EXTENSION

Ag Insights

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Unexpected Fears in Cattle Markets

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The recent cyber attack on JBS is yet another hurdle in the modern farming space. It is no doubt that consolidation in the packing industry makes this type of event more impactful and damaging. Rightfully, producers and consumers are concerned about the long-term effects of this event on markets moving forward.

On June 1st meatpackers processed 22% fewer cattle than the week prior. By June 2nd that number had improved to 15% and on June 3rd all JBS plants were fully operational. Drovers Greg Henderson reported that JBS had to pay a ransom of $11 million to the cyber attackers in order to achieve full operational status and that ransom was paid in Bitcoin.

In mid May, the August Feeder Cattle contract was in a bull market. There was resistance due to increasing grain prices, but the market was healthy overall. Shocks will always affect a market and the recent JBS hacking incident is a stark reminder of these black swan events. A look at technical indicators on recent charts detail a market that is not necessarily trading outside of the expected range. The Relative Strength Index sits near 50 which is right in the middle of the overbought/oversold indicator and does not show any signs of stress.

Technical indicators can break down during periods of high volatility because the trading range is so wide. In other words, they do not do a good job for a producer trying to make day-to-day decisions. Through this whole hacking event, markets did not test the lower limit or bound and recovered nicely. Trade is consolidating, and I look for a new direction to take hold in this market rather soon.

With summer meat demand taking hold expect more firmness in the coming months. Grain volatility will remain a stressor and will fuel price swings throughout the summer. The current trading range appears to bracket $144.500/cwt. and $153.500/cwt. with a nearby support at $147.500/cwt. It is too early to tell how much the JBS event will affect markets, but for Oklahoma cow/calf producers, there are bigger management concerns to worry about.

Native Grass Haying

Josh Bushong, Area Extension Agronomist

When determining if your native pasture is worth haying, first you need to determine what species are currently established. Typically, native pastures consisting mainly of big bluestem, eastern gamma grass, Indian grass, and little bluestem are going to be the predominate species best suited for hay production. Native pastures in western Oklahoma will mostly contain mostly short and midgrass native ranges.

Annual haying is a common practice, but alternating haying and light grazing every other year can be beneficial. Early July is the optimum time of year to be haying native grass pastures for hay. There are some basic production practices to maximize production potential of these hay meadows. Since native hay meadows are a long-term investment, they should be managed in such a way to sustain long-term productivity.

The most important management practice is cutting date. In most years, the optimum cutting date will be between July 1 and 10. Harvesting native hay at this time will achieve a good balance of forage yield and forage quality while also allowing the native stand to recover the rest of the year to sustain production for following years.

The main key to managing any perennial hay field is to maintain a balance between forage yield and forage quality. Time of cutting will be the primary production practice that will determine the forage yield and quality. The maximum forage yield and maximum forage quality hardly ever occur at the same time. Hay tonnage will typically peak in late August, while crude protein and digestibility are usually highest in May.

The second most important management practice is proper cutting height. Cutting height can easily be overlooked, but can be highly detrimental to the life of the stand. Native grasslands should never be cut shorter than 4 inches. Growing points on these grasses are elevated during this time of year. If the growing point is cut off, then production will be greatly reduced the following year.

Cutting height is also important because most of the native grass species need time to re-grow to build root carbohydrate reserves. To sustain a native hay meadow it is recommended to only harvest it for hay once a year. Native grass species grow rapidly through May and June, but will exhibit slow re-growth in July after harvesting a hay crop. In addition to the slow growth, the re-growth is often less palatable as well. Native species have adapted through natural selection for these traits to ensure grazing animals will not exhaust the root carbohydrates prior to winter dormancy.

Field research conducted by Oklahoma State University has shown that forage tonnage can be increased with an application of fertilizer, however it is rarely economical to do so. When adequate moisture is available during spring and early summer, 30-80 pounds of actual nitrogen fertilizer can increase hay yield and crude protein. Herbicide

applications are rarely warranted on native grasslands. If managed properly, there should be a mix of native forbs and legumes that benefit the grass production.

Some small plot studies conducted by OSU has shown an increase in grass production is possible when broadleaf weeds (forbs) are controlled with an herbicide application. However, increases varied depending on growing conditions and thickness of grass stand. Previous mismanagement of the pasture often leads to more weeds. Herbicides such as 2,4-D and/or dicamba are effective when applications are made to small weeds. As weeds get bigger, more costly herbicides are often needed.

Good management practices include harvesting prior to mid-July, leave at least 4 inches of stubble, harvest only once during the growing season, and manage the re-grown forage in the dormant season with either fire or grazing.

For more information about harvesting native grasslands for hay, contact your local Oklahoma State University Cooperative Extension Office. Information can also be found from the OSU factsheet “NREM-2891 Native Hay Meadow Management”.

Should Nursing Calves be Implanted? Does it Pay?

Britt Hicks, Ph.D., Area Extension Livestock Specialist

We are approaching the time that spring-born calves are routinely brought up for branding and the first round of shots. With the increased costs of beef production, technologies that improve the efficiency of production are increasingly valuable. One management input that is very often overlooked is the use of growth-promoting implants preweaning. However, research over the last 50+ years has clearly demonstrated the efficacy and cost effectiveness of growth-promoting implants in beef cattle. A 1997 review of research trials that evaluated the effectiveness of implanting nursing beef calves showed that implanting steer calves with zeranol (Ralgro, 23 trials reviewed) or estradiol-progesterone implants (13 trials reviewed) increased average daily gains by approximately 0.1 lb/day from the time of implant insertion to weaning. In this review, the gain response in heifers was slightly greater (0.12 to 0.14 lb/day). Hence, implanting suckling calves typically increases weaning weights by approximately 15 to 25 pounds.

A 2007-08 USDA survey of U.S. beef cow operations (2,872 cow/calf operations from 24 states) found that only 9.8% of operations implanted some of their beef calves prior to weaning and only 3% of implant heifers are intended to be developed as replacement females. In this survey, only 3.6% of cow herds with less than 50 cows (representing 79% of beef farms and 29% of beef cows) use implants, while 11% of herds with 50 to 100 cows, 16% with 100 to 200 cows, and 18% with greater than 200 cows use implants. In a more recent study, using data from more than 5 million beef calves sold

through Superior Livestock Video Auctions from 1995 through 2009, the percentages of lots of beef calves that were implanted decreased from 64.3% in 1995 to 26.5% in 2009.

Some producers have opted not to implant calves prior to weaning in an effort to enter the “natural” market and receive a premium price at sale compared with implanted calves. However, there is little evidence that implanting preweaning reduces prices of calves. A 2015 study quantified the effect of implant status on the sale price of beef calves marketed through a livestock video auction service from 2010 through 2013. In this study, implant status had no effect on sale price in any of the 4 years of the study. In the three of the four years (2010, 2011, and 2102), not implanting numerically reduced sale price by $0.09 to 0.17/cwt.

Even though, the use of implant technology has declined in cow-calf operations, research has clearly illustrated that the response to growth-promoting implants appears to be as efficacious as it was over 30 years ago. Yet, beef cattle genetics have changed dramatically during this time period. This is illustrated by the fact that the mature body weight of beef cows has increased by 200 to 250 lb over the last 25 years and that calves have greater potential for growth. Thus, 2017 Oklahoma State University research revisited the issue of implanting suckling calves to determine if the response to growth implants has changed over time. The objectives of this experiment were to determine (1) the effect of a Ralgro implant (Merck Animal Health) administered at 30 to 90 days of age on suckling-phase growth rate and weaning weight and (2) the effect of re-implanting with a Revalor-G implant (Merck Animal Health) at weaning on post-weaning performance. In this experiment, a total of 194 suckling steer calves weighing 245 lb at branding (approximately 30 to 90 days of age) from 3 locations were used. At each location, steer calves were randomly assigned to two experimental treatments: implanted with Ralgro at branding and Revalor-G at weaning or not implanted. At one of the locations after weaning, the steers (40 head) were preconditioned for a 44 day period and then grazed winter wheat forage for 98 days. Steers from the other two locations were combined and preconditioned for 49 days and then sold.

In this study, average daily gain (ADG) was 5.7% greater for Ralgro implanted than non-implanted calves during the suckling period (2.47 vs. 2.34 lb/day). The increase in ADG of 0.13 lb/day is similar to the 23-study average (0.10 lb/day) reported in the 1997 review. As a result, implanting resulted in a 17 lb increase in actual weaning weight compared to non-implanted steers (564 vs. 547 lb).

At one of the locations, ADG was not different between the 2 treatments during the preconditioning phase. However, in a wheat stocker phase at this location, implanting increased ADG by 17.5% over non-implanted steers (3.55 vs. 3.02 lb/day) which accounted for nearly 49 lb of additional weight gain over the wheat-grazing stocker period. Final pay weight was increased by 68 lb by implanting. In the preconditioning

period for the other two locations, implanting increased ADG by 35.7% (0.84 vs. 0.62 lb/day.

This data illustrates that pre-weaning and post weaning gain improves when beef steer calves are implanted at branding time and again at weaning. Ralgro growth-promoting implants remain an effective and economical method to increase performance of suckling steer calves, and the response is similar to research results previously reviewed (1997). Even though, the use of implant technology has declined in cow-calf operations, growth-promoting **implants appear to be as efficacious as they were over 30 years ago**. The cost of an implant is about $1 to $1.50 per head. Yet, weaning weight is typically increased by 15 to 25 pounds.

A few points to consider for implanting nursing calves include:

- Several different implants are available. Read the label instruction to determine the appropriate implant to use.
- Implants are not approved for calves less than 30 45 day old. Read the label for the specific implant.
- Do not implant bull calves. Some producers leave bull calves intact until weaning thinking that that natural hormones produced in the testicles increase gains and weaning weight of the calves. However, numerous research trials have shown that implanted steer calves gain at a rate equal to, or greater than, bull calves. Castrating bulls at younger ages (near birth), as opposed to when they are older, reduces overall stress on the calf. The stress and hormonal effects of castration at weaning can reduce post-weaning gain potential and the calf's ability to withstand diseases typically associated with weaning and marketing. Studies suggest that there is no lifetime performance advantage to waiting to castrate calves until weaning, but there is a high probability of receiving lower prices when marketing intact calves through conventional channels (about $5 to $10 per cwt lower prices).
- Most studies have demonstrated that implanting had no negative effect on future reproductive performance of heifer calves when a single implant was administered according to label instructions at 2 to 3 months of age. However, re-implanting replacement heifers increases the risk of reduced pregnancy rate.

Understanding Heat Stress for Livestock

Dana Zook, Area Extension Livestock Specialist

Without much warning, a cool wet spring gave way to the heat and humidity of summer. These high temperatures are great for getting wheat harvested but they can be hard on livestock. All levels of heat stress will impact animal performance to some degree, and they can be realized in the form of decreased weight gain, reduced reproductive efficiency, altered animal health and behavior. Heat is a reality but there are things that can be done to prevent severe heat stress in livestock. This article will focus on cattle, but the information will be applicable to most other livestock species.

First let's discuss the basics of heat stress. Heat stress is a condition where an animal's core body temperature rises beyond a level that they can manage with heat dissipation efforts. An animal's upper critical temperature (where heat stress is initiated) will vary from one animal to the next and is dependent on breed, body condition, production stage, fly pressure, hide color, and condition of hair coat. Remember that livestock do not only feel the impact of ambient temperature, but also the affects of humidity and wind speed. These hot, humid days with little wind are the perfect recipe for heat stress. During high temperatures, cattle will adapt both physiologically and behaviorally to reduce their heat load and some natural behavior will decrease in favor of heat dissipation efforts. Some natural behaviors that are negatively impacted are grazing, feed intake, grooming, and calf care.

So how do cattle cope during the heat? One of the best methods to cool down is to seek shade. Animals without access to shade will orient their bodies to reduce sun exposure and stand rather than lie down to increase cooling. Sweating is also key to evaporative cooling but cattle's ability to do so is much less than that of humans and horses. In addition, feed intake may go down during periods of high temperatures to reduce the amount of heat produced from digestive processes. Panting behavior is also common during the high temperatures but animals in more severe stages of heat stress will slobber, lack coordination, and will be hard to move. Producers should make all effort to minimize any stress for these animals if they are to overcome this state of heat exhaustion. Heat stress may also cause compromised immune function to a certain degree causing animals to be more at risk for disease.

Temperatures above 90 degrees are a reality in the Oklahoma, so what can producers do to ease the impact on livestock? During hot temperatures (and all situations, really), the most important resource for all animals is a clean source of drinking water. Multiple watering locations are encouraged be that a natural water source such as a pond or automatic water. Make sure there is enough watering space and volume of water during times of heat stress. A beef cows happy spot on the temperature scale is approximately 65 degrees and a good rule of thumb is that every 10 degrees above this level will increase water needs by 1 gallon. For example, a 1300-pound lactating cow

will require 15 gallons of water on a 65-degree day and 18 gallons of water on a 90 degree day.

Shade is one of the most effective ways to decrease overall heat load on cattle. Shade structures should be constructed at least 13 feet high to produce functional shading and maintain airflow. Shade reduces solar radiation and ground temperature in the exposed area. Remember, not all shade is created equal. Airflow and moisture management in the shade must be maintained. Don't forget fly control during heat also. Cattle exposed to intense fly pressure will have increased body temperature which adds to the stress. Control flies with sprays, fly tags, pour-on's, and insect growth regulators (IGR) to reduce this aspect of summer stress. Finally, if cattle processing must be done during the heat of the summer, plan to have a majority of cattle worked by 8AM.

Take these tips to mitigate heat stress this summer in your cattle herd. Don't forget to keep the humans in your herd hydrated too! For more information on managing heat stress in livestock, contact your local county OSU Extension office.

Extension Experience – Insights into Oklahoma Agriculture

The Northwest Area Extension Staff would like to announce the creation of our new podcast *Extension Experience.* The *Extension Experience* podcast is brought to you by Josh Bushong, Trent Milacek, and Dana Zook. Each week they provide perspective on Agriculture topics and offer insight from our experience working with Extension Educators and Producers across Oklahoma.

The *Extension Experience* podcast is available on Spotify, Google Podcasts, and Apple Podcast platforms. You can also access the episodes on spotlight, http://spotlight.okstate.edu/experience/.

We hope you consider listening to Extension Experience.