

Noble County Oklahoma Cooperative Extension Service
Chad Webb
Extension Educator Ag/4-H/CED
Kylie Sherrill
Extension Educator 4-H Youth Development
Vacant
Extension Educator 4-H/Family & Consumer Sciences
Barbara Ebersole
Extension Administrative Support Specialist

The Noble County Courthouse and OSU Extension is open to the public. Entrance available only through the west door. Your temperature will be checked prior to entering which must be less than 100.4° to enter. Appointments are encouraged and preferred. We continue to practice social/physical distancing, as we meet the needs of OSU University and Noble County OCES. Thank you for understanding.

Oklahoma State University, in compliance with Title VI and VII of the Civil Rights Act of 1964, Executive Order 11246 as amended, and Title IX of the Education Amendments of 1972 (Higher Education Act), the Americans with Disabilities Act of 1990, and other federal and state laws and regulations, does not discriminate on the basis of race, color, national origin, genetic information, sex, age, sexual orientation, gender identity, religion, disability, or status as a veteran, in any of its policies, practices or procedures. This provision includes, but is not limited to admissions, employment, financial aid, and educational services. The Director of Equal Opportunity, 408 Whitehurst, OSU, Stillwater, OK 74078-1035; Phone 405-744-5371; email: eeo@okstate.edu has been designated to handle inquiries regarding non-discrimination policies. Any person who believes that discriminatory practices have been engaged in based on gender may discuss his or her concerns and file informal or formal complaints of possible violations of Title IX with OSU's Title IX Coordinator 405-744-9154.



Chad Webb
Noble Co. OSU Extension
300 Courthouse Dr., #13
Perry, OK 73077
580-336-4621

Chad Webb

The Noble County Fair Board and Noble County OSU Extension say THANK YOU TO ALL WHOM ATTENDED AND SUPPORTED THE 2020 NOBLE COUNTY FALL FAIR!



Agriculture News and Updates: October 2020



NOBLE COUNTY EXTENSION

Fighting the Spoilage Battle with Proper Bale Storage

Dana Zook, Extension Area Livestock Specialist

Depending on who you ask, the term “forage production” will have a different meaning. For some livestock producers, forage production is defined as growing forage for grazing. Other producers consider forage production as growing forage that will be harvested for hay in a round baler. Most producers utilize both sources as feed sources for their livestock. As one would guess, since the invention of the round baler in the 1950’s, the US has seen a significant increase in hay production. More specifically, the Livestock Marketing Information Center reported Oklahoma produces 285% more tons of hay (non-alfalfa) today than in 1974. Yes, some of that production goes to other animals but the bulk of it is used for cattle production. For livestock producers, round bales are extremely convenient. Convenience in this case comes at a cost. Harvested hay will always be more expensive than grazed forage and deficiencies are present in storage, transport and feeding. Today, I wanted to take some time and address losses that can occur during round bale storage.

Since the creation of the first-round bale decades ago, livestock producers have been fighting the battle of spoilage. Even when put up right with low moisture and proper density, spoilage can occur. So how do we fight this spoilage battle? Bale storage has a lot to do with the amount of spoilage that can occur. Keeping rain and snow away from the bales is a big factor and bales that are in a barn or are protected from the elements have very low spoilage loss (2-10%). But not every producer has the luxury of a hay barn and other things can be done to help preserve quality. For most producers, outside storage is the most used method.

There are two keys to making and storing quality bales. Baling smart is the first key. Creating a dense bale with a tight core will keep the bale from squatting. This will reduce the amount of hay exposed to the ground. Bale at the correct moisture to preserve leaves and wrap with net wrap. Storing smart is the second key. Store the bales on a well-drained, gradual slope. The bales should be butted together tightly in rows in a North-South direction. Air circulation is important and so keep each row of bales 3-4 feet apart. Do not stack the bales or put them in an area with shade. Sun exposure and air circulation will ensure drying after wet weather events.

As you can see, getting rid of water is the key to all this. Another tip to help shed rain is creating a good “thatch” on the bale. “Thatch” is described as a layer on the outside of the bale formed from leaves on either grass hay or alfalfa. A good thatch layer will allow rain and moisture to be shed from the bale and ensure drying. There are also benefits to net wrap rather than twine in the ability of the bales to shed water. Twine wrapped bales will not have a good thatch because leaves are knocked off the exterior of the bale as the twine is wrapped in the baler. Net wrap only requires the bale be turned a few times within the baler leaving less damage to the bale’s exterior. The addition of net wrap to a well thatched bale will greatly improve the quality of the stored hay, even when exposed to the elements.

My thoughts on this topic came from a recent presentation about round bale storage by Dr. Kevin Shinnars who is an Ag Engineer at the University of Wisconsin – Madison. If you are interested in this excellent webinar go to <http://beef.okstate.edu/> and look for the webinar titled, *The Way You Stack Round Bales Matters*. For more interesting webinars related to beef, sign up for OSU Extensions Beef Webinar Series titled *Ranchers Thursday Lunchtime Series*. The upcoming series focus is Feeding Alfalfa.

Can I Afford to Expand?

Trent Milacek, Area Ag Economics Specialist

Producers often ask the question, “Can I buy a piece of land and pay for it running cattle or farming?” This is a simple question that is often met with a simple “no”. The reason the answer is no is much more complicated.

The easiest and least expensive way to expand a farming operation is through leased/rented ground. These leases are either on a share-crop arrangement or cash rent. For simplicity, we will assume the added ground will be cash rent.

Valuing cash rent is never easy either. Multiple things come into play such as farm productivity, location and producer rivalries all influence the price a parcel can fetch on the open market. To assist producers with valuing cash rent, OSU publishes the *Oklahoma Cropland Rental Rate Survey CR-230*. This publication states that the average farmland rental rate in Oklahoma for 2018/19 is \$32.90/acre.

This creates another question that is very interesting and unpopular among producers, “Is that enough?” Can landlords afford to rent land for that much money? Another way of looking at it is this; would a farmer be indifferent between buying land to farm or renting it out for \$32.90/acre?

How much is land worth? OSU also publishes land value data. A short 10 years ago, the average Oklahoma cropland sales price average \$1,212/acre and pasture sold for \$1,437/acre. Compare that with today where, cropland averages \$1,838/acre and pasture sells for \$2,081/acre. These numbers might come as a shock where pasture is more valuable than cropland. However, our state is very diverse with a majority of the cropland in western arid regions of the state and more pasture in the wet eastern regions.

Here is an example, assume a farmer wants to expand his operation by 100 cropland acres. He can lease cropland for \$32.90/acre or buy land for \$1,838/acre. Which should he choose? Using a simple amortization calculator and ignoring closing costs and commissions we can get close to determining the cost of the land. A 30 year mortgage at 5.5% interest with no down payment on \$183,800 will result in an annual payment of \$12,753.31. The total interest paid on the loan is \$198,799.

The farm will have to generate at least \$127.53/acre to cover the payment. That does not include the fact that the money used for the principal payment is not tax deductible and will have income tax due on it. To expand the farm by purchasing is \$127.53/acre compared to \$32.90/acre by leasing.

So why would a landlord lease ground for \$32.90/acre? As we can see, simple interest (or the opportunity cost of capital) on the farm is \$10,109/year at a 5.5% annual rate of return. That would be a conservative return on

investment if the money was invested elsewhere. By that calculation the land rent would have to be \$101.09/acre to cover the opportunity cost of capital for owning the land.

There are a few obvious answers to why there is a discrepancy here. It is rare that land is not purchased solely for its farming profit. Land is also bought with money received by outside income sources like off farm jobs and energy income. Also, inherited land that is sold could result in substantial capital gains taxes making the sale prohibitive to some.

Therefore, if you purchase land to farm and expect the farming enterprise to pay for it, interest rates will have to be low, the purchase price must be very attractive and standard farming enterprises should be expanded in order to be successful.

Oklahoma State University, U.S. Department of Agriculture, State and local governments cooperating. Oklahoma Cooperative Extension Services offers its programs to all eligible persons regardless of race, color, national origin, gender, age, religion, disability, or status as a veteran and is an equal opportunity employer.

Farm Management Resources Found on Your Smartphone

Dr. Rodney Jones, Ag Finance and Management Professor

Brent Ladd, Assistant Extension Specialist

Producers can access digital farm financial management, production, marketing, and risk management topics online by visiting the e-Farm Management website. This site catalogs videos, decision tools, and publications for farmers and ranchers to strengthen their farm management skills.

In the Tillage Series – Types of Tillage video, viewers learn about the two main types of tillage. The video discusses the main purposes of primary and secondary tillage. Lastly, they see examples of the various types of tillage.

To view this video and find additional information on grain production, visit: <http://agecon.okstate.edu/efarmmanagement/grain.asp>.

More information on this and other farm management topics may be found: 1) by contacting your nearest Extension Educator (<https://extension.okstate.edu/county/index.html>) 2) on the e-farm management website (<http://agecon.okstate.edu/efarmmanagement/index.asp>) or 3) on the OSU Agricultural Economics YouTube Channel (<https://www.youtube.com/user/OkStateAgEcon>).

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 we 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/>.

Fall Weed Control

Josh Bushong, Area Extension Agronomy Specialist

Many of our herbicide options for weed control in wheat need to be applied during favorable growing conditions in order to achieve satisfactory results. Often many herbicide applications applied late fall fail to provide satisfactory

results because they were either applied when the weeds were too big or when the weeds were not actively growing.

It is easier to control small actively growing weeds compared to well developed weeds late fall. For example, well tillered grassey weeds become more difficult to control due to the plant now having multiple growing points (each tiller). Certain herbicides, like Group 1 ACCase Inhibitors, will need better spray coverage to get the product on each tiller otherwise parts of the plant will survive.

Another disadvantage to spraying late would be the wheat crop itself is bigger, which could cause spray skips from intercepting the spray. As winter approaches, winter annual weeds will start to go dormant and cease growth. This greatly reduces herbicide uptake and can ultimately reduce control. Read herbicide labels for guidance on spraying in cold temperatures. Some labels will even provide statements about growing conditions prior to application, at application, or even days after application.

Many wheat producers are familiar with the Clearfield Plus system. The herbicide Beyond used in this system is a great example of needing to be applied to actively growing feral rye to achieve adequate control. To improve control, it is recommended to use sequential applications of Beyond using a methylated seed oil (MSO) adjuvant. The first 4 oz/a application in the fall and the other 4 oz/a applied in the spring.

In addition to Clearfield systems, wheat producers now have another technology to utilize to control grass weeds. The new system is called CoAXium Wheat Production System. The trait for CoAXium is called AXigen. The only labeled herbicide for this technology is Aggressor, which is Quizalofop-P-ethyl a Group 1 ACCase Inhibitor. Variety names ending with an AX designates varieties that have the AXigen trait.

Varieties are bred to have a 2-gene tolerance to this herbicide. Since these varieties are technically not fully resistant, application timing is important to reduce crop injury. Applications can be made once the wheat reaches 5 leaves in the fall and up to jointing in the spring. Recent field trials at OSU have confirmed crop injury can occur when Aggressor is applied after jointing.

Apply Aggressor at 8-12 fl oz/A for single applications in the fall or spring. Apply 8 floz/A for sequential fall and spring applications if heavy infestations are present in the fall. To delay onset of herbicide resistance, it is recommended to not use the CoAXium Wheat Production System for 2 consecutive crop years.

Since the Aggressor herbicide only controls grasses, tank mixing another herbicide will be needed to control broadleaf weeds. Do not tank-mix with dimethylamine salt (Amine) formulations of 2,4-D or MCPA as these herbicides are very antagonistic with Aggressor and will severely reduce grass control. Ester formulations of 2,4-D or MCPE can tank mixed with Aggressor.

The CoAxium system will be a great option for controlling many annual winter annual grass weeds, including feral rye, jointed goatgrass, cheat, bromes, rescuegrass, and wild oats. Caution is warranted for use on ryegrass especially if ACCase resistance is suspected. Use of another ACCase herbicide, Axial XL, has been heavily used for ryegrass and resistance has been confirmed by OSU.

Improving Calf Gains

Earl H. Ward, Area Livestock Specialist

Producers are constantly looking for ways to improve their average daily gains (ADG) of their calves. Once you have exhausted the potential of the genetics and nutrition, what else can a producer do to increase the pounds of beef produced on the farm?

Recently published research from the University of Arkansas demonstrated that calf gains will increase by using the well-known, time-tested tool called monensin. Monensin, probably better known by the trade

names Rumensin or Monovet 90, has shown to have many benefits to cattle production such as improved feed efficiency, prevention/control of coccidiosis, increased milk production efficiency in dairy cows, improved feed efficiency in mature beef cows, and improved weight gain on growing calves. Many times, for producers it is difficult to offer monensin within a supplementation, therefore the next option would be to provide it in a self-fed mineral. Weiss et al. compared the performance of calves on a forage based diet and were offered a self-fed mineral that contained no medication to the performance of calves that were offered a self-fed mineral that contained two different levels of monensin (100 mg or 200 mg of monensin per feeding).

The research reported that actual consumption of monensin during the trial was 0, 109, and 170 mg per steer, and an actual consumption of 5.0, 4.4, and 3.4 ounces of mineral per steer per day for the control, 100 mg, and 200 mg treatments, respectively. The target daily intake for these minerals was 4.0 ounces per day, therefore this research suggests that the higher inclusion rate of monensin had a negative impact on mineral consumption.

The data from this research shows that by adding monensin to the calf's daily diet improved ADG. The calves consuming the 100 mg mineral gained 2.3 lbs. per day and the calves consuming the 200 mg mineral gained 2.29 lbs. per day, but the calves consuming the non-medicated mineral only gained 2.11 lbs. per day. The inclusion of monensin increased those gains by nine percent. The data did not indicate any improvements in gains with the higher level of monensin compared to the lower level of inclusion. Therefore, the additional monensin did not have any additional benefits and would come at a higher cost.

Producers who are looking to increase the number of pounds produced on the farm should consider using a tool that has been around since the mid 1970's. Monensin has proven many times to have a positive rate of return on investment. If you have any questions on how to improve your animals' performance contact your OSU Extension office.

Source

Weiss, C.P., P.A. Beck, M.S. Gadberry, T. Hess, and D. Hubbell III. 2020. Effects of monensin dose from a self-fed mineral supplement on performance of growing beef steers on forage-based diets. Appl. Anim. Sci. 36:515-523.

Setting a Baseline for Winter Feeding

Scott Clawson, Area Ag Economics Specialist

Believe it or not, cooler weather and all that goes with it will be here soon. Cow calf operators in eastern Oklahoma will soon be entering what is traditionally a high cost time period in their operations. As our Bermudagrass stalls at frost and the fescue slows, our dependency on round bales and supplements will become more prevalent until spring arrives. Filling this nutrition gap in the most cost-efficient manner can change the color of ink on our financial documents from red to black.

How Significant is the Cost?

While most would assume the cost in this area is significant, just how significant depends on the operation and its dependence on forage production, grazing efficiency, purchased inputs, etc. There are datasets of operations around the country that help track and monitor expenses. Two of the most popular are the Kansas Farm Management Association (KFMA) and FINBIN from the Center for Farm Financial Management. The producer data from 2019 tells the same story that we have always known. Meeting

the nutritional needs of the cow herd is expensive. How expensive? **Nutritional cost is hands down the largest component of the operation's direct costs and half or more of the operations annual total cost.** The KFMA average feed and pasture cost for 2019 was \$504.49/cow¹ and the sum of the feed and pasture related direct expenses from the FINBIN data base was \$449.45/cow².

Set a Baseline in 2020/21

Profit opportunities in the cow calf realm are modest right now. But we need to remember that profit is derived from not only better revenue but also by reducing cost. We can get more efficient in meeting the cow's winter nutritional requirements, but we need to know what we are currently spending. Limited options are available to make major winter-feeding or grazing changes at this point in the year. But we could accurately track our expenses along with our haying and feeding quantities. As we move into next year this information could be used to evaluate our changes/improvements. Having numbers to reference is much more accurate and effective than reminiscing after the fact.

For the producer that grows and bales their own hay, this task may look a bit different. A spring and summer spent on the baler may make costs look a bit different. Blanket statements are usually too vague on the hay production issue. The cost position of someone running a JD4020 with a Hesston 5500 baler that is putting up 100 bales in a summer is drastically different than an operation with new equipment putting up 2,000 bales. The 2019-20 OSU Custom Rate Survey³ gives us a glimpse into what custom hay harvesters are charging to cut, rake, and bale. The survey gives us an estimate of \$20-23/bale. Sure, there is a profit component in that price, but the custom operators are covering more acres than our typical ranch and running the equipment at closer to its full capacity giving it an advantage in economy of scale. Equipment, nutrient replacement, and opportunity costs are all part of the equation also. Opportunity costs would reference what we would do with the additional forage instead of wrapping it up. Could we purchase a set of summer yearlings, retain a calf crop past weaning, run more cows?

The calculation and analysis of winter feed costs can be difficult but is doable. Our best chance to accomplish this is to start with where we are now. The more we can do with assets that we have (land, cows) generally the better off we are. Being diligent in finding efficient ways to extend the grazing season and increase the quality of forage available will pay dividends. Starting now measuring hay use, feed, and your time is the first step to establish a baseline for your operation that can be used to reduce costs.

¹<https://www.agmanager.info/kfma/enterprise-reports/2019-state-enterprise-summary-beef-cows-sell-calves>

²<https://finbin.umn.edu/FinB.dll/generate?ReclD=729538>

³<https://extension.okstate.edu/fact-sheets/oklahoma-farm-and-ranch-custom-rates-2019-2020.html>

Pain Management in Cattle

Barry Whitworth, DVM Area Food/Animal Quality and Health Specialist for Eastern Oklahoma

Pain is not limited to the human experience. Studies show that animals experience pain as well. Procedures such as castration and dehorning are painful to cattle. I must admit that when I was a veterinary student at Oklahoma State University in the late nineteen-eighties pain control in cattle was not considered important. Times have changed! Animal welfare has become a major issue with consumers (Rollin, 2004). More people are concerned with how their food is produced and how those animals are cared for. Also, studies are beginning to demonstrate that pain control has advantages. Veterinarians

and cattle producers have to evaluate their current practices for welfare issues. In the past, routine practices such as castration and dehorning were done without anesthesia and/or pain control. This is no longer viewed as best management practices!

Pain management in cattle can be accomplished in different ways. Cattle producers can reduce pain on their cattle operation by instituting certain management practices. Simply timing of castration can influence the amount of pain an animal experiences. One study demonstrated the benefits of castration at an early age (Dockweiler et al, 2013). The study compared bull calves eight weeks old or less to calves six months old or older. Calves were castrated surgically or banded. The study used several different parameters to evaluate pain and showed that younger calves experienced less pain. The young calves tolerated the procedure better which highlights the importance of early castration.

Another common procedure performed on ranches is dehorning. A simple way to eliminate the pain associated with dehorning is to incorporate polled genetics. Most breeds of cattle have a wide variety of excellent polled bulls. If the calves have horns, the use of anesthesia and analgesics would help control pain with dehorning and other common painful procedures. With the help of a veterinarian, producers can easily learn how to do a local nerve block.

There is mounting evidence to the benefits of using pain control in procedures such as castration and dehorning. Studies have demonstrated improvement in average daily gain, better carcass traits, and a reduction in incidences of respiratory disease when using pain control.

The pharmaceutical industry is working on getting approval of drugs in cattle to control pain. Banamine® Transdermal, a nonsteroidal anti-inflammatory drug (NSAID), is the first and so far, the only drug approved for control of pain for cattle. It is approved for pain control associated with foot rot and fever in bovine respiratory diseases. While no other drugs are Food and Drug Administration (FDA) approved for pain control in cattle or other food animals, there is one human drug that has demonstrated promising results. It is the NSAID drug Meloxicam. Meloxicam is used to control pain associated with arthritis in humans. Veterinarians may use this drug in an extra-label manner. For this drug to be used on a ranch, the producer would need to have a proper veterinary-client-patient-relationship (VCPR) with their veterinarian.

It is well documented that consumers are concerned with the welfare of animals (Rollins, 2004), and no one is more concerned about the welfare of their animals than cattle producers. Cattlemen need to have a conversation with their veterinarian about the options available to control pain with procedures such as castration and dehorning on their operation. If producers would like more information about pain control in cattle, they should talk with their veterinarian or seek help from their local Oklahoma State University County Extension Educator.

References

Rollin, B. "Annual Meeting Keynote Address: Animal Agriculture and Emerging Social Ethics for Animals." *Journal of Animal Science* 82.3 (2004): 955-64.

Dockweiler JC, Coetzee JF, Edwards-Callaway LN, et al. Effect of castration method on neurohormonal and electroencephalographic stress indicators in Holstein calves of different ages. *J Dairy Sci.* 2013;96(7):4340-4354.