Ag Insights

From the Desks of Your Northwest Area Ag Specialists

Oklahoma Cooperative Extension Service - Division of Agricultural Sciences and Natural Resources - Oklahoma State University

March, 2018

West Area Office, Enid

Phone: (580)-237-7677

Dana Zook

Area Livestock Specialist
dana.zook@okstate.edu

Trent Milacek

Area Ag Economics Specialist
trent.milacek@okstate.edu

Josh Bushong

Area Agronomy Specialist
josh.bushong@okstate.edu

OPREC, Goodwell

Phone: (580)-349-5441

R. Britt Hicks

Area Livestock Specialist
britt.hicks@okstate.edu

Facebook Page:
facebook.com/
nwareaosuextension

Website:
http://oces.okstate.edu/
nwareaextension

Penciling a Profit on 2018 Grain Sorghum

Trent T. Milacek, NW Area Ag Econ Specialist

Grain sorghum prices have increased through the winter. Strong export demand and support from bullish wheat and corn markets have helped drive prices higher. Oklahoma cash bids are at or approaching $3.00/bushel. Recent concerns in export markets have generated short-term weakness, but prices could continue to improve. Compared to last year, basis bids are as much as $0.30/bu. higher.

In order to be profitable, producers must look for ways to minimize the effect of sugarcane aphid. In recent years, farmers have found success with early planting in April and proactive pesticide application. Careful scouting and early planting dates may allow a producer to spray only once, which will help maintain profitability.

In 2017, some early-planted sorghum did not require a pesticide application as the sugarcane aphid either did not show up or arrived late. This situation can increase profitability substantially. Recent rains across Oklahoma will allow producers to prepare for early planting as soon as soil temperatures increase to 60°F.

A 70-bushel grain sorghum yield sold at $3.00 gives a farmer $210 per acre in revenue. Accounting for operating costs like seed, fertilizer, harvesting, herbicides, rent, and machinery costs, a producer could expect to spend $200 per acre. This results in $10 per acre in profits.

The budget above includes one application of pesticide to control sugarcane aphid. There have been reports that producers have to spray for sugarcane aphids two and three times. If two "extra" applications are required, it will be difficult to make money on the grain sorghum enterprise.

Careful attention to variety selection can provide some relief. The Oklahoma Cooperative Extension Service and local seed dealers have access to literature that defines the level of sugarcane aphid tolerance in varieties currently available to producers.

Current budgets require large yields to make money. If selecting a tolerant variety will cause a significant reduction in yield potential, producers should think critically about the decision. A 10-bushel reduction in yield will cost a producer more than another application of pesticide.

The Oklahoma Cooperative Extension Service has developed an app to help producers manage the economics of sugarcane aphid treatments. Search the App Store on your iPhone or Google Play on your Android device for "SCA Decision Aid" to download the app. An excel version of the tool is also available. Contact your local county extension office for more information.

Happy Microbes, Happy Cows!

Dana Zook, NW Area Livestock Specialist

Have you ever considered the beef cow and how much she differs from other animals? To start, the cow is a mammal called a ruminant. Some other ruminant animals include deer, sheep, goats, giraffe, and camels. These animals consume forages and feed byproducts that are not suitable for human consumption. Ruminants then take these products and convert them into nutritious foods such as meat and milk which make up a very important part of a humans diet.

How do cows and other ruminants utilize these feed products? In cows specifically, the digestive system is made up of four unique compartments (reticulum, rumen, omasum, and abomasum) filled with microorganisms that actually conduct the digestion process. This marvelous relationship between the cow and microbes allows the consumption of dietary material (forages and feed byproducts) that would be indigestible to the cow alone.

Let's look deeper into how these feed ingredients are broken down. There are three main types of microbes that reside in the ruminant digestive system: bacteria, protozoa, and fungi. These tiny creatures break down the feed and convert them to volatile fatty acids (VFA) which are an energy source cows use for maintenance, growth, and lactation.

Similar to other animals, the digestive system of a ruminant is somewhat acidic (pH) and the level of acidity is greatly affected by the diet they consume. Not all feeds are created equal! Structural carbohydrates (forages) are fermented by the microbes slowly while non-structural carbohydrates (grains) are quickly digested. The digestion process of the microbes affects the pH of the rumen and in turn this pH will ultimately affect the microbial population. Slower digestion has less of an effect on the overall pH, but highly digestible feed ingredients such as grains can cause rumen pH to decrease significantly. Generally, rumen pH will be lower when a grain based diet is fed and cattle grazing only grass will have a higher pH. Rumen pH will also vary throughout the day, naturally dropping after each meal and rising again slowly until the next meal. After a ruminant eats its fill, they will often lay down and ruminate. This is the process where the animal will regurgitate some of its food and "chew it's cud". This chewing action produces saliva, which buffers the rumen allowing the pH to rise. Some microbes are more adapted to lower pH while others will die if the acidity drops too quickly. This is a complicated process!

Just like our digestive systems, things can go awry and cattle can experience digestive upsets. Stress, introduction of new feeds or any abrupt changes in diet can cause digestive issues in cattle. Bloat and acidosis are commonly known disorders that fall into this category. These digestive issues can often be prevented by properly adapting cattle to a new diet or feed. Some situations where adaption is very important include 1) offering a new diet to freshly weaned calves, 2) pulling calves off wheat pasture and feeding a dry lot ration, 3) supplementing mature cows with a feed byproduct such as whole cotton seed, or 4) offering cows a silage or grain based ration when pastures are short in drought.

As you can see, these tiny microbes have a very important job for the ruminant animal. Without a healthy rumen environment, cows cannot operate efficiently. Producers may not notice anything outward about a cow with a slightly upset digestive system, but this inefficiency will silently erode profitability over time. This may materialize as poor milk production in cows, reduced weaning weight in calves, or decreased feed efficiency in stockers.

As producers consider changing nutrition within beef herds, keep in mind the importance of providing consistent nutrition and conducting proper adaptation to new feeds. This will keep the microbes within cows operating efficiently. Happy microbes means happy cows! Producers with questions regarding cow nutrition or adaptation to new feeds should contact the local county OSU Extension Educator for assistance.

Does Time of Feeding Affect when Cows Calf?

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

Most cow-calf producers would certainly prefer to have the cows calve during the daylight hours, when they're more likely to see if a cow or heifer needs some assistance. In 2008, Kansas State University published research that investigated how the time of day that feed is provided to near-term beef cows (morning vs. evening) affects time of calving. In this study, an analysis of calving records from two separate spring calving beef cow herds with diverse feeding patterns were examined for parturition patterns. One herd consisted of Hereford and Charolais cows at the University of Idaho for which the time of calving was recorded to the nearest half-hour for 15 consecutive years. During all years, these cows were fed alfalfa and pea or oat silage at near ad libitum levels daily from 6 a.m. to 8 a.m. beginning approximately two months before the expected calving season began. The second herd consisted of Hereford x Angus and Brahman x Hereford x Angus crossbred cows at the Kansas State University Agricultural Research Center in Hays for which the time of calving was recorded to the nearest half-hour for 5 consecutive years. During all years, these cows were fed forage sorghum hay at near ad libitum levels daily from 4 p.m. to 6 p.m. beginning two weeks before the expected calving season began.

In the morning-fed Idaho herd, the distribution of calving was uniformly spread out over a 24-hour period (Figure 1). In addition, nearly equal proportions of cows gave birth during daylight hours (6 a.m. to 6 p.m.) and nighttime hours (6 p.m. to 6 a.m.; 52.1 vs. 47.9%, respectively). Whereas, in the evening-fed Kansas herd, 85.4% of the cows gave birth during daylight hours (6 a.m. to 6 p.m., Figure 2). Based on these observations, this data suggest that feeding near-term cows in the evening will result in a high incidence of births during daylight hours as compared to feeding in the morning (85.4 vs. 52.1%, respectively). The data also suggested that the time of day that a cow will give birth may be predictable. Based on the previous time of day that calving occurred, the time of day that evening-fed cows would give birth could be predicted within ± 3.00 hours and the time of day that morning-fed cows would give birth could be predicted within ± 4.25 hours. This research also suggested that heifers appeared to pattern their time of calving to that of their dams. If these observations are indeed true, one could utilize past calving data records to limit calf losses due to dystocia.

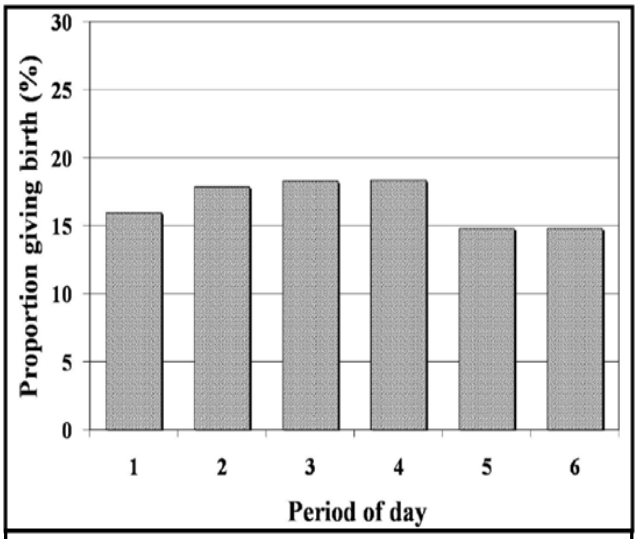

Figure 1. Distribution of all observed parturitions at University of Idaho by period of day (15 years of data). Period 1: 6 a.m. to 10 a.m.; Period 2: 10 a.m. to 2 p.m.; Period 3: 2 p.m. to 6 p.m.; Period 4: 6 p.m. to 10 p.m.; Period 5: 10 p.m. to 2 a.m.; and Period 6: 2 a.m. to 6 a.m.

Source: Jaeger et al., 2008.

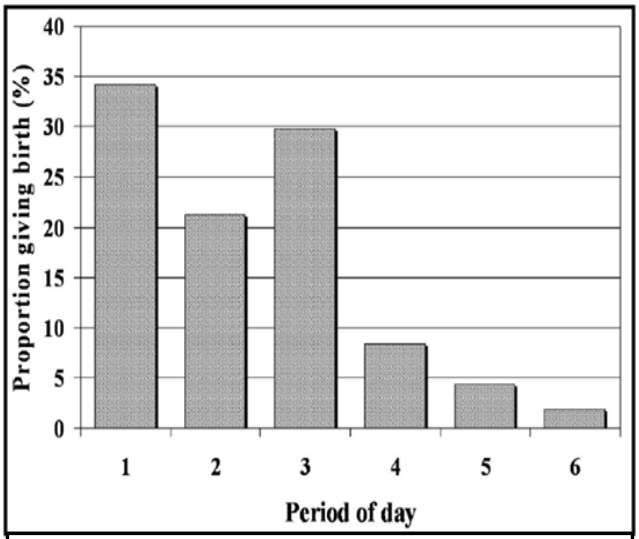

Figure 2. Distribution of all observed parturitions at Kansas State University-Hays by period of day (5 years of data). Period 1: 6 a.m. to 10 a.m.; Period 2: 10 a.m. to 2 p.m.; Period 3: 2 p.m. to 6 p.m.; Period 4: 6 p.m. to 10 p.m.; Period 5: 10 p.m. to 2 a.m.; and Period 6: 2 a.m. to 6 a.m.

Source: Jaeger et al., 2008.

Online Farm Management Resources for Farmers/Ranchers

The Oklahoma Cooperative Extension Service has developed and catalogued farm management resources on a variety of financial, production, marketing, and risk management topics. These resources can help producers hone their financial management skills. Resources include a series of short videos, publications, software tools and webinars on agricultural financial management topics and selected production topics.

One current example of these resources is the Managing Risk in Agriculture video. This video provides information on general risk management strategies, strategies for specific types of risk found in agriculture, and measuring a producer's ability to bear risk. To find this video and additional resources on farm risk, go to: http://agecon.okstate.edu/efarmmanagement/risk.asp.

Late Emerging Wheat

Josh Bushong, NW Area Agronomy Specialist

Wheat fields have been under drought stress most of the growing season, some since planting. There have been several producers curious on what to expect from wheat that was sown last fall, but has just germinated with recent rainfall events in February and March. Dr. David Marburger, OSU Small Grains Extension Specialist, put together some information on this topic in his recent blog post "What can I expect from wheat just now emerging?" which can be found at osuwheat.com.

The main question about winter wheat emerging this spring would be whether or not these young seedlings can produce a decent grain crop worth harvesting. In order for the plant to go reproductive and produce grain it must be exposed to cool temperatures for a certain period of time, this process is called vernalization. Determining how cool and how long are the bigger questions.

In the literature, you will often see that winter cereals require exposure to cooler temperatures (33° to 51° F) for six weeks. However, the exact temperature and time period differs by wheat variety. A general rule of thumb is varieties that are more winter-hardy and later maturing tend to require lower temperatures for a longer period of time. Vernalization requirements for winter wheat varieties adapted to the southern Great Plains may range from 120 to 1080 hours (5 to 43 days) below 45° F (Neely, 2016).

Since this is a rare problem in Oklahoma, we do not have much data on variety-specific vernalization requirements. Dr. Carver, OSU Wheat Breeder, said he feels exposure to constant temperatures at or below 45° F for three weeks should be sufficient for most winter wheat varieties grown in Oklahoma. If that time decreases to two weeks, though, there is a possibility that we may run into vernalization issues for some varieties. It is important to keep in mind that the vernalization clock starts clicking once the seed imbibes water and sprouts.

Since each wheat variety can vary in vernalization sensitivity, it would be good to know which wheat variety is under question. Unfortunately, OSU does not have variety –specific vernalization requirements at the moment. Utilizing some Texas A&M wheat data from south Texas in 2016 we can look at which winter wheat varieties produced grain when exposed to limited vernalization conditions. Some OGI varieties like Billings and Bentley still produced decent yields, while varieties like Doublestop CL+, Duster, Gallagher, and Iba did not. Visit the blog post to find the full report.

When evaluating wheat fields this spring be sure to determine stand counts, tiller counts and take note when the crop sprouted and emerged. Late emerging wheat will not produce many tillers typically, so individual plants might only produce one head per plant, assuming the plants undergo enough vernalization. In this scenario, planting rates will determine most of the yield potential.

(Continued on page 5)

(Continued from Page 4)

Ideally, we need 60-70 heads per square foot to achieve maximum yield, while 50-60 heads per square foot will be more typical for lower yield potential production systems. To help you with your tiller counts and yield estimates, you can find more information in fact sheet PSS-2149: Estimating Wheat Grain Yield Potential.

If you have crop insurance, it is recommended that you contact your agent to discuss your options if you think you might be at a loss. If a grain crop is unlikely, then harvesting the forage might be the only option. Additional rain will be needed to produce more tonnage to graze or hay.

To find out more information visit osuwheat.com or your OSU County Extension Office.