COW/CALF CORNER

The Newsletter

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Understanding wet hay

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After several years of drought, rain in Oklahoma is allowing cool season forages to grow in abundance. Harvesting and baling cool season crops such as fescue and wheat hay is a challenge during a wet spring. The timing of the rains can make it difficult for cattlemen that are trying hard to put quality hay in the bale for next winter's feed supply. All producers that harvest hay occasionally will put up hay that "gets wet" from time to time. Therefore, ranchers and hay farmers need to understand the impact of "wet hay" in the tightly wound bales.

Extra moisture in hay can cause heat inside the hay bale or hay stack. Heat produced by the bale comes from two sources: **First**) biochemical reactions from plants themselves as hay cures. (This heating is minor and rarely causes the hay temperature to exceed 110 degrees F. Very little if any damage occurs if the hay never exceeds 110 F.); **Second**) Most heat in hay is caused by the metabolic activity of microorganisms. They exist in all hay and thrive when extra moisture is abundant. When the activity of these microbes increases, hay temperature rises. Hay with a little extra moisture may not exceed 120 degrees F., whereas, wetter hay can quickly exceed 150 degrees. If the hay rises above 170 degrees, chemical reactions can begin to occur that produce enough heat to quickly raise the temperature above 400 degrees and the wet hay can begin to burn and cause fires. Be wary of the fire danger of wet hay and store it away from buildings and other "good" hay just in case this would occur.

Heat damage causes hay to be less digestible, especially the protein. Heat damaged hay often turns a brownish color and has a caramel odor. Cattle often readily eat this hay, but because of the heat damage, its nutritional value might be quite low. Some ranchers have reported that "the cows ate the hay like there was no tomorrow, but they did very poorly on the hay".

Testing wet hay may be very important. Determining the internal temperature of large bales or stacks of hay should be done carefully. Make certain that checking the temperature in suspicious

hay is done safely. Read the E-Extension Fact Sheet "Preventing Fires in Baled Hay and Straw" (http://www.extension.org/pages/66577/preventing-fires-in-baled-hay-and-straw#.VV-WALco7L8).

Testing the protein and energy content of stored wet hay will allow for more appropriate supplementation next winter when that hay is fed. Moldy hay could be a source of mycotoxins that could present several health problems for cattle. Many animal disease diagnostic laboratories can examine feedstuffs for mycotoxins or can recommend laboratories that do such testing.

More lessons in beef demand

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Choice retail beef prices jumped over 9 cents per pound in April to a new record level at $640.2 cents per pound, up 9 percent from one year ago and up 22.5 percent from April, 2013. Choice retail beef prices have averaged 12.4 percent higher for the first four months of 2015 compared to last year. The All Fresh retail beef price decreased fractionally to $605.4 cents per pound in April, up 10.4 percent from last year and up 24.5 percent from two years ago. All Fresh retail beef prices have averaged 14.1 percent higher for the year to date compared to the same period last year.

Beef demand has continued stronger than many feared as retail prices surged higher over the past 15 months. In 2014, retail beef consumption was 54.3 pounds per capita, down 3.7 percent from 2013, while All-Fresh retail beef prices increased 13.4 percent. The core of beef demand is the relationship between the (own) price of beef and the quantity of beef consumption. At a given demand level, an increase in beef price is expected to decrease the quantity of beef consumed. By the same token, a decrease in beef quantity is expected to result in higher beef prices for a given demand level. Research has established this relationship, which economists call (own) price elasticity, based on historical data.

In addition to the internal beef price and quantity relationship, beef demand at any point in time depends on a number of factors outside the beef industry. Among the more important of those are the prices of competing meats including pork and poultry. In 2014, retail pork prices increased 10.3 percent year over year, while retail broiler prices were unchanged year over year. Accounting for changes in pork and poultry prices allows for calculation of a beef demand index to indicate net changes in beef demand over time. The demand index provided by the Livestock Marketing Information Center shows that the beef demand in 2014 increased over the 2013 index level and, in fact, was at the highest level on annual basis since 2005. This means that beef demand was stronger in 2014, even after accounting for the beef price and quantity relationship and changes in pork and poultry prices. The demand index for the first quarter of 2015 increased even more compared to the same period last year and was the highest first quarter beef demand index since 1991.

Explaining the strength in beef demand is complicated because so many factors affect demand and because the current level of consumption is historically low. It could be that the entire demand relationship has changed, i.e. beef demand has shifted higher. I suspect that it is more

related to the current level of consumption. Beef demand is less sensitive to higher prices when the quantity available for consumption is so low. With no previous data at these consumption levels, there is no demand research to anticipate the impacts of quantity changes on retail beef prices in this situation. In economists' jargon, beef demand appears to be more inelastic at the current level of beef consumption. That seems to be the principal lesson of beef demand in 2014.

Much of the focus in 2015 has been on the fact that pork and poultry production are significantly higher and, aggravated by weak exports for both pork and poultry along with recent export market closures due to avian influenza, domestic consumption of those competing meats is expected to jump sharply in 2015. Per capita consumption of pork in 2015 is expected to increase over 6.5 percent from 2014 levels. Similarly, 2015 per capita broiler consumption is expected to increase over 6 percent compared to one year ago. And yet retail beef prices continue to push higher, especially relative to the other meats. The ratio of retail beef to poultry prices has exceeded 3.0 for the first time ever for six of the last seven months, meaning that retail beef prices are over three times retail broiler prices. This price ratio has risen sharply since January, 2014 to the current record levels. The average beef to broiler retail price ratio from 2009-2013 was 2.40. Likewise, the retail beef to pork price ratio has risen to record levels in the past seven months as growing pork supplies have weighed on retail pork prices relative to beef. The retail beef to pork price ratio jumped to 1.61 in April on sharply lower retail pork prices. This compares to the 2009-2013 average retail beef to pork price ratio of 1.33. The beef demand lesson in 2015 seems to be that the cross-price effects (cross-price elasticities, to economists) between beef and competing meats is also smaller than expected at current beef consumption levels.

There is concern that retail beef prices cannot be sustained in the face of cheaper pork and poultry. Certainly retail price ratios of beef to other meats are at record levels and the feeling is that they must or will revert to more historical levels soon. The evidence is growing that they may not adjust much as long as beef consumption is record low. Beef production is expected to decrease another 1-2 percent in 2015 but increased net beef imports may result in a fractional increase in per capita domestic beef consumption for the year. However, beef production will grow only slowly through 2016 and into 2017 and per capita beef consumption may actually drop in 2016 if beef exports recover a bit and beef imports moderate as expected. It appears that beef demand is stronger than expected and the potential for cheaper pork and poultry to limit that is less than expected.

On this Memorial Day, 2015, let us all pause a moment to remember those that made the ultimate sacrifice to preserve our freedom! Also we say thanks to those veterans that have returned from foreign and domestic duties. Certainly we express our gratitude to the current members of our military at home and abroad. May they be kept safe and soon come home to family and friends. God Bless America!!