NOBLE COUNTY EXTENSION

Agriculture News and Updates

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Noble County Oklahoma Cooperative Extension Service

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Crabgrass - A Weed Can Be a Forage

Mike Trammell,
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Crabgrass is an annual, warm-season grass that is fast growing, easy to establish, and capable of natural and prolific reseeding, all of which allows it to excel as a "weed."

Despite its bad reputation, crabgrass was originally used in Europe as fodder before being introduced into the United States, likely around the mid-1800s, as a forage for grazing livestock. During the past 30 years or so, there has been an enormous change in the perception of crabgrass with forage and livestock producers. It is now considered a legitimate forage crop.

In 1988, the Noble Research Institute was the first to publicly release a crabgrass cultivar, which was named Red River. During its history, Red River crabgrass became the main commercial cultivar, promoting the use of crabgrass as an important warm-season annual grass for forage and livestock operations. This initially occurred in the southern Great Plains but now has spread throughout the southern United States. Since then a handful of new forage crabgrass cultivars have been developed and released. These improved crabgrass varieties are not weeds' but high-producing, high-quality forages that are broadly adapted. The nutritive value of crabgrass is often superior to other warm-season forage options during summer for both haying and grazing. Forage crabgrass has high crude protein (8-14%) and high digestibility, which promotes average daily gains of livestock that can easily reach 2 pounds per head per day. It is also an

excellent choice in many double-cropping systems, especially with winter annual forages like wheat, to extend the grazing period.

Crabgrass is widely adapted and can be used in both till and no-till forage production systems and is often managed in many livestock grazing operations as a reseeding crop, thereby reducing the cost of seed and other annual costs. In addition, crabgrass can also be used as a component in warm-season annual and perennial forage systems. It is particularly productive in dryland situations, but it also performs well under irrigation and across a range of soil pH levels (5 to 7.5). It can be used for silage or hay production and is an excellent choice for conservation purposes. It covers critical areas quickly due to its rapid growth and establishment.

Crabgrass seed is light and fluffy which can interfere with its ability to flow through a seed drill. Crabgrass seeds are rough in texture, resulting in individual seeds sticking together to form large clumps. The clumps not only cause problems when drilling but with the broadcasting of seed as well. To overcome these issues, crabgrass seed is sometimes mixed with a carrier, such as a fertilizer, to aid in seed flow through the machine when planting. Planting coated seed is also an option. Coated seed can also improve establishment results by adding bulk and weight to the seed, allowing it to be easily drilled or broadcast.

For best results, plant crabgrass mid-spring to early summer for the best forage production. Since yield is dependent on rainfall, avoid planting after mid-summer. Seeding rates should range from 4 to 6 pounds of pure live seed (PLS) per acre and planting depth should be 1/4-inch deep. Crabgrass' excellent ability to reseed makes re-establishment each year easy, which can potentially reduce costs; however, it is recommended to add low rates of additional seed annually to the production system. Adequate fertility must be provided for improved forages to be successful, and crabgrass is no exception. Always soil test and apply nitrogen, phosphorus and potassium accordingly.

Crabgrass works well when planted with small grains such as cereal rye or wheat. The small grains provide forage for late fall into spring and the crabgrass fills in during the summer and early fall to provide high-quality forage. Light tillage is recommended when the cereal forage is done being grazed or harvested in the spring. This improves seed germination and promotes better volunteer crabgrass stands for the summer.

In the summer, begin grazing crabgrass stands when plants are 4 to 6 inches tall, which typically occurs 30-40 days after seedling emergence. For hay production, cut crabgrass pastures in the boot to heading stage (normally 18 to 24 inches high), which will allow for at least two harvests per year. Regrowth is supported by remaining leaves and not by stored root and crown reserves, so avoid cutting crabgrass pastures lower than 3 inches.

Crabgrass has been building momentum in the last couple of years, and I suspect that it is due to those producers willing enough to try something "off the wall." Afterall, this weed has great potential to extend the grazing season and provide nutrient-dense forage to grazing livestock.

MASTER CATTLEMAN PROGRAM:

If you are interested in the OSU Master Cattleman Program, please contact Chad Webb in the Noble Co. OSU Extension Office. With enough interest, the program will begin this fall. I will be glad to explain the 14-week series to you, so please, feel free to contact Chad at PH# 580-336-4621 or by email at chad.webb@okstate.edu.

Agriculture items available for checkout. Contact the Noble County OSU Extension Office for availability and checkout procedure at 580-336-4621.

The Noble County OSU Extension Office offers several items available for checkout at no cost which include: 5 ft Weed Wiper, soil and hay probes, incubators, and handheld GreenSeeker are some items. Please contact the office for availability. OSU Factsheets are always available either in the office or by clicking the link below https://extension.okstate.edu/fact-sheets/index.html

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.

Estimating Available Forage

Brian Freking, SE Area Livestock Specialist

Estimating forage yield can help livestock managers understand carrying capacity of their land, which is important when faced with decisions of destocking when drought occurs. June and July are excellent times to capture estimated yields of a system as approximate 50-65% of total forage growth will occur by this time point.

Forage yield can be determined by many techniques such as electronic pasture gage, pasture rulers, rising plates, and clip sample method. The pasture ruler is probably the simplest method, but it still needs to be calibrated with clip samples to have confidence in your estimates. In using the ruler method, you measure the average forage height in inches and multiply it by an estimate value listed in the table (i.e. 300 lb. DM / acre x 10inches = 3000 lbs./A).

Forage Type	Pasture Condition		
	Fair	Good	Excellent
Fescue + N	250-350	350-450	450-550
Fescue + Legumes	200-300	300-400	400-500
Bermudagrass	100-200	250-400	400-550
Native Grass	50-100	100-200	200-300
Mixed Pasture	150-250	250-350	350-450

A Plexiglass plate meter is another tool used by many universities to measure density as well as height and may be a more accurate method. A plate meter 20"x 20" weighing 2.6 lbs is dropped at waist height. For this method it has been determined that each inch of forage height equals 263 lbs. of DM. Below is the table for the Pasture plate meter.

Calibration Table for Pasture Plate Meter (Source: PM 1758, ISU 2009)			
Forage Height (in)	Dry Matter (lbs/A)	Forage Height (in)	Dry Matter (lbs/A)
0.5	**136**	**6.5**	**1654**
1	**263**	**7**	**1781**
1.5	**389**	**7.5**	**1907**
2	**516**	**8**	**2034**
2.5	**642**	**8.5**	**2160**
3	**769**	**9**	**2287**
3.5	**895**	**9.5**	**2413**

4	**1022**	**10**	**2540**
4.5	**1148**	**10.5**	**2666**
5	**1274**	**11**	**2793**
5.5	**1401**	**11.5**	**2919**
6	**1528**	**12**	**3046**

Calibrated Eye: After many hours of practice using a quadrant- clipping method and/or some form of measuring stick method you will begin to get a feel of the amount of pounds per acre by looking at the density and plant height and then estimating pounds of forage per acre. Photo monitoring might be a big help as reference as well which could help in the future. What did my pasture look like in June/July of 2009 versus 2011 or 2012?

GrazeOK 4+
Oklahoma State University
Designed for iPad
Free

Is there an APP for this?

Tools are created all the time and Oklahoma State does have an app to help estimate available forage. If you ever have questions about this or any other topics, please consider visiting your local county extension educator.

Five Considerations for Navigating Thin Cow/Calf Margins

Scott Clawson, NE Area Ag Economics Specialist

1. Pay Attention to lbs. of Calves Weaned Per Exposed Cow

At the end of the day, cow/calf producers have one primary paycheck. This comes when calves are weaned and sold. Especially in times where the market is depressed, decisions need to become more focused. When we look at our cost areas for the upcoming year, we should ask how this decision will impact the pounds of calves weaned per exposed cow. Generally, improving conception rates, calving percentage, and weaning weights will have a positive impact on profit. However, there is a point where improvements can be cost prohibitive so keep a sharp pencil.

2. Extend Your Grazing Season

Winter feeding costs are no doubt a major contributor to our annual cow cost. We might generalize that as the period from first freeze to Tax Day. Every year is different and our actions regarding hay production and late summer pasture management directly impact the price tag of our winter feeding and grazing. There are several cost-effective ways to prolong your grazing season. Stockpiling forage and utilizing rotational or strip grazing can have a definite benefit.

3. Delay Borderline Asset Purchases

One of the hidden costs that can sneak up on the financials of a cow calf operation is depreciation. With tighter margins expected, we need to be diligent in how we make equipment purchase decisions. Can we go another year without a new tractor or baler? Can that cow make it another year? Making the separation between necessities and extras is highly important. At the end of the day, do these purchases contribute to reducing costs or increasing weaning weights?

4. Find Value in Your Market

Calf crop value can be found in many different places. Some options are based on breeding decisions and some are management options. Taking advantage of marketing premiums associated with castration, dehorning or lot size are a great place to start. In addition, looking around at backgrounding programs such as Oklahoma Quality Beef Network or marketing as natural or source verified programs are possible options. There can also be value within the calf crop. Grouping sets of heifers and marketing them private treaty as replacements or feeding out a few steers to sell halves and quarters may be beneficial.

5. Strategic Cost Management

Strategic cost management is timing annual expenditures on management practices to years where we feel profitability may be greater. Several items could fall into this list. Two that come to mind are brush management and equipment replacement. For example, brush control strategies tend to have a high cost/cow versus annual broad leaf control. Saving those expenditures for years when the market is moving upwards may be a logical option.

Heifer Development

Earl H. Ward, NE Area Livestock Specialist

Many beef producers have just weaned their fall born calves and have selected which, if any, females they plan to retain for cows. The question now becomes “how do I develop these young females to prepare them for a productive life as a cow?”

For years research has supported the guidelines of developing heifers to 60-65% of their mature weight at the time of breeding. This means that a heifer with the potential mature weight of 1200 pounds would need to reach at least 720-780 pounds by the start of the breeding season. The main concept behind these numbers is to have a female that has reached puberty and possibly been through several estrous cycles prior to the breeding to ensure that this female is bred as a yearling and calving at 24 months old.

If asked for my personal opinion on developing breeding animals, I always say "I like to slow grow them." Meaning that I want that animal healthy, growing, and thriving, but I want it to do it on their own time and possibly at a lower cost. I know that I could nutritionally push this animal, reach my targeted breeding size, and get that animal to cycle sooner in life. However, that additional nutrition comes at a cost as an increase in feed costs. Also, I do not want that female to get "too fleshy" because she will begin to deposit fat in her mammary glands which will result in an irreversible decrease in the female's milk producing ability.

Research from the University of Nebraska looked at heifers on low-gaining diets (1.1 pounds ADG) versus heifers on a high-gain diet (1.4 pounds ADG). At breeding time, the low-gain heifers were 53% of their mature weight and the high-gain heifers were 57% of their mature weight. They found that more of the high-gain heifers were cycling at the beginning of the breeding season than the low-gain heifers (85% vs 74%). However, there was no significant difference in 45-day pregnancy rate between the two groups (92% for the low-gain versus 88% for the high gain). The low-gaining heifers did have a $22/head lower cost than heifers on the high-gain treatment.

The research also reported on the first-year calf production and rebreeding performance. They saw no significant difference in calf birth date, calf birth weight, calving difficulty, ADG, 205 adjusted weaning weight, or percent cows pregnant with their 2nd calf. This is just one of several trials that has led University of Nebraska's Beef Cattle Reproduction Physiologist Dr. Rick Funston to suggest developing replacement heifers to as low as 55% to up to 65% of their mature weight prior to breeding depending on production costs.

A producer should be mindful of their nutrition plan for their growing females by ensuring the heifers are performing optimally while not increasing production costs. Also remember that it is recommended to have your veterinarian do a reproduction tract score on your replacement heifers and beware of the size of your bulls used on these females. For more information or help on developing replacement heifers, contact your local OSU Extension office.

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".

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 effects 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.

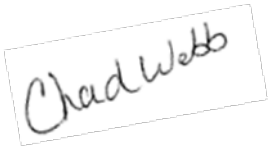
So how do cattle cope during the heat? One of the best methods to cool down is to seek shade. Animals without access to shade will orient their bodies to reduce sun exposure and stand rather than lie down to increase cooling. Sweating is also key to evaporative cooling but cattle's ability to do so is 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.



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