



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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Effect of Nutrition on Fetal Programming

Dana Zook, NW Area Livestock Specialist

There has been a great deal of research in the last decade on the topic of fetal programming. Much of this research has looked at the potential benefit of nutrition on cow and her calf during gestation. To me personally, fetal programming has always been a subject that is a little out there. It is true that during gestation, cows have the lowest nutritional requirement compared to any other time during the production cycle. But, will roughing cows through the gestational period affect the future performance of the calf she is carrying? I struggle to balance this idea with the recent support of low-input cows and their benefits on the bottom line of the cow-calf producer. Is there a happy medium here? Research from the University of Nebraska suggests there is a balance of these two ideals; supplementing the cow efficiently while also “programming” the calf to perform at the highest level through weaning and beyond.

Initially, much of research on fetal programming began as the investigation of the affect of nutrition on cow performance. Would additional nutrition during the post-partum period allow cows to perform at a higher level therefore having improved reproductive performance? A majority of the research studies from the University of Nebraska analyze the effects of moderate supplementation of 1 pound of a 42% supplement per head daily compared to no supplementation on cows grazing winter range. With this supplementation level, cows had higher body weights and improved body condition scores at breeding compared to unsupplemented cows. Improved body condition from supplementation led to earlier conception rates, however pregnancy rates were not different between groups. Cows that did not receive supplement continued to get bred but not as efficiently as those that were supplemented. More live calves were born to supplemented dams, but neither birth nor weaning weights of these calves were increased due to supplementation

The most interesting data from this research is found beyond the impacts of dam reproduction. Heifers born to supplemented dams were younger at puberty and had higher pregnancy rates compared to their counterparts. Conversely, heifers born to unsupplemented dams did have improved feed efficiency over heifers born to supplemented dams. Researchers eluded that the development of the heifer under a nutrient limited environment in utero may have programmed her to perform more efficiently later in life.

Supplementation also let to some interesting benefits in steer progeny. Steer progeny

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from supplemented dams were heavier entering the feedlot, however feedlot daily gain and efficiency were similar between groups. However, final live body weights and hot carcass weights tended to increase for those with supplemented dams. In addition, a greater proportion of steers born to supplemented dams achieved Choice or better quality grade.

More research needs to be done to confirm which production factors are most influenced by nutrition, however, there is evidence that some aspects of calf performance are positively influenced by nutritional management during gestation. For more information regarding fetal programming or winter supplementation, contact your local OSU Extension Educator for assistance.

Do you still have questions about VFD?

Dana Zook, NW Area Livestock Specialist

I have provided a number of educational sessions on VFD over the last couple months and I know there have been other entities getting the word out as well (OCA, local coops, feed dealers). Each session I attend answers another question I have or further clarifies current information that is out there. For those of you who know about VFD but may not have all the details straight, I would encourage you to contact me, or other area and state specialists for clarification. OSU Extension is a solid source of VFD information for producers and in my opinion it's one of the most consistent sources of information.

It is important for producers to be proactive at this point. Start saving feed tags! By doing this, producers will be able to show their vet the current product and what amount (g/ton) of drug is included – this will make the process of getting a VFD from veterinarians much more streamlined.

I recently was reviewing the VFD information on the FDA website and ran across two lists that show over-the-counter (OTC) drugs that will be transitioning to VFD or prescription (Rx) status. I thought this might be helpful to know the trade names of these drugs since none of us may deal with them on a daily basis.

Drugs Transitioning From OTC to VFD Status	
Established Drug Name	Examples of Proprietary Drug Name(s)
Chlortetracycline (CTC)	Aureomycin, CLTC, CTC, Chloratet, Chlorachel, ChlorMax, Chlortetracycline, Deracin, Inchlor, Pennchlor, Pfichlor
Chlortetracycline/sulfamethazine	Aureo S, Aureomix S, Pennchlor S
Chlortetracycline/sulfamethazine/penicillin	Aureomix 500, Chlorachel/Pfichlor SP, Pennchlor SP, ChlorMax SP
Hygromycin B	Hygromix
Lincomycin	Lincomix
Oxytetracycline (OTC)	TM, OXTC, Oxytetracycline, Pennox, Terramycin
Oxytetracycline/neomycin	Neo-Oxy, Neo-Terramycin
Penicillin	Penicillin, Penicillin G Procaine
Sulfadimethoxine/ormetoprim	Rofenaïd, Romet
Tylosin	Tylan, Tylosin, Tylovet
Tylosin/Sulfamethazine	Tylan Sulfa G, Tylan Plus Sulfa G, Tylosin Plus Sulfamethazine
Virginiamycin	Stafac, Virginiamycin, V-Max

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To get more information, follow the link:

<http://www.fda.gov/AnimalVeterinary/DevelopmentApprovalProcess/ucm482107.htm>

For information about Drugs Transitioning from OTC to Rx Status view the following link:

<http://www.fda.gov/AnimalVeterinary/DevelopmentApprovalProcess/ucm482106.htm>

Are Soybeans a Profitable Crop Enterprise for 2017?

Trent T. Milacek, NW Area Ag Econ Specialist

Producers across the country are struggling to find cropping systems that are both profitable and viable on their operations. Since 2012, wheat and corn prices have fallen by 60 percent of their previous highs. Unfortunately, the operating and fixed costs of operations have not fallen by the same amount resulting in budgets that are struggling to break even. One alternative crop available to western Oklahoma producers could be soybeans.

While not immune to falling prices, soybean prices have not fallen as much as corn and wheat. Since 2012, soybean prices have fallen by 40 percent of recent highs, therefore retaining more of their value compared to traditional crops grown in the region. Growing soybeans could prove profitable for operators assuming they can produce the crop and market it effectively. Soybeans require more water compared to traditional summer crops like sorghum, so a rainy spring and summer are required to produce adequate yields.

The costs of production could vary widely across operations. While soybeans are often grown as a double-crop in Oklahoma, higher yields can be obtained when growing them as a primary crop. According to the 2015 Oklahoma Ag Statistics publication the two-year average yield, including 2013 and 2014, was 25.8 bu./acre. The 2017 soybean crop delivered to area terminals is being bid at approximately \$9.75 per bushel. This means that if an average crop was produced and forward contracted at current prices, a producer could expect to achieve a total revenue of \$251.55 per acre.

Soybean yields can be volatile and it is advisable not to forward contract 100 percent of total expected production. It is helpful to determine a breakeven yield in order to formulate a marketing strategy. Some operating costs per acre include rent at \$40, \$50 for seed, \$55 for pesticide and herbicide applications, \$10 for insurance, \$20 for fertilizer, \$15 for planting and \$35 for harvest. Using these figures, operating costs total \$225 per acre.

Using \$9.75 per bushel for a forward contracting price and \$225 per acre for operating costs, the producer can estimate a breakeven yield of 23 bushels per acre. A producer would have to forward contract approximately 90 percent of their expected production to cover operating costs. That may be too much risk for an operation with little experience in growing soybeans 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 maintenance, depreciation and labor. Those costs must be calculated at the farm level to complete the budget. A producer should ask themselves if \$27 per acre is enough to cover the additional costs on their operation. Alternatively, is the potential for a return of \$27 per acre above the listed operating costs a more attractive option compared to growing other crops?

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.

Winter Crops Update

Josh Bushong, NW Area Agronomy Specialist

November was blessing for a few, but was a nuisance for many as our wheat and canola crops experienced above average temperatures and below average rainfall in north central Oklahoma. For the wheat farmers trying to grow pasture, we needed warm temperatures and good soil moisture to grow much needed forage. Fields that started out late from delayed planting or resowing due to pest infestations have had the extra time with good growing temperatures, but adequate soil moisture has been our main limiting factor. Unfortunately, most of the region has become very dry over the past month and a half. Most of the region has gone several weeks without a significant rain of 0.1 inches or more.

The current drought has started to adversely impact the wheat crop. Reports have ranged from leaves starting to have blue discoloration to leaves and tillers becoming chlorotic and dying off. Which isn't a major concern for the small grain producers that plan to take these crops to harvest since most of these crops have plenty of tillers to spare. It does matter for the producers running stockers. The continuation of dry conditions will limit the amount of forage produced the rest of the year as we approach winter and crop dormancy.

For the wheat producers that had decent moisture late October and rains early November, there were some reports of fall diseases. Leaf rust was noted to have affected older leaves in susceptible varieties where crop canopies were thick. There were some concerns about leaf spotting disease like tan spot, but were very localized and didn't appear to have had caused much damage. Disease suspecting fields should be closely monitored through late winter and early next spring. If the winter is mild and there is sufficient moisture present, then early spring fungicides might be warranted. Previous OSU data has shown no grain yield response to fungicides applied in the fall. If the disease is limiting fall forage production, then a fall fungicide application might be beneficial.

The winter canola crop has been looking very well this past month. While there have been some fields that are showing drought stress, a majority of the plants have developed large enough carbohydrate reserves in the roots to survive on this winter after dormancy. Plants need a decent tap root to become winter hardy. In addition to good plant size, the plants need transition temperatures to acclimate to freezing conditions. The light freeze events we've experienced so far have hardened off the plants. During cold winters, the canola plants will often shed leaves. These leaves will often turn a yellow to brown in color when the plant goes dormant. If this winter is fairly mild, as predicted by some, then the plant will retain some green leaves throughout the winter. As long as the root and growing point are pliable, then the plants are still alive.

The only issues some canola crops might have winter kill issues would be if the plants became too lush. Excessive fall growth in canola can be detrimental to winter survival if the plant's growing point starts to elongate and grow vertical. This happens when the plants compete for sunlight, which is often worse in thick stands that are planted early. Ideally we want the plant to stay in more of a true rosette and keep the growing point, or crown, close to the soil surface to prevent it from freezing.

As we head into winter, it is still important to monitor all winter crops. Production issues to always keep an eye on include weeds, insects, diseases, excessive grazing, and fertility. As temperatures begin to decline, herbicide efficacy will start to decrease. If herbicides are still needed this fall or early next spring, then it is wise to wait for a few consecutive days with warm temperatures (>55° F) to get the weeds to begin growing again. Actively growing weeds are much easier to control than dormant ones. If crop growth continues due to a mild winter, fertility may become a larger factor to manage. Early detection of a crop issue can often mean the difference between a decent crop and a not so decent crop.



CANOLA COLLEGE 2017
Chisholm Trail EXPO Center
111 W. Purdue
Enid, OK
January 19, 2017

Taking Canola Production to the Next Level

Sponsored by Great Plains Canola Association, Oklahoma State University, Kansas State University, USDA-RMA, and the Canola Industry

Register for Canola College at www.canola.okstate.edu

Once again, the Great Plains Canola Association, Oklahoma State University, Kansas State University, USDA-RMA, and partners from the canola industry are teaming up to conduct Canola College.

Canola College 2017 will be held **January 19, 2017** at the Chisholm Trail EXPO Center in Enid, OK.

This will be the premier canola education/training event in the region in 2017. ***Canola College 2017*** is for anyone with an interest in the canola industry including: experienced and first time growers, crop insurance agents, members of agricultural governmental agencies, and canola industry service and product providers. Attendees will hear from canola experts on a variety of key topics and will have the opportunity to visit with industry members who provide the goods and services needed to produce, handle, and market the crop.

Canola College 2017 topics will include:

- Canola Basics** – Mike Stamm, KSU Canola Breeder, and Heath Sanders, OSU SW Area Extension Agronomy Specialist
- Canola Planting Technology** – Josh Bushong, OSU NW Area Extension Agronomy Specialist and Kraig Roozeboom, KSU Cropping Systems Researcher
- Advanced Production Practices** – Bob Schrock, Grower near Kiowa, KS and Jeff Scott, Grower near Pond Creek, OK
- Risk Management** – Francie Tolle, USDA-RMA Regional Office Director, OKC
- Canola Economics** – Trent Milacek, OSU NW Area Ag Economics Specialist
- Weed Control** – Misha Manuchehri, OSU Extension Weed Scientist
- Insect Management** – Kris Giles, OSU Research Entomologist
- Canola Plant Health Management** - John Damicone, OSU Extension Plant Pathologist and Paul DeLaune, TX A&M Soil Scientist
- Canola Learning Lab** – Coordinated by Josh Lofton, OSU Cropping Systems Specialist

The very popular **Canola Learning Laboratory** will be continued in 2017. Attendees will see demonstrations and gain experience with: canola biology, canola production equipment, and the latest in spray technology. Participants will have the opportunity to learn to identify common canola production pests.

Individuals can register for ***Canola College 2017*** at www.canola.okstate.edu. For more information on Canola College, contact Ron Sholar, Executive Director, GPCA, at Jrsholar@aol.com or Josh Lofton, Extension Cropping Systems Specialist, OSU, at josh.lofton@okstate.edu.

2017 FEEDLOT RECEIVING CALF HEALTH & WELL-BEING CONFERENCE



JANUARY 9-11, 2017

**CONOCO-PHILLIPS OSU ALUMNI CENTER
STILLWATER, OKLAHOMA**



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"Consumer Perceptions of Animal Health on Human Health and Food Safety"
Glynn Tonsor, Kansas State University

"Industry Impact of Receiving Health: A North American Perspective"
Shawn Walter, Professional Cattle Consultants

"Calf Immune Function, Stress, and Disease Challenges"
Jodie McGill, Kansas State University

"Characterization of Animal Health Challenges in Beef Cattle vs. Holstein Cattle"
Luis O. Burciaga-Robles, Feedlot Health Management Services

"Genetics of Health"
Holly Neibergs, Washington State University

"Weaning and Preconditioning Nutrition Role in Health Maintenance"
Clint Krehbiel, Oklahoma State University

"Role of Pre-weaning and Weaning Vaccination in Health Maintenance"
Mark Hilton, Elanco Animal Health

"Management of Marketing, Transportation, and Handling Stress"
Ben Holland, Cactus Feeders

"Cattle Acclimation and Low Stress Cattle Handling"
Tom Noffsinger, Production Animal Consultation

"Arrival Health Programs for High Risk Calves"
Dan Thomson, Kansas State University

"Metaphylactic and Feed Grade Antimicrobials"
Eric Behlke, Feedlot Health Management Services

"Role of Feed Additives and Antibiotics"
Spencer Swingle, Cactus Feeders

"Feeding Programs for High Risk vs. Low Risk Cattle"
Mark Branine, Zinpro & Mike Hubbert, New Mexico State University

"Behavior of Stressed and Diseased Calves"
Tom Portillo, Friona Industries

"High Risk Calf Implant Strategies"
Wade Nichols, Merck Animal Health

"Ancillary Therapeutics"
Blake Wilson, Oklahoma State University

"Antimicrobial Selection"
Mike Apley, Kansas State University

"Impact of Pen Environment: Mud, Shade, Bunk Space"
Terry Mader, University of Nebraska-Lincoln

"Hospital Pen Management"
Nels Lindberg, Production Animal Consultation

"Considerations for Management of Chronic Calves"
Kendall Karr, Cactus Feeders

"Practical Considerations - Veterinarian"
Bob Smith, Veterinary Research & Consulting Services, LLC

"Practical Considerations - Animal Science"
Steve Armbruster, Steve Armbruster Consulting, Inc.

"Research Needs"
Mike Galyean, Texas Tech University

FOR MORE INFORMATION: BEEFEXTENSION.COM

Save the Date!

NW Area Ag Educator In-service

January 24th-25th

In-service to include four stops in Kay and Noble Counties

-Watch your email more details on this in-service! -



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