

TIMELY TOPICS

OSU EXTENSION - NORTHEAST DISTRICT
February 2023 – Volume 43 – Issue 2



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Calving Season Management

Barry Whitworth, DVM, Senior Extension Specialist, Dept. of Animal and Food Sciences, OSU

The National Animal Health Monitoring System, Beef Cow-calf Study 2017 (NAHMS2017), found in calves less than three weeks of age, the most common cause of death was calving/birthing problems (24.7%). According to Scott Clawson, Northeast District Area Ag Economist, calves raised is a very important source of income for beef cattle operations. With this in mind, cattle producers need to do everything they can to ensure that newborn calves have the best opportunity to survive. Management of the cow-calf herd to reduce death rates in calves should result in more pounds to sell at weaning. Studies have shown that lack of managing cattle during the calving season increases deaths around the time of birthing. Developing a protocol to deal with heifers and cows during the calving season should be a high priority on beef cow-calf operations.

A calving protocol should be developed with the help of the producer's veterinarian. The protocol should be easy to read and understand. The step-by-step plan will provide details on how to deal with a difficult birth. Producers should consult with their veterinarian about signs to look for that indicate trouble with the birthing process. They should specifically ask their veterinarian when he/she needs to be contacted to assist with the difficult calving. Other helpful sources to use to develop a management strategy are County Extension Agriculture Educators as well as fellow cattlemen. All of these individuals have a wealth of knowledge that can be utilized to write a protocol for the calving season.

The key to any successful calving season is locating animals early with calving difficulty. This requires frequent observation of heifers and cows. Unfortunately, many cattle operations only observe their cattle once or twice per day according to the NAHMS2017. According to Dr. Dawson, Theriogenologist with the College of Veterinary Medicine at Oklahoma State University, pregnant heifers and cows should be monitored at least three times per day during the calving season. By observing cattle frequently during the calving season, producers should be more aware of heifers and cows in distress.

Birthing occurs in three stages. Stage one is the dilation of the cervix. Stage two is the delivery of the calf. Stage three is the expulsion of the placenta. Stage two is where all the action is. This stage begins with the presentation of the water bag and ends when the calf is extruded from the birth canal. According to Oklahoma State University fact sheet E-1006 *Calving Time Management for Cows and Heifers* written by Dr. Glen Selk, stage two should take about 1 hour for heifers and 30 minutes for cows. When stage two labor last longer than two hours, calf mortality increases significantly. Many cattle operations allow heifers and cows to labor for two hours or more before intervening according to the NAHMS2017.

A heifer or cow found not progressing in stage two labor needs assistance. Producers must decide if they are capable of handling the situation or not. If not, a veterinarian should be contacted. Any delays at this time could result in the loss of the calf and/or health issues with the heifer or cow.

Every calf born is a potential source of income for the ranching operation. For this reason, producers should develop a management strategy for the calving season. For additional information on calving management, producers should

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contact their local veterinarian and/or Oklahoma State University County Agriculture Educator. Another source of information is E-1006 *Calving Time Management for Cows and Heifers* written by Dr. Glen Selk. This fact sheet is available at County Extension Offices or at <https://extension.okstate.edu/fact-sheets/calving-time-management-for-beef-cows-and-heifers.html>.

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Botulism

Dr. Kris Hiney, Associate Professor and Extension Specialist for Horses, OSU

<https://www.fda.gov/animal-veterinary/outbreaks-and-advisories/fda-cautions-horse-owners-not-feed-recalled-lots-top-rockies-alfalfa-cubes-due-reports-illness-and#:~:text=At%20this%20time%2C%20it%20appears,that%20can%20lead%20to%20botulism.>

FDA Cautions Horse Owners Not to Feed Recalled Lots of Top of the Rockies Alfalfa Cubes due to Reports of Illness and Death

FDA is aware of at least 98 horses in Colorado, Louisiana, New Mexico, and Texas who showed neurologic symptoms. At least 52 of these horses have died or were euthanized due to declining health.

*These alfalfa cubes were made by Manzanola Feeds of Manzanola, CO, and FDA has confirmed the firm distributes products to feed stores and co-ops in 8 states: AR, CO, IL, LA, NM, **OK**, TX, and WI (this information was updated on January 20, 2023, to remove Kansas and Missouri from the initial distribution list). Further distribution may be possible, so it’s important to check the date code if you have this product. (Date codes 111222, 111322, 111422, 111522, and 111622)*

Update: On January 19, 2023, FDA finalized laboratory testing of samples of Top of the Rockies alfalfa cubes that confirmed the presence of Clostridium botulinum type C, a bacteria that can lead to botulism.

Botulism is not a disease most horse owners typically worry about, but this year several hundred reported cases made the news. The culprit – contaminated feed, specifically alfalfa cubes.

The following is a short synopsis on Botulism in horses by Kris Hiney

Luckily botulism is relatively rare, but can be fatal. It is caused by a toxin produced by bacterium *Clostridium botulinum*. This bacteria has neurotoxic affects, and is used commercially as Botox. As it is a neurotoxin, symptoms will include flaccid paralysis, or essentially weakening of the muscles. Horse’s gaits may appear unusual or stiff, they may have muscle tremors, or lie down more than normal. Horses may also show signs of facial paralysis through the eyelids, lips and tongue. Death typically occurs from paralysis of the heart and lungs.

Botulism is typically a foodborne illness, but can also be caused by an infected wound. In humans, botulism is most likely associated with improperly stored/canned food. In horses, spoiled feed is also the main cause, typically feed contaminated with an animal carcass. This is the suspected cause of the outbreak in December of 2022.

Prevention is largely centered on not feeding spoiled feed or grain (presence of mold) or any feed that appears to have dead animals in it. Vaccines are available, but only for the strain (type B) associated with forage. Horses that are routinely fed haylage/silage are recommended to be vaccinated for botulism as horses are more sensitive to botulism than other species. As decaying grass, hay or spoiled silage could be a source of botulism, owners should routinely remove decaying hay from the horse's environment. Do not consider it as still an acceptable source of feed and force the horse to "clean it up".

Note that alfalfa cubes or pellets do not cause an increased risk of exposure to Botulism. This incidence was isolated to specific lots from one company. As always, visual inspection of feeds should be part of regular feeding routines.

Raising the Orphaned Calf

Rosslyn Biggs, DVM, OSU Center for Veterinary Health Services, Director of Continuing Education and Beef Cattle Extension Specialist

Even with the best care and management, it is not uncommon for beef producers to find themselves with an orphaned calf. There are many factors that can contribute to a calf being orphaned, such as weather conditions, dystocia, twins and individual cow accidents or illness unrelated to birth. Although it is possible to graft an orphan to another available cow, this option is not always available.

Raising a beef calf on a bottle or a bucket can be time consuming and may require additional expense. Additionally, managing a calf's health and nutrition can present challenges if the calf was not thriving at the time it was orphaned. This article contains considerations for the producer when creating a plan for raising an orphaned calf.

Nutrition

Age has significant influence on the nutritional considerations for an orphaned calf. High-quality colostrum should be fed to calves that lose their dams at less than 24 hours of age. Ongoing research supports early colostrum administration is best if delivered by four hours of age. After six hours of age, the calf's intestine begins to lose the ability to adequately absorb colostrum components. Virtually no intestinal absorption of antibodies occurs after 24 hours of age. Producers should not wait to administer colostrum if there is evidence the calf has not nursed.

Beyond the first day of life, calves need 10-12% of their body weight in milk per day. A good rule of thumb is that one gallon of milk equals eight pounds. The total quantity of milk should be divided into multiple feedings with a minimum of two feedings. Feeding from a bottle or bucket are both options, however, nursing from a bottle closely mimics the nursing of the udder. It is often easier to start a calf on bottle.

The best option for feeding will most often be in the form of a milk replacer. The quality of a milk replacer is critical and the calf should be consistently fed with the same brand. Milk replacers should, at minimum, be at least 15% fat and 22% protein. Milk should be at 101-105 degrees Fahrenheit when fed.

Within the first week after birth, offer a calf starter ration of pellets or other creep feed along with high quality hay. Offering very small amounts and refreshing when stale is important initially as the calf will not consume very much, but early rumen development is reliant on ingestion of dry hay and feed. Once the calf is beginning to consume one-half to

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two pounds of dry feed daily, slow bottle weaning can be initiated. Unlike in dairy calves, the best results are seen if a beef calf is fed milk for several months. Calves should be transitioned slowly and should be eating 2-3% of their body weight by eight weeks of age. At this point, the calf's weight should have doubled since birth.

Additionally, calves will not consume enough milk to maintain their hydration status. Fresh clean water should always be available. Water buckets, bottles and feed pans should be regularly cleaned and sanitized to prevent disease.

Temperature

Tracking and maintaining calf temperature is important when managing orphans. Calves, especially newborns, do not have the ability to easily maintain their core temperatures. Inexpensive digital thermometers can be used to determine calf rectal temperature. Environmental conditions, such as wind and outside temperatures below 50 degrees Fahrenheit, may lead to cold stress. Calves may need to be taken indoors for rewarming and fluids if their temperature drops below 99 degrees, especially in the winter. Calf jackets are regularly used by the dairy industry to maintain calf temperatures.

Bedding can also help maintain calf temperature. Deep bedding such as straw should be available and regularly refreshed. Housing should be well-ventilated, clean and dry.

Health

Monitoring the health of orphaned calves should occur at every feeding if not more often. Fever, decreased appetite, coughing and diarrhea can all be clinical signs of concern. Producers should work with their veterinarians in advance to develop treatment plans for commonly seen conditions in bottle or bucket calves. Medications used in these treatment plans, such as electrolytes, antibiotics and anti-inflammatories, are good to have on hand.

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How Does Extended Wheat Stocker Grazing Impact Economic Returns?

Eric A. DeVuyst, Professor and Rainbolt Chair, Dept. of Agricultural Economics, OSU

Roger Sahs, Associate Extension Specialist, Dept. of Agricultural Economics, OSU

With hay supplies extraordinarily tight in Oklahoma and winter still here, both wheat stocker producers and cow-calf producers are looking for forage sources to get by until stockers are sold or grass greens up for grazing. One temptation is to continue grazing dual-purpose wheat later than is recommended by Oklahoma Cooperative Extension Service personnel. This is a temptation to be resisted!

Past research demonstrates significant economic losses from grazing winter wheat past the physiological growth phase called first hollow stem. Depending on weather and location, first hollow stem usually appears around March 1 but in warm winters it occurs in February. Fieser et al. reported a 1% loss in wheat grain yield from grazing just one day past first hollow stem. Even at that seemingly harmless loss, DeVuyst et al. show losses of about \$1 per acre net of cattle gain and wheat grain loss. However, Fieser et al. evaluated losses on stockpiled wheat forage, a rather uncommon management practice in Oklahoma. Alternatively, Redmon et al. evaluated losses from more conventionally managed wheat grazing. Their results show a 5% average loss in wheat grain yield from just one day of extended grazing. DeVuyst et al. report that equates to over \$11 per acre in lost net returns after considering the value of cattle gains and wheat grain losses.

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Grazing for seven days past first hollow stem has substantially worse economic outcomes. Grain yield reductions range from 6% (Fieser et al.) to 33% (Redmon et al.). Using these estimates of grain yield loss, DeVuyst et al. report economic losses ranging from almost \$4 to \$75 per acre. Taylor et al. combined the two datasets and report wheat grain loss of 18% with a resulting economic loss of \$35 per acre (DeVuyst et al.).

Regardless of prior management, the data clearly show that grazing past first hollow set is not economically advisable. Added cattle gains do not justify lost wheat grain yield. Producers are encouraged to check wheat frequently as temperatures warm and wheat is actively growing to avoid extended grazing.

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The Significance of Interest Rates

Scott Clawson, Area Ag Economics Specialist



Interest rates have been on the move in recent months. Relative to cow calf operations, interest rates have an impact on both the direct and indirect cost categories. Direct costs like feed, pasture fertility, and other items that might be purchased on a revolving line of credit will likely see an increased interest cost after renewal. Additionally, financed items like tractors and farm trucks that are tied to the operations overhead will see a less producer favorable interest rate as well. But the foundation that most production agriculture balance sheets are built on is land. Due to the sheer magnitude of investment that land requires, movements in the interest rate can be particularly impactful.

Increasing interest rates are thought to be bearish on land values. There are several key issues that factor into a financed land purchase. Those are the financed amount, the term of the loan, and the interest rate. These contribute

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significantly the most important number which is the total paid. This includes the amount borrowed and the interest paid.

The table below illustrates the impact that a move from 5% to 8% interest on a \$300,000 loan with a 30-year amortization will have on the total paid.

Interest Rate	Loan Amount	Loan Term (yr)	Payment Structure	Payment	Interest Paid	Total Paid
5%	\$300,000	30	Annual	\$19,670	\$290,106	\$590,106
8%	\$300,000	30	Annual	\$26,928	\$507,842	\$807,842

The impact on interest paid and thus total paid is stark. This sheds light on the investment as a whole and the importance of our alternatives to minimize the total paid. Exploring options like shortening the term or paying more down may be considerations

as rates climb. In the options listed next, “A” reduces the term to 20 years. “B” assumes a cash down payment but keeps the 30 year term. “C” makes a cash down payment and reduces the term. Note that all options are significant improvements to the total paid as compared to the initial higher interest rate option above where the total paid is \$807,842.

Option	Interest Rate	Loan Amount	Loan Term (yr)	Payment Structure	Payment	Interest Paid	Total Paid
A	8%	\$300,000	20	Annual	\$30,808	\$316,175	\$616,175
B	8%	\$240,000	30	Annual	\$21,542	\$406,274	\$646,274
C	8%	\$240,000	20	Annual	\$24,647	\$252,940	\$492,940

Rarely do we get that phone call where the bordering real estate is coming on to the market. Our ability to control the interest rate market when that happens is nonexistent. The next step for each operation will be dependent on their cash on hand, other investment plans, and cash flow. Work with your lender to evaluate your options and find that one that appears the most advantageous for your ranch financial plans.

Oklahoma Specific Cattle Inventory News

Scott Clawson, Area Ag Economics Specialist

Via USDA NASS Cattle Inventory Report released January 31, 2023

	2022 (1,000 hd)	2023 (1,000 hd)	% Decrease
Beef Cows Calved			
Oklahoma	2,121.0	1,981.0	7%
United States	29,983.1	28,917.9	4%
Beef Replacement Heifers			
Oklahoma	400.0	390.0	3%
United States	5,481.5	5,163.7	6%

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*****Due to weather, very low receipts were recorded last week.*****

Value of Gain Calculation EXTENSION						
<i>OK Weighted Average Report 2/3/23</i>						
Weight	\$/lb	Value/hd	Added lb.	Added \$	\$/lb Added	
372	\$ 2.3642	\$ 879.48				
427	\$ 2.2400	\$ 956.48	55	\$ 77.00	\$ 1.40	
484	\$ 2.1822	\$ 1,056.18	57	\$ 99.70	\$ 1.75	
533	\$ 2.1388	\$ 1,139.98	49	\$ 83.80	\$ 1.71	
567	\$ 2.0671	\$ 1,172.05	34	\$ 32.07	\$ 0.94	
630	\$ 1.9187	\$ 1,208.78	63	\$ 36.74	\$ 0.58	
681	\$ 1.8700	\$ 1,273.47	51	\$ 64.69	\$ 1.27	
721	\$ 1.8143	\$ 1,308.11	40	\$ 34.64	\$ 0.87	
794	\$ 1.7848	\$ 1,417.13	73	\$ 109.02	\$ 1.49	
817	\$ 1.7900	\$ 1,462.43	23	\$ 45.30	\$ 1.97	
864	\$ 1.7650	\$ 1,524.96	47	\$ 62.53	\$ 1.33	
Long Stocker Run		Short Stocker Run		Heavy Stocker Run		
<i>Starting</i>		<i>Starting</i>		<i>Starting</i>		
372	\$ 879.48	372	\$ 879.48	681	\$ 1,273.47	
<i>Ending</i>		<i>Ending</i>		<i>Ending</i>		
864	\$ 1,524.96	567	\$ 1,172.05	864	\$ 1,524.96	
<i>Total Gain</i>	<i>Δ Value</i>	<i>Total Gain</i>	<i>Δ Value</i>	<i>Total Gain</i>	<i>Δ Value</i>	
492	\$ 645.48	195	\$ 292.56	183	\$ 251.49	
<i>VOG</i>		<i>VOG</i>		<i>VOG</i>		
\$	1.31	\$	1.50	\$	1.37	



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