

Upcoming Events

Invasive Weeds Identification & Control
Workshop

Nov. 15th from 1-4 p.m.

@ the Sundance Courthouse Basement

RSVP by Nov. 10th

Questions? RSVP via:

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309 E Cleveland St, Sundance, WY



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Agriculture and Natural Resources
Newsletter

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Fall-Winter Cattle Care

Anthrax



Fall-Winter Cattle Care

By: Alex Orozco, Extension Educator,
Crook County, University of Wyoming

As you wean calves and prepare for the fall and winter months, it is important to consider your herd's nutritional requirements and ensure that livestock performance isn't negatively impacted.

After weaning, in the fall is the best time to improve the body condition of thinner cows (Ziegler and Mulliniks, 2019). However, factors such as stress from cold temperatures, low quality forages (range forage, hay, etc.), and age can influence whether or not their nutritional requirements are met.

Stress from Cold Temperatures

Before winter, it is important to evaluate the body condition score (BCS) of your cattle to ensure they achieve a BCS of 5–5.5 prior to winter (Drewnoski and Wilke, 2019). Improving the BCS of your cattle prior to winter reduces the negative impact of cold weather on livestock performance. Cold temperatures add stress to cattle that increases their energy requirements. If energy requirements are not met, BCS may decrease.

BCS also influences lower critical temperature (LCT), the threshold at which cattle have to start using energy to maintain their body temperature (Drewnoski and Wilke, 2019). Cows in good condition (BCS 5–5.5), with dry heavy coats, can more easily maintain their body temperature without needing to use additional energy until wind chill index is below 19°F. However, thinner cows with BCS of 4 and dry heavy coat have a LCT of 27°F.

Note that LCT increases significantly when cattle have a wet coat or if there is wind present. Therefore, make sure to provide wind protection

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and monitor your herd's BCS over the fall and winter to ensure their energy requirements are fulfilled. If body condition starts to decrease, providing or increasing supplementation high in energy is recommended to satisfy increased energy demand.

Forage Quality

As you prepare for feeding during the fall and winter months, it is important to understand the nutritive value of the forage that your livestock are consuming. Keep in mind that range native forages are dormant and have less forage value in the colder months compared to the growing season.

Hay testing is a useful tool in determining nutritive value. Testing annual forages and harvested annual forages for nitrates is also crucial because drought-stressed annual forages can cause nitrate toxicity. Therefore, it is important to test your hay prior to it being fed to ensure that it is safe for our livestock to consume and to know if the nutritional requirements of our herd will be met or if supplementation is needed.

Feed Quality

To determine if and what kind of supplementation is needed to meet nutritional requirements, you must know the quality of the feed your herd is consuming. When two feeds with different crude protein (CP) % are compared on a dry matter (DM) basis, it is important to understand what the percentage difference means in terms of dry matter intake (DMI).

An example from Greenwell (2020) demonstrates that a spring calving cow who weighs 1300 lbs and is currently in the second trimester (fall/early winter) needs 1.6 lbs of crude protein (CP). Therefore, if she were consuming 9% CP hay, her daily DM intake would have to be 17.8 lbs to meet her CP requirement, but if she consumes 5% CP hay, she would have to consume 32 lbs on a dry matter basis to meet the requirement (Figure 1 below) (Greenwell, 2020).

Chart 1. 1300-lb Cow DMI of Different Quality Hay to Meet Daily Requirement of 1.6 lb of CP

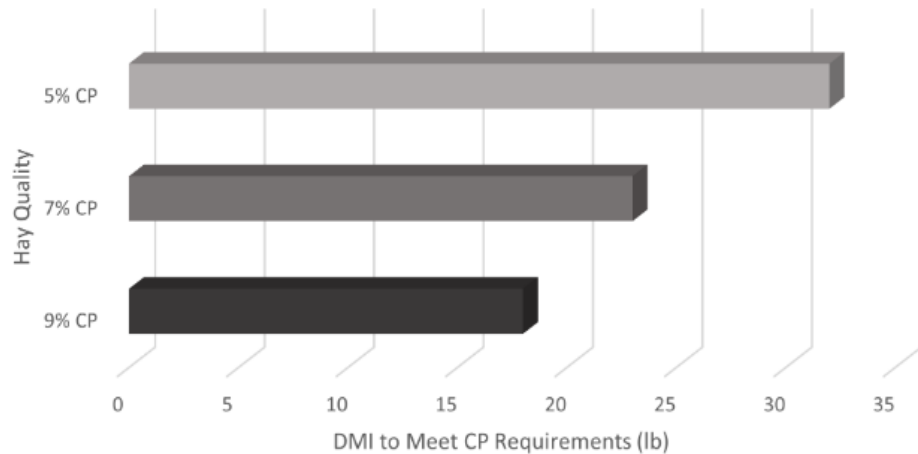


Figure 1: The chart from Greenwell (2020) explains how dry matter intake (DMI) required to meet the nutritional needs of a spring calving cow in her second trimester (fall-early winter) with a 1300-lb crude protein daily requirement (1.6 lbs) is affected by hay quality on a CP% basis.

Knowing what affects cattle nutritional requirements is important when creating your fall-winter care management plan. Lower quality feed can be given to cattle with lower nutritional requirements, such as cattle in maintenance and cattle in the first trimester.

However, cattle still growing, lactating cows, cattle needing to increase their BCS, and cattle in the third trimester have higher nutritional requirements (Reynolds et. al., 2000) so it is better to give them higher quality feed. Separating cattle based on their nutritional requirements can help a producer better meet the nutritional requirements while saving money.

Pregnancy checking cattle and heifers is extremely important as it helps you determine the number of open cattle you have. Culling older cows or open cows can help reduce the amount of feed needed this winter.

Additionally, if you want to retain open cattle, pregnancy checking allows you to separate bred and open cattle and feed them differently based on their nutritional requirements. Separating heifers from cows is beneficial not only because of the difference in nutritional requirements, but also because young heifers are not as aggressive and do not eat as rapidly as mature cows, which can make it harder for them to meet their intake needs.

Other Things to Consider

When buying and feeding hay this fall and winter, there are a few things a producer should consider. When buying and feeding hay that may contain weeds or invasive grasses, minimize where you are feeding this hay to avoid spreading weeds and invasive grasses throughout a pasture.

While feeding hay, it is important to understand that some hay losses will occur. Producers spend approximately 26-40% of the cost of production on feed (Redfearn, 2017; Lalman, 2012). However, management techniques can reduce the amount of waste, which can reduce feed cost and increase the profitability of the herd (Tonn, 2016).

Research conducted by the University of Nebraska and Michigan State University showed that the type of feeder used can affect the amount of feed wasted (see Figure 2 below) (Tonn, 2016). Although some feeders are more expensive, feeding out of feeders that force the animal to turn its head when backing away from the feeder instead of being able to back straight out of the feeder reduces feed waste; this can make the extra cost worth it.

Feed loss can also be reduced by feeding daily only the amount of hay required per day as it forces your livestock to eat hay they might otherwise refuse and trample (Tonn, 2016).

Feed Waste Based on Feeder Type	
Type of Feeder	% of Feed Wasted
Cone	3.3
Ring feeder with skirt	5.9
Racks	9
Trailer	11.1
Cradle feeders	14.2

Figure 2: Research conducted by the University of Nebraska and Michigan State University showed that there was a difference in percentage of feed wasted based on the type of feeder used.

While it might be hard to remove and pick up every piece of bailing twine and hay wrap, do your best to avoid our cattle from consuming it. A study conducted by North Dakota State University found that after 14 days, net wrap and biodegradable twine are not broken down in the rumen (Tonn, 2016; Anderson, 2017). Sisal twine, is more digestible (70% digestibility), but it digested more slowly than hay (Tonn, 2016; Anderson, 2017).

A small amount of twine or net wrap in the rumen may not be a major issue, but consumption and accumulation of large amounts of twine/wrap can create major issues. Try to remove and pick up as much of the wrap and twine as possible to reduce impacts on your herd.

Finally, as temperatures start to fall, it is important that livestock have access to thawed water. This can be challenging throughout the winter but preparing for it now can have significant returns. Some recommendations included water tank heaters, heated tanks, and breaking ice multiple times as needed.

Summary

As you prepare for feeding the herd during the fall and winter months, keep in mind a few key considerations to increase livestock performance and reduce feed cost. It is extremely important to increase the BCS of your thin cows post weaning but prior to winter when cold stress increases their energy requirements. Understanding your forage quality and how it affects

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daily intake can help ensure you are supplementing when needed to meet the nutritional requirements of your herd. Although feed waste and some hay wrap/twine consumption may occur, precautions to reduce feed waste and consumption of hay wrap/twine can improve profitability. Finally, it is important that livestock have access to thawed water during the winter months.

Sources for Further Information on Fall-Winter Cattle Care

Anderson. B., 2017. Remove Net Wrap and Twine. University of Nebraska Lincoln. <https://newsroom.unl.edu/announce/beef/7288/41691>

Drewnoski. M., and Wilke. K.H., 2019. Helping Cows Cope with Cold Stress. University of Nebraska Lincoln. <https://beef.unl.edu/beefwatch/helping-cows-cope-cold-stress>

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Anthrax

By: Alex Orozco, Extension Educator,
Crook County, University of Wyoming

Anthrax is a serious infectious disease that is caused by *Bacillus anthracis* (a spore-forming bacteria) that occurs naturally in soil. Although outbreaks are less common in the U.S. than in other countries, sporadic outbreaks do occur, especially in cattle and deer. Sporadic outbreaks are possible because spores allow the bacteria that causes anthrax to survive in the soil for years to decades.

The American Veterinary Medical Association (2001) states that in the United States, natural incidence is extremely low, although outbreaks have been reported in California, Louisiana, Mississippi, Nebraska, North Dakota, Oklahoma, South Dakota, and Texas. Cases in Montana and Wyoming have also been reported (Wyoming Livestock Roundup, 2020).

Cause of Outbreaks

Domestic and wild animals can become infected when they breathe in or ingest spores in contaminated soil, plants, or water. Anthrax outbreaks usually occur after periods of drought followed by heavy rains.

Animals are at higher risk of contracting anthrax when they are around disturbed soils as this increases the chance the bacteria will become airborne. Livestock and wild animals may become infected by ingesting spores while grazing in areas of high soil contamination or through the bite of certain flies. The route of infection in animals is most often ingestion, rather than inhalation or inoculation via skin lesions.

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Prevention & Treatment

The most effective control strategy for animals in widespread areas where the bacteria may be present, is vaccination (Merck Manual, 2022). In areas where anthrax has occurred in the past, it is recommended to work with your veterinarian to create a yearly vaccination protocol to minimize the risk of an outbreak. A proper vaccination program reduces animal mortality and minimizes the spread of an anthrax outbreak.

If an outbreak occurs, working with your veterinarian promptly is critical because the course of the disease is very rapid. Prompt administration of appropriate antibiotics is essential.

The Merck Manual (2022) states that animals at risk should be immediately treated with a long-acting antimicrobial to stop all potential incubating infections, followed by vaccination approximately 7-10 days after treatment. Any animals that become sick after initial treatment or vaccination should be retreated immediately and revaccinated a month later.

The American Veterinary Medical Association (2001) recommends that livestock such as cattle, sheep, goats, and horses that are affected by natural anthrax be treated with antibiotics such as penicillin and oxytetracycline (i.e. Bio-Mycin 200 and LA-200). Consider consulting your veterinarian on what they recommend as well.

Additional management practices to prevent and treat anthrax in livestock includes quarantine of the affected herd, removal of the herd from the contaminated pasture (if possible), disposal of contaminated carcasses

(preferably by burning), and decontamination of contaminated materials (Merck Manual, 2022).

Symptoms

Symptoms in livestock and wildlife include:

- Sudden death
- Staggering
- Difficult breathing
- Trembling
- Uncontrollable movements
- Fever
- Bloody diarrhea
- Colic (in horses)

It is important to work with your veterinarian for a proper diagnosis, as the symptoms listed above are symptoms for other diseases as well.

Summary

Anthrax is a serious infectious disease that is caused by a spore-forming bacteria. Livestock and wild animals may become infected by ingesting spores while grazing in areas of high soil contamination.

To prevent and treat an outbreak, it is important to work closely and promptly with your veterinarian to create a vaccination protocol for areas at higher risk of an outbreak (i.e. areas with a prior outbreak), implement proper treatment using antibiotics such as penicillin and oxytetracycline, and properly diagnose the disease.

Make sure to decontaminate all contaminated feed and materials. Proper disposal of carcasses, moving animals out of the contaminated pasture, and quarantining sick animals are good management practices to help reduce mortality from anthrax.

Sources for Further Information on Anthrax

American Veterinary Medical Association. 2001. Anthrax Facts. <https://www.avma.org/anthrax-facts#:~:text=Cattle%2C%20sheep%2C%20and%20goats%E2%80%94bloated%2C%20and%20without%20rigor%20mortis.>

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