do we know if our cattle are getting the proper nutrients when we use these measurements?

BALE

What is the size of your bale of hay? Is it a small square bale, a big square bale, a big round bale, or stacked? Is it 4'x5' or 5'x6'? How much difference is there in weight between all of these different bales of hay? How much difference is there in the available nutrients in these bales of hay? A bale of hay can be different sizes and shapes. A bale of hay can have different nutrient density if it is stored outside versus being stored inside, or baled as haylage and wrapped. The quality of hay affects the passage rate of the hay and nutrients through the rumen. Better quality hay actually passes through the rumen faster than poorer quality hay and the cattle are able to absorb more nutrients from the high-quality hay.

BUCKET

How much does your chore bucket hold? Is it a 3-gallon bucket, a 5-gallon bucket, a skid steer bucket, or a tractor loader bucket? How much difference is there in size and the amount of feed stuffs that will fit into the "bucket?" How much difference is there in the amount you are feeding in each bucket you dump? When we look at feedstuffs there can be quite a bit of difference in the weight of feedstuffs in the bucket. A bucket full of soybean hulls weighs quite a bit less than a bucket full of soybean hull pellets. The pellets are in a denser form and aren't as "fluffy" as the regular soybean hulls. A bucket of cracked corn is going to weigh more than a bucket of beet pulp or cottonseed hulls. Just think about the density of the feed and how much difference there is in weight.

SCOOP

What is a scoop? Is it a gallon coffee can, a plastic cup, a plastic feed scoop or maybe it is a scoop from the loader bucket of the tractor? How much difference is there in weight between the different feedstuffs in each scoop? There is still quite a bit of difference in weight based on the density of the feedstuffs we are using. What if you have someone else chore for you? Maybe you consider a scoop to be a heaping scoop and the person doing chores for you considers a scoop that is pretty much full to be a scoop. This would be a little different measurement than you usually use.

Cattle have nutrient requirements and those requirements change at different stages and production phases in their lives. Producers need to be aware of these nutrient requirements and make sure that they are being met so that the cattle can perform as close to the expectation as possible.

If we look at a cow's nutrient requirements, they change every month of the year due to the energy needed for maintenance, pregnancy, or lactation. They also change with the changes in the weather. The colder it gets the more energy it takes just to maintain body temperature or if it gets too hot then the cows spend energy trying to dissipate heat to keep their body cooler.

continued

If we look at Table 1, and the nutrient requirements of beef cows each month after calving, we can see that when they calve their nutrient requirements are pretty high due to maintenance and lactation. As we go out more months, lactation requirements decline and pregnancy requirements increase. In the same way, regular maintenance requirements decrease a little once calves are weaned and lactation is no longer a requirement.

Table 1: Nutrient Requirements of Beef Cows

Months Since Calving												
	1	2	3	4	5	6	7	8	9	10	11	12
NEM required (Mcal/day)												
Maintenance	10.25	10.25	10.25	10.25	10.25	10.25	8.54	8.54	8.54	8.54	8.54	8.54
Lactation	4.78	5.17	4.13	3.1	2.23	0	0	0	0	0	0	0
Pregnancy	0	0	0.01	0.03	0.07	0.16	0.32	0.64	1.18	2.08	3.44	5.37
Total	15.03	15.42	14.39	13.38	12.55	10.41	8.86	9.18	9.72	10.62	11.98	13.91

Mature weight, 1,172 lb; calf birth weight, 88 lb; age at calving, 60 mo; peak milk, 17,6 lb; age of calf at weaning, 30 wk; breed code, Angus; milk protien, 3.4%; calving interval, 12 mo.

Table adapted from Merck Manuals, Management and Nutrition, Nutrient Requirements of Beef Cows

If the cow is at peak nutrient requirements and then we have really cold weather then the nutrient requirements increase more and it makes it more difficult for the cow to maintain her body weight. If we look at a two year old first calve heifer that is still growing while nursing a calf then her nutrient requirements are going to be higher than the five year old cows that are being used for this table. This increase is due to the added energy needed for growth and lactation.

Making sure you know the nutrient content of the feedstuffs you are feeding your cattle, the nutrient requirements of your cattle and if you are meeting those requirements will help your animals perform to the expectations that you have for them. Feed analysis can be done on feedstuffs that you feel you need a better idea of what the nutrient analysis is of that feedstuff. The nutrient requirements of your cattle can be found in cattle resources online, through extension or feed publications or by talking to your extension person or feed representative. These tools will help you be more knowledgeable and help you make sure that you are meeting the requirements of your cattle so they can perform to their potential. “Remember a bale of hay, a five gallon bucket and a scoop are not standard units of measurement.” Without knowing what you are feeding you can over feed or under feed your animals and then they won’t be on the path you have planned for them. I don’t expect you to weigh every bale, bucket or scoop of feed that you feed but have a good idea of what the weight and nutrient analysis is of the feedstuffs you are feeding so that you can meet the requirements of the cattle you are feeding and give them a chance to perform to the expectations that you have for them.

If you have questions about feedstuffs, nutrient requirements or feed analysis please contact your local extension representative or feed representative for assistance.