



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

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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](https://www.facebook.com/nwareaosuextension)

Website:

[http://oces.okstate.edu/
nwareaextension](http://oces.okstate.edu/nwareaextension)

Is Cotton a Profitable Crop Enterprise for 2019?

Trent T. Milacek, NW Area Ag Econ Specialist

Cotton is generating interest in NW Oklahoma as an alternative to traditional grain crops.

Cotton has not been immune to lower prices or trade concerns, so can it find a place on farms where wheat is the traditional crop?

Advancements in genetics and strong fiber prices have resulted in the expectation that Oklahoma could plant its largest cotton crop in history. The biggest hurdles for new producers are information and access to harvesting equipment. Both of those requirements can be expensive to obtain.

Costs of production vary widely across operations. Consider contacting your extension office in order to formulate a game plan before it is time to plant. According to the 2017 Oklahoma Ag Statistics publication, the five-year average yield, including 2012-2016, is 726.8 lbs./acre. In other words, roughly 1.5 bales. However, the Garfield county crop insurance t-yield from the 2019 actuarial for dryland cotton is 504 lbs./acre.

The 2018 cotton crop delivered to area gins is bid at 68.64¢ per bushel. If a producer is conservative and uses the t-yield at 504lbs., they could expect to achieve a total revenue of \$348 per acre from lint. They will also market the cotton seed, which at \$7.5/cwt. may bring an additional \$50/acre.

It is helpful to determine a breakeven yield in order to formulate a marketing strategy. Some major operating costs per acre include rent at \$40, \$55 for seed, \$60 for pesticide, herbicide and growth regulator applications, \$25 for insurance, \$30 for fertilizer, \$15 for planting, \$70 for harvest and \$35 in ginning expenses. Using these figures with other operating costs brings the total to \$371 per acre.

Using 68.63¢/lb. for a forward contracting price and \$371 per acre for operating costs, the producer can estimate a breakeven yield of 461 lbs. per acre. A producer would have to forward contract approximately 90 percent of their expected production to cover operating costs. That is likely too much risk for an operation with little experience in growing cotton and those not sure of what an average yield on their operation may be.

Operating costs do not cover the total costs of the operation such as machinery depreciation and interest. Those costs must be calculated at the farm level to complete the budget. These

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costs are covered if producers can harvest a crop better than the t-yield in a timely manner and if prices maintain current levels.

A sensitivity analysis of the budget shows that at the average yield of 504 lbs., breakeven above total costs occurs at a price of \$0.69/lb. Alternatively, at a current price of 68.64¢/lb. yield must be 505 lbs./acre to cover total costs.

When adopting a new cropping system, production risk can be high. It is important to become familiarized with the crop and to seek out assistance in discovering best cropping practices for the area. Consulting with local county extension educators is a good option for obtaining this information. For more assistance with budgeting and marketing, please contact your local county extension office.

Get Calves Started Off Right with Colostrum

Dana Zook, NW Area Extension Livestock Specialist

In most areas of Oklahoma, calving season is just around the corner. In the craziness of this time period, don't forget the importance of colostrum for the future performance of calves. This is a busy time as producers continue to feed, fix fence, manage the crazy winter weather and grind away at their winter to-do lists. In the midst of all this, sometimes simply getting a calf born alive is a huge success! Adequate colostrum intake within the first 24 hours of life can play a huge role in future health and performance of calves.

The definition of colostrum is the first milk extracted from the mammary gland within 24 hours of birth. During the first day of life, the gut of the baby calf can absorb a unique set of immunoglobulins or large proteins that provide passive transfer of immunity from the cow. The clock starts ticking at birth as the absorptive capacity of these proteins is reduced over time. The gut of a baby calf will have 66% absorptive capacity to these proteins 6 hours after birth, 50% at 12 hours and intestinal closure is finalized 24 hours post birth. In reality, most absorption occurs within 12 hours of birth solidifying the importance of a strong lively calf that is motivated to nurse.

The passive transfer of maternal antibodies through the colostrum will provide a calf with exclusive immunity to diseases that may be encountered later in life. In fact, research from the USDA Experiment Station in Clay Center, Nebraska demonstrated that colostrum may be the key to lifelong health in calves. In this particular study, blood samples were obtained from 263 calves 24 hours after birth to determine colostrum intake reflected by passive transfer of maternal antibodies. Growth performance and health were monitored on these calves through weaning and into the feeding period.

Data from this study established that calves with inadequate maternal antibodies were 6.4 times more likely to be sick in the first 28 days of life as compared to calves that received adequate colostrum. In fact, the risk of death before weaning was 5.4 times greater in calves with poor transfer of immunity. In addition, inadequate colostrum reduced expected weaning weights by 35 pounds and the risk of being sick at the feedlot tripled. This study is a great illustration that passive transfer of immunity is a very important factor of calf health and performance before weaning and into the feeding period.

So what can be done to improve colostrum intake and chances of a healthy calf crop? Many factors of immune transfer are impacted by the cow. Genetics of the cow may influence the quality and quantity of colostrum that is produced. However, tangible factors of cow age, body condition, and udder structure can be more easily addressed by the producer. Mature cows will produce more colostrum compared to a first calf heifer and additional protection may be provided in these older cows due to their exposure to disease and vaccinations. As one would expect, cows in lower body condition and poor health will produce lower quality colostrum for their calves. Udder shape and size can also prevent sufficient colostrum intake. Large teats or a pendulous bag can prevent a new calf from locating the teat and nursing in a timely manner.

Stress is also a crucial player in the timing of colostrum consumption and many factors of stress can cause calves to be sluggish at

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birth. Long and difficult deliveries, inclement weather, and separation from the cow can hinder intake. In these situations, stress can reduce the absorptive capacity of the intestinal wall even if high quality colostrum is available.

In the event that a calf may not have received adequate colostrum, consider having frozen or replacement colostrum on hand. Keep a tube and bottle in your calving kit for the situation when calling a vet or making a trip to town is not possible. Always thaw frozen colostrum slowly and read label directions on colostrum supplements. Sources recommend providing 5-6% of the calf's body weight in colostrum within the first 6 hours and follow with another feeding at 12 hours. Consult your veterinarian for colostrum guidance and assistance choosing the best supplemental colostrum product.

Is colostrum in your thought process this calving season? Expensive vaccines and attentive management may not be as valuable to an operation as the simple aspect of colostrum intake in the first 24 hours of a calf's life. If you have any questions dealing with colostrum or would like to learn more, contact your local county Oklahoma Cooperative Extension office.

*CHECK OUT THE NEW
OSU BACKYARD POULTRY YOUTUBE PAGE!
[HTTPS://WWW.YOUTUBE.COM/CHANNEL/UCNTEFMFU5AKCFMRUB9DDU3W](https://www.youtube.com/channel/UCNTEFMFU5AKCFMRUB9DDU3W)
DISCOVER VIDEOS ON POULTRY NUTRITION, DISEASES, EXTERNAL PARASITES
AS WELL AS
A HANDS-ON VIDEO ON POULTRY PROCESSING*



Time to Evaluate Beef Cow Herd Breeding Potential

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

With spring calving approaching, now would be good time to evaluate the breeding potential of your cows. Research has shown that the body condition score (BCS) of beef cows at the time of calving has a huge impact on subsequent rebreeding performance. Body condition scoring is a practical management tool to allow beef producers to distinguish differences in nutritional needs of beef cows in the herd. Simply put, BCS estimates the energy status (fat cover) of cows. The scoring system used is a 1 to 9 point scale where a BCS 1 cow is extremely thin while a BCS 9 cow is extremely fat and obese. A BCS 5 cow is in average flesh or body condition. A change of 1 BCS is equivalent to about 90 lb of body weight. To optimize pregnancy rates, mature cows should have BCS of 5 or greater at calving and 1st calf heifers should have a BCS of at least 6 at calving.

Research has shown that the BCS of beef cows at the time of calving has a huge impact on subsequent rebreeding performance. This occurs because the BCS of cow influences days to first estrus after calving and calving interval. For a cow to maintain a 365 day calving interval, she must conceive within about 82 days after calving (283 day gestation + 82 day postpartum interval = 365 days). Figure 1 illustrates that 90% of the beef cows with BCS >5 at calving showed signs of estrus by 60 days post-calving, whereas only 59% of beef cows with BCS 4, and only 41% of beef cows with BCS <3 showed estrus. The rectangular box in this figure shows the critical breeding time in order to achieve a 365-day calving interval. Even though cows that calve in a BCS of 7 have a short postpartum interval, it is not economical to feed cows to a BCS of 7.

Research (Figure 2) suggest that increasing calving BCS from 3 to 4 would increase pregnancy rate by about 35 percentage points (from 32 to 68%). Increasing calving BCS from a 4 to a 5 would increase pregnancy rates by about 20 percentage points (from 68 to 88%). Note this same effect of BCS at calving on pregnancy rates has been observed in different regions of the country (Florida, Oklahoma, and Texas).

In addition, thin cows at calving (BCS 4 or thinner) produce less colostrum, give birth to less vigorous calves that are slower to stand and these calves have lower immunoglobulin levels, thus reducing their ability to overcome early calf-hood disease challenges. All of these data illustrate the importance of targeting mature cows to calve in a BCS of at least 5. Since 1st-calf-heifers have only reached about 85% of their mature weight after calving and require additional nutrients to support growth, it is recommended that they be fed so they are a BCS of 6 at calving.

If your cows currently have inadequate condition, there is still some time to change the BCS prior to calving. Manage your mature cows for a BCS of 5+ at calving. If the cows are in BCS of 5 at calving, a slow gradual weight loss after calving is acceptable. Whereas, if the cows are less than BCS 5 at calving then one needs to hold or increase BCS (weight gain) after calving. However, increasing BCS from calving until breeding will be difficult and costly since cows are lactating.

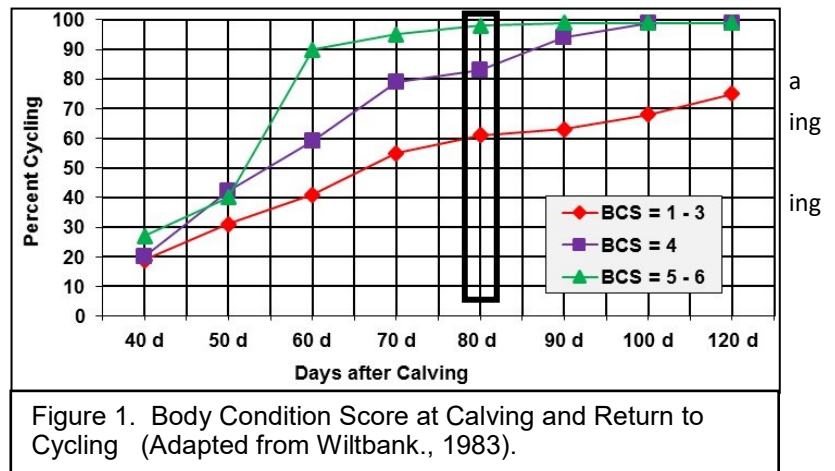


Figure 1. Body Condition Score at Calving and Return to Cycling (Adapted from Wiltbank., 1983).

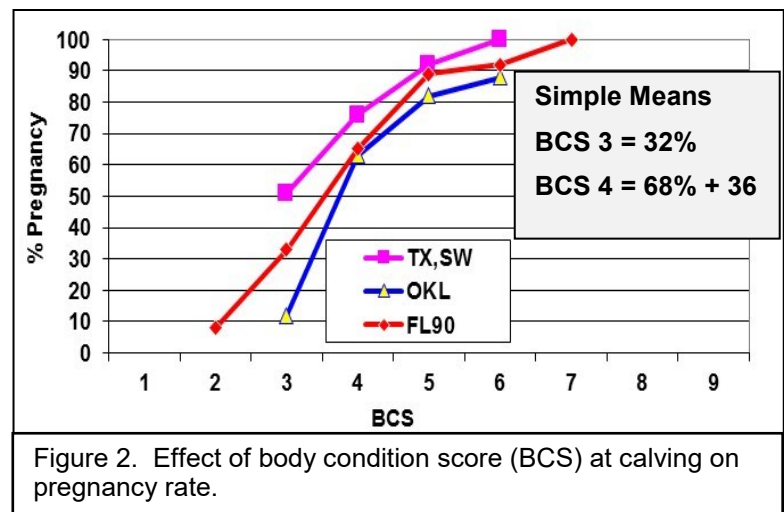


Figure 2. Effect of body condition score (BCS) at calving on pregnancy rate.

Dicamba-Tolerant Soybean and Cotton Updates

Josh Bushong, NW Area Agronomy Specialist

One of the newest herbicide technologies available for soybean and cotton producers is once again an option this growing season. EPA announced last November that they would extend the registration for over-the-top use of the three approved dicamba products (XtendiMax, Engenia, and FeXapan) in Xtend (dicamba-tolerant) soybeans and cotton. This registration has been extended for two years.

These products have remained classified as Restricted Use Pesticides (RUP), while all other dicamba products remained general use. Only certified applicators can purchase and apply these three dicamba products. Applicators must attend the new dicamba training. Even if you attended a dicamba training last year you will have to attend the new training this year.

Oklahoma Cooperative Extension Services will be hosting several training events across the state this spring. Contact your local Oklahoma Cooperative Extension Office, pesticide supplier, or the Oklahoma Department of Agriculture Food and Forestry (ODAFF) to find out when a local training will be held near you. Certified applicators will not receive a new card in the mail this year indicating they have completed the training, (D designation on card). ODAFF will house a master list of applicators who have attended a training.

The product labels for the three dicamba products were revised. While most of the labels have remained similar to the previous versions, there have been some modifications to note. As mentioned briefly earlier only certified applicators may purchase and apply these products. Applicators operating under the supervision of a certified applicator may not purchase or apply these products. Applicators now must generate spray records within 72 hours, last year it was 14 days.

Required recordkeeping will now include planting date. This is due to the fact that the labels now have restrictions for late season applications. Applications can be made up to 45 days after planting dicamba-tolerant soybeans, but not any later because that is when the crop is most susceptible to yield reductions due to drift. Applications can be made up to 60 days after planting dicamba-tolerant cotton for the same reasons. Applications will only be allowed between 1 hour after sunrise to 2 hours before sunset for the entire season to reduce temperature inversion drift risks.

Other small changes on these labels include a minimum spray volume of 15 gallons per acre, applicators can not spray if wind is blowing towards a neighboring sensitive area, and if wind direction changes towards a sensitive area during an application the applicator must stop immediately. One label change that might benefit applicators is that the previous labels prohibited applications if a rain event was expected within 24 hours, but now the labels read that if an expected rainfall event that could result in runoff in the next 24 hours then applications are prohibited.

As a reminder, it is illegal to use other dicamba formulations on dicamba-tolerant soybeans and cotton. Only XtendiMax, Engenia, and FeXapan are allowed to be used over-the-top (postemergence) on these tolerant cultivars. This is because these three formulations are far less likely to cause vapor drift and damage surrounding sensitive plants. Even though these products may cost more than some generic dicamba products on the market, they can also be used in other applications including pastures and many grass crops if drift is a concern.

Anyone interested in more information about dicamba-tolerant soybeans or cotton, upcoming dicamba training events, or other Auxin tolerant traits like Enlist (2,4-D Choline) should contact their local Oklahoma Cooperative Extension Office.



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