

Spring Management of Wheat

By: Josh Bushong, Area Extension Agronomy Specialist

For supposedly being in a La Nina weather pattern, late fall has been a blessing for most wheat producers in northern Oklahoma in terms of receiving moisture and even accumulating some good growing days. Time will tell in the rest of winter will turn cold and dry as predicted. Wheat grain producers are starting to initiate or at least plan out some spring management practices. Topdressing season has already started and potential weed, insect, and disease issues are on the horizon.

As far as how late can wheat be top-dressed with nitrogen, field research conducted by OSU the past four seasons has shown it might be later than you think. These grain only trials have proven that top-dress applications made 80-100 growing degree days after planting, typically early to mid-March, overwhelmingly yielded the same as early and late winter applications. Wheat quality, particularly grain protein, seemed to increase with later nitrogen applications as well.

This doesn't mean to wait till the last minute to top-dress, but this supports extending the window to apply nitrogen. Applying later in the season can increase nitrogen use efficiency. As the crop progresses, a better estimation of grain yield can be more accurately determined and top-dress rates can be altered accordingly. If covering large acreage, wheat producers should initiate top-dress applications sooner to allow enough time to get the job done especially if weather delays application.

Topdressing tank-mixed with an herbicide can be an economical option. Since the sprayer will be using a broadcast nozzle, such as a flat fan, Urea Ammonium Nitrate (UAN) rates should be limited to 10 to 20 gallons per acre depending on conditions. Applications should be avoided when air temperatures rise above 70° and relative humidity is low. Applications should be made prior to jointing stage, which will limit yield loss by allowing more recovery time if crop injury occurs.

Disease management has shown to have good yield savings over the years. If applied timely, most commercially available fungicides have had good yield protection in OSU field trials. If only one application is budgeted, it is best to apply late and protect the flag leaf. Long-term OSU data typically average about 10 to 20 percent higher yield compared to no fungicide. The OSU variety trial near Lahoma has evaluated more than 45 wheat varieties with and without a fungicide applied around the boot to flagleaf growth stage. There was only an average of seven percent yield advantage this year, but specific varieties varied from zero to 17 percent difference. Including all varieties at Lahoma over the past seven years, there has been an average of a 19.2 percent higher grain yield over when a fungicide was applied.

Timely field scouting is the only way to determine if a pest is present and if an application of an herbicide, insecticide, or fungicide is warranted. The only way for one of these pesticides to protect yield and have a positive return on investment would be knowing what pests are present and knowing how much yield potential can be saved if applied correctly.

“Setting Goals for your Operation”

By: Troy Gosney, Major County OSU Extension Ag/4-H

If you look at successful businesses most all will have one thing in common, they have a goal. This drives them to stay focused on the success of their business and push in the direction they are aiming toward. Your Agriculture enterprise should be no different. After all it's your business, and most likely your livelihood. Producers should evaluate their livestock and/or crop operations to determine the goals for the year. Goals serve as the foundation for sire selection and provide guidance as to which traits offer the most economic importance for the operation. Just as crop variety & soil fertility becomes equally as important when establishing goals for yield and forage quality. To establish a clear set of Goals for your operation, you must be able to answer a few questions:

- Have I researched what plant varieties yield best in my soil type?
- How will the livestock or crop be marketed?
- What resources are available for labor and management?
- What are the feed resources and environmental conditions of the operation?
- Do I have the right sires contribute to the overall breeding plan within the operation?

After you have answered these questions and determined your goals, it will be time to assess strengths and weaknesses of your operation. Keeping good fundamental records are key to identifying strengths and weaknesses. Using basic performance parameters such as:

- *calving percentage
- *weaning percentage
- *weaning weights
- *sale weights,
- *feed usage
- *crop yields
- *marketing options
- *input costs
- *supply & demand

Next, establish selection priorities that concentrate on those factors which stand to have the largest impact on profitability.

Whether it's livestock or crops remember that income is derived from performance (sale weight, percent calf crop weaned, carcass merit, crop yield, protein %, tonnage per acre, etc.). Performance is a function of both genetics and environment conditions. It doesn't matter if we are talking about wheat varieties or bulls, superior genetics can be negated by poor management, which emphasizes the importance of separating the impact of management (nutrition, health program) from that of genetics.

When you have determined your operations goals, write them down. Look at them often so they stay fresh on your mind. Share them with others involved so that everyone is on the same page. Keep track of the progress and stay focused. Be sure to make your goals specific-timely- measurable and realistic. I suggest prioritizing them in Short Term – Intermediate Term and Long Term. Short term is anything you want to accomplish in the next year. Intermediate would be anything in the next 2-3 years and long term could be life-long goals. In talking with a friend about setting a goal to lose weight it was determined that :

“Sometimes the hardest part is just getting started” If there is any statistical information that we can assist you with call or come by the Major County OSU Extension Office. Good luck and I hope you have a blessed prosperous 2021!



Preparing for Breeding Season: Act 1

By: Dana Zook, Extension Area Livestock Specialist

Happy New Year! Since breeding season will be upon Oklahoma producers across the state, I thought it fitting to get a jump on what can be done to prepare cattle for this crucial time period. I will lapse back to my high school musical theater days and showcase the “Preparing for Beef Breeding Season Saga”. The headliner this month will be Bulls. A future article will complete the saga with Act 2 focused on cows.

How do you prepare for breeding season? For some producers with a defined breeding season, it can happen almost simultaneously to calving season preparations. Each operation is different but there are many things that are constant. Proper bull management and preparation are a risk management tool for the cow calf producer.

Evaluate your bull battery. Do you have the correct number of bulls to service your herd? If not, take time to seek out one of the many seedstock breeders in Oklahoma. Look through the OCA Magazine for breeders or look at some of the breed association offerings. The number of bulls you need is directly related to the cow to bull ratio. The age of bulls will determine how many cows they can service. A good rule of thumb is to place about the same number of cows or heifers with a young bull as his age is in months. For example, a young bull, 15 months of age, should be able to handle 15 cows in his first breeding season. This applies until two years of age. Mature bulls that have passed a breeding soundness exam can be placed with 25-30 cows.

Bring home bulls in advance of breeding. Purchase new bulls at least 60 days prior to breeding. This allows bulls to adapt to their surroundings, establish social structure with other herd bulls, and adjust to new plane of nutrition. Nutritionally, bulls may need this time for a few extra groceries, or they may need to be slowly scaled back. Bulls sold at sales are often conditioned beyond what is needed during the season. Fat sells in this market but this isn't a bad thing. Once they are brought home, these bulls should be slowly adapted back to a more reasonable diet. Remember that during the breeding season, bulls will (hopefully) be doing their job and won't be receiving any more nutrition than the cows. Research has shown that bulls that are scaled back on nutrition gradually have no impact on fertility. Also note that along with proper nutrition continued exercise will help the bull get into shape before breeding.

Schedule Breeding Soundness Exams with a licensed veterinarian. A breeding soundness exam will check the reproductive capacity and physical soundness of each bull. This is a risk management step that helps alert producers of any issues that may hinder a bull from performing his best. One of the more costly mistakes in the beef industry is going through breeding and then realizing your bull didn't get the cows bred.

Keep an eye on your bulls during breeding. Upon the start of breeding, beef producers expect bulls to get the job done. But issues can arise during breeding that can affect the number of cows that get bred. Bulls that are overworked or obtain an injury may be less likely to get cows bred efficiently. Keep an eye on your bulls and observe bulls while they are working. If any issues are observed, a replacement bull can be substituted to maintain breeding rates.

For more insight on preparing bulls for breeding season, check out the latest "Extension Experience" podcast. You can find our podcast on your smart phone on the Spotify, Apple Podcast, or Google Podcast Apps. Or access our podcast on our Spotlight website by visiting <http://spotlight.okstate.edu/experience/podcast/>.

Winter Feed Management for Beef Cows

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

Reducing winter feed costs for beef cows is important to cow-calf producers since Standardized Performance Analysis records have shown that feed costs account for more than 60% of beef producers' annual cow cost with over one-half of these costs attributed to winter feeding. Forage intake is dramatically influenced by forage quality as well as forage availability, and both of these factors can vary dramatically from year to year and month to month. Thus, determining forage quality is an important step in designing an economical winter feeding strategy. Regularly analyzing all available forage (range and/or hay) is recommended. At a minimum, forages should be tested for crude protein and total digestible nutrients (TDN) which allows a producer to compare the cow's nutritional needs with the base forage and choose the appropriate supplement. This allows one to match forage resources to cow requirements and avoid nutrition gaps or wasting costly nutrients. When comparing supplement alternatives, it is recommended that options be compared on a cost of per unit of nutrient basis. For example, if crude protein is the primary nutrient needed compare prices based on the cost per pound of protein. We will assume that one is evaluating a 20% supplement that cost \$300 per ton and a 38% supplement that cost \$380 per ton. The cost per pound of protein in the 20% supplement would be \$0.75 (\$300 per ton divided by 400 lb. of protein per ton). Whereas the cost per pound of protein in the 38% supplement would be \$0.50 (\$380 per ton divided by 760 lb. of protein per ton).

For cattle grazing low quality forage, correcting a protein deficiency is usually the first supplementation priority. Research has shown that forage intake declines rapidly as forage crude protein falls below about 7 to 8%, a relationship attributed to a deficiency of protein in the rumen. In forages containing less than this amount of crude protein, feeding a protein supplement will improve energy and protein status of cattle by improving forage digestibility and forage intake. In fact, energy supplementation will not be effective if dietary protein is deficient. In general, if ample low quality forage is available, it is recommended that one supplement with a supplement containing a high protein content (greater than 30% crude protein) to stimulate forage intake and digestibility. Whereas, if forage supply is limiting, feeding an intermediate protein supplement (~20 to 25% crude protein) would be recommended. Since one would basically feed double the amount of such a supplement to provide equal amounts of supplement protein, the program would provide additional energy to meet forage deficits.

Another important factor to consider when evaluating supplement alternatives is the labor and transportation expenses associated with supplement feeding (frequency of supplementation). Numerous research studies have shown that supplementing cattle with high protein supplements (cottonseed meal) three times or once weekly usually gives similar performance compared to daily feeding. In contrast, low-protein grain-based supplements should be fed daily to reduce the disruption of ruminal function (due to starch) which results in decreased forage intake and digestibility. Research also suggests that grain-based supplements with intermediate protein levels (i.e. 20%) can be fed infrequently (3 times weekly) with little or only slight reductions in performance. Therefore, feeding supplements on alternate days or three times weekly (eliminate Sunday feeding) instead of daily is a common strategy to decrease cost of production.

In addition, the negative associative effects associated with feeding energy-based supplements should be minimized if the supplements are formulated with high-fiber ("digestible fiber") by-product feeds (wheat middlings, corn gluten feed, distiller's grains and soybean hulls) as compared to grains. Research has generally shown that supplementation with digestible fiber energy sources might still reduce forage intake. However, forage digestibility is generally not reduced with these type supplements due to their low starch content. In general, the data suggests that energy supplements (grain- or digestible fiber-based) with intermediate protein levels (~20%) should be fed daily if the supplementation rate is 1% of body weight or greater per feeding.

The winter supplementation program can be evaluated over the winter feeding period by monitoring cow body condition scores (BCS). 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. Research has shown that the BCS of beef cows at the time of calving has a huge impact on subsequent rebreeding performance. Mature cows should 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.





Hack and spray is an easy method to thin forest overstory and remove undesirable trees. The increased sunlight stimulates many valuable understory plants that wildlife and livestock use.

Thinning Forests for Wildlife, Livestock, and Aesthetics

By: Dwayne Elmore, OSU Extension Wildlife Specialist

Most private forest land in Oklahoma has a dense overstory (often >80%) that prevents sunlight from reaching the ground during much of the year. Many landowners are interested in thinning their forest to achieve wildlife, livestock, and/or aesthetic objectives. Decreasing canopy cover to <60% results in a dramatic herbaceous, vine, and shrub response in the understory which can increase the carrying capacity for white-tailed deer and wild turkey. Further reducing the canopy cover <40% can increase bobwhite numbers and increase native warm season grasses for cattle forage. While prescribed fire alone can be used to open the overstory, it can take many years to achieve. Using a herbicide application with individual tree selection to make the initial thinning can speed up the process and allows the retention of desirable trees and removal of undesirable trees depending on the specific objectives. Prescribed fire can then be used as needed to maintain the appropriate structure and composition.

There are several methods that can be used to thin forests, but hack and spray or girdle and spray is often the simplest and most desirable. This is especially true for non-commercial timber that is larger diameter and has thick bark. The hack and spray or girdle and spray method can be used any time of the year except for during spring sap flow (March-early May). Fall is an excellent time to use these techniques due to cooler weather and lack of ticks. The only downsides are that tree identification and estimating canopy cover are more difficult once leaves drop.

For most tree species in Oklahoma, the herbicide imazapyr is very effective for hack and spray. If using imazapyr, you will need a spray bottle and a hatchet. Choose a hatchet with a longer handle that is weight forward as this will make work easier. Apply one hack mark for every 3" DBH (diameter at breast height) of tree. The hack marks should penetrate the outer bark and just into the inner bark (cambium). Then, apply 1 milliliter (usually 1-2 sprays from most spray bottles) of a solution with 75% herbicide product (apx 28% active ingredient) and 25% water. Hacks should be at a downward angle (about 45°) to form a cup that can hold the herbicide solution. After making the hack, open the hack wound slightly and spray the herbicide solution into the wound to allow for herbicide to enter the cambium. Then remove the hatchet. Do not overspray to the point that herbicide runs down the bark to the soil as imazapyr is soil active. Use chemical gloves and eye protection as imazapyr is caustic and can cause eye injury. If using this method, you will get it on your face, so eyewear is a must.

Imazapyr is not effective for hackberry/sugarberry (*Celtis* genus) and is less effective at killing legumes such as redbud and locust. If you wish to control these species of trees, you can mix the herbicides triclopyr and imazapyr (50% triclopyr, 50% imazapyr). For these tree species that are not susceptible to imazapyr, you will need to be completely girdle the tree with a chainsaw or the hatchet marks need to overlap. Fill the entire wound (entire diameter of the tree) with the herbicide solution. A triclopyr solution can also be used alone. This solution should be 50% herbicide product (apx 44% active ingredient) and 50% water. Apply the solution to the entirety of girdle or the overlapping hatchet wounds. Only use the amine formulation of triclopyr whether mixed with imazapyr or used alone (look at chemistry description on front page of chemical label for the word amine, or triethylamine salt). Many triclopyr products are the ester formulation which is not as effective for hack and spray or girdle and spray.

If you are only removing smaller diameter (<6" diameter at base) thin-barked tree species (e.g. tree-of-heaven, maple, locust, privet, sweetgum, willow, and ash), a basal bark application of herbicide can be used. A backpack sprayer will be needed as this method requires a lot of solution for each tree but you do not need to wound the tree with a hatchet or chainsaw. For basal bark, the entirety of the stem must be coated with the herbicide solution. It is recommended to spray from the base of the stem (at ground level) up apx 12" and fully coat the entire circumference of the stem. Leaving an unsprayed portion of the stem will reduce effectiveness. For this method, use the ester formulation (look at chemistry description on front page of chemical label for the word ester) of triclopyr. The recommended herbicide solution is 25% herbicide product (apx 60% active ingredient) and 75% oil. The oil acts as a surfactant preventing the herbicide from running down the stem and allowing time to penetrate the outer bark (this is why this method only works on small thin barked stems). Diesel or kerosene can be used in place of crop oil.

The Game Has Changed

By: Trent Milacek, Extension Area Ag Econ Specialist

Was 2020 bad for agriculture? Farmers have struggled against low prices for half a decade waiting for ample or record supplies to dry up. Farmers have become experts at patiently waiting in order to survive until relief arrived. Finally, it has come.

The soybean price on 12/31/19 was \$9.56/bu. but now is \$14.22/bu. The price of hard red winter wheat was \$4.86/bu. but now is \$6.23/bu. The price of corn was \$3.88/bu. but now is \$5.17/bu. These are not trivial changes; the magnitude of commodity price increases in the past year is profound.

If percentages can paint a better picture, soybeans prices have increased 49%, hard red wheat increased 28% and corn increased 33%. Basis bids have also increased substantially on a local level bringing cash prices for grain sorghum, corn and wheat closer to the futures price increase of soybeans.

What does this mean for profitability? Time and again producers see inputs increase with increasing crop prices. However, the recent price increase has been fast and that gives opportunities. Consider prepurchasing inputs in order to take advantage before input prices can react.

If it is assumed that input costs are similar to past years, then farmers have much more leverage in the 2021 growing season. A soybean crop that may have broken even at 20 bu. now only requires 10.2 bu. to generate the same desired revenue. A 30 bu. wheat crop drops to 21.6 bu. or a 60 bu. grain sorghum crop now falls to 40 bu. to generate the same revenue on changes in futures prices alone. Farming is not simple but higher prices simplify things.

Never consider that prices or input costs or weather predictions are set in stone. If 2020 has taught producers anything it's that volatility in production and prices continues to grow. Soybean prices are on the precipice of trading into a new trading channel. As mentioned earlier, it has been over 5 years since that has occurred. Excitement after years of suppression is not terrible but be cautious in planning.

There are many decisions to make with this new price structure. Should cropping systems be changed? Higher prices assist lower yields to breakeven but is it worth the risk of adopting a more difficult crop like soybeans? With high risk comes high reward but some producers are tired of the risk. Higher prices will shift acres in Oklahoma back to wheat but those decisions won't be made for another year. The current wheat crop has already been determined.

Flexibility and attention to price risk management is more paramount now than in the past. As prices increase price volatility invariably increases. If volatility is measured as a percent change then it follows that higher prices will see larger daily price moves. This causes a great deal of stress when marketing grains, so have a plan to deal with those marketing decisions. Selling 5,000 bushels of soybeans and seeing the price increase by \$0.50/bu. the next day can be damaging to marketing self-esteem.

Knowing break evens and having a goal in place before the growing season can help offset some, but not all, of that stress. Making a profit is a good start but knowing the potential home-run price allows for some understanding of realistic marketing goals.

The important first step is to plan to sell into this bull market. That is the simple part. If you will change cropping systems drastically, consider the additional risk and strain that will put on your operation. Will forward contracts alleviate that stress? Will revenue crop insurance cover those forward contracts if weather is poor?

It is good to have options and the opportunities in 2021 will be embraced by the agricultural community. Now more than ever the OSU Extension service is here and ready to help you with your farm business planning.

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/>.

We hope you consider listening to Extension Experience.





RANCHERS' THURSDAY LUNCHTIME SERIES

Managing Cattle and Forages in a Dry Weather Pattern

Join our Beef Cattle Extension team, experienced livestock marketers and ranchers to learn and share beef cattle production, management and marketing tips.

- ▶ **Thursday, January 28, 2021 | 12:30 p.m.**
 - Understanding the ENSO Weather Patterns
 - Gary McManus, State Climatologist, Oklahoma Climatological Survey
 - U.S. Drought Monitor and USDA Financial Assistance Programs
 - Brad Rippey, Meteorologist, USDA
 - Using Oklahoma Mesonet Soil Moisture Tools
 - Wes Lee, Agriculture Coordinator, Oklahoma Mesonet
- ▶ **Thursday, February 4, 2021 | 12:30 p.m.**
 - Feeding Alternatives to Stretch Forage Supplies
 - Paul Beck, Extension Livestock Specialist, Oklahoma State University
 - Late Winter Management of Cool Season Forages
 - Brian Pugh, Northeast Area Extension Agronomy Specialist, Oklahoma State University
 - Jump Starting Warm Season Forages with Limited Rainfall
 - Leland McDaniel, South Central Extension Forage Specialist, Oklahoma State University

LIVE WEBINARS

- ▶ **Register Online:**
dasnr.zoom.us/webinar/register/WN_-qjRZDiKQFOUP-dlvMNAaA

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