

December 2018

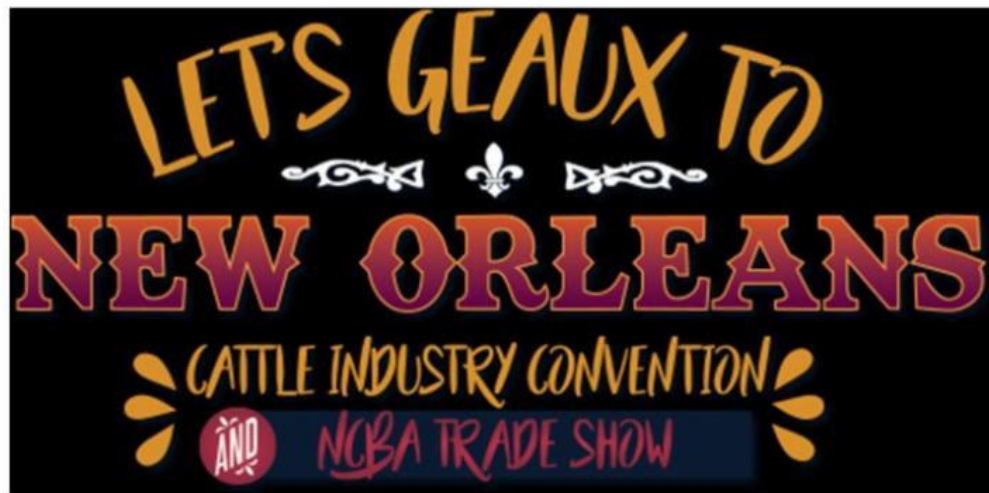
Announcements!!!

- 1. Ranch Tours at the Annual NCBA Meetings in New Orleans**
- 2. Save the Date! Utah Beef Field Day 2019**

National Cattlemen's Meeting Ranch and Farm Tours

EXTENSION 
UtahStateUniversity

New Orleans Louisiana



**Tuesday
January 29, 2019
7am to 4pm
Come Tour
Louisiana Beef
Cattle Operations
in Tangipahoa
Parish LA**

- *Collaborative Tours Provided by USU Beef Cattle Extension, Utah Cattlemen's Association, and Louisiana State University*
- *See Diverse Louisiana Beef Cattle Operations in Tangipahoa Parish*
- *Interact with Southeastern Beef Producers*
- *Lunch at the Famous Mike's Catfish Shack*
- *Transportation Provided*

For questions or more information contact:
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435-797-2144
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Or
Brent Tanner

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Beef Cattle Field Day

EXTENSION 
Utah State University

Resilience in the Face of Wildfires: Preparation,
Prevention, and Recovery



**Tuesday,
February 12
8:30 am -3:30 pm**

**BYU Conference
Center**

730 E University Pkwy
Provo, UT

This year's theme will revolve around fire disaster resilience. Each year the west sets new records on fire destruction and intensity. This conference will host topics that can help you become more prepared and resilient should the unfortunate happen.

To Register:

<https://beefcattlefieldday2019.eventbrite.com>

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Beef Species

Brisket Disease and the Potentially Significant Impact on Utah Beef Producers

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Brisket disease, high altitude disease or high mountain disease is a common condition in cattle raised or managed on ranches with an elevation greater than 5000 feet elevation. Due to the "thinner" air at these altitudes less oxygen reaches the lungs and the pulmonary artery of the heart. Animals that are susceptible to this condition, if left at high altitudes will experience right-sided congestive heart failure. If this condition goes unnoticed the effectiveness of the heart decreases and the heart begins to fail. Some signs of brisket disease include, lethargy, downed animal that cannot rise, animals go off of feed, bulging eyes swelling of the limbs, and swelling of the brisket region (the most obvious sign and hence the name brisket disease).

While it has been shown that all breeds are susceptible to brisket disease there have been some familial lines within breeds that have been shown to have a higher predisposition for the disease or to be more resistant to the disease. Pulmonary arterial pressure (PAP) is one test to help in the selection of animals that may not be susceptible to brisket disease. This test measures pulmonary arterial pressure on the right side of the heart. A high PAP score (>49 mmHg) regardless of age or the elevation of where the animal is being tested has become a highly accurate predictor of that, that animals will have a high PAP measurement later in life, thus making them more susceptible to brisket disease if managed or raised at high elevation.

So why is this particularly relevant to Utah beef producers? First, a good part of our state meets the greater than 5000 feet elevation requirement. Second, a significant part of our grazing seasons occur on mountain pasture that is greater than 5000 feet elevation. Third, it has been shown that temperatures below freezing have the potential to raise PAP measurements by 25-55%. Thus, animals that may

be acceptable when tested (maybe borderline) may become susceptible during our cold Utah months in the north. Furthermore, pregnant cattle usually have a higher PAP measurement than non-pregnant cattle. A good amount of our cattle go onto mountain pasture early in their gestation or are bred while on the mountain. Then they come home and are exposed to the harsh Utah winter making them doubly susceptible. Lastly, I have talked with a lot of producers who are buying cattle from seedstock operators located at lower elevations.

Incorporation of breeding animals from lower elevations has been happening for decades now and this has an even bigger impact than may be expected for Utah Beef producers. We have now incorporated the genetics from potentially susceptible animals for generations, meaning we now have the susceptible genetics in our herds. However, on a somewhat high note, many of these animals have probably self selected by dying or being culled from our herds after they were identified. This is why it is important that a PAP test can be requested if the breeder understands that the animal is going to a higher elevation. However, many times in lower elevation production environments PAP testing is not the norm and these cattle are shipped without a PAP test. This is where we tend to see most of our problems, is when animals from lower elevations are thrown on the mountain for a breeding season and the fall apart or die. The fact is that in our production environment PAP measurements should be another tool that we utilize in our multiple trait selection decisions to implement the most compatible animals into our production systems.



Figure 1. A cow with the obvious signs of Brisket disease. Note the large amount of edema in the brisket area.

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Small Ruminant

"Nutritional Needs During Gestation are Important"

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SELF HARVESTERS!

Feeding management of sheep and goats is both a science and an art! I remember many years ago as an apprentice shepherd in my youth, a shepherd mentor said, "Lyle, good shepherds are more important than electric augers and self-feeders!" Experience over the years has taught me that statement is certainly true. Obviously, one of the primary advantages of raising small ruminants, is that they are what I refer to as 'self harvesters', or in other words, they need not be fed high fossil fuel input produced feedstuffs, i.e. hay, silage, pellets, bulk or bagged rations, etc. Another fellow sheep producer friend in Nevada refers to sheep as 'nature's scavengers'. Depending upon one's perspective and semantics, the answer should be consistent, that sheep and goats are one of this globe's oldest group of 'recycling agents'. However, that doesn't imply that we feed them garbage. As shepherds we should

provide them with a 'balanced diet, and year around'. I refer to this practice as 'life-cycle nutritional management'. I will tend to focus on sheep in this article, but sheep and goats if you recall, have much in common too.

LIFE CYCLE FEEDING:

Successful sheep production depends on proper management of the 'biological cycle' or the 'life-cycle' of the ewe flock to attain production stability and good flock health. Feeding programs must be managed to coincide with the ewe's biological needs. The biological or life-cycle of the ewe is fixed and well defined. Average length of gestation or pregnancy is 148 days (depending on breed).

The biological or life-cycle of the ewe can be divided into 5 definite periods*:

Period 1	First 15 weeks of gestation	105 days
Period II	Last 6 weeks of gestation	42 days
Period III	First 8 weeks of lactation	56 days
Period IV	Last 8 weeks of lactation	56 days
Period V	Post-weaning period	106 days
Total		365 days

(* If not on an accelerated lambing program.)

The biological and chronological cycle of the ewe are important to sheep producers. The nutritional requirements of the ewe correspond to their biological cycle, and a thorough understanding of the cycle will allow sheep producers to develop a sound feeding management program for his/her flock.

THE FIRST 3 MONTHS OF GESTATION:

This period is the time when the feed of the pregnant ewe may be restricted with the least likelihood of serious consequences. However, we know very little about the effects of serious under-nutrition on such things as failure of implantation of the fertilized egg or early death of the growing embryo during this stage.

The pregnant ewe is less able to act as a buffer against the periods of feedshortages that occur through the winter than are dry or open sheep. However, there is an optimal level for the condition of the ewe in mid-pregnancy. High body condition at this time means that it is more difficult to satisfy the ewe's feed requirement at late pregnancy. It may lead to problems at lambing time due to large lambs. There are indications that excessive fatness or body condition will lead to the production of small lambs, as also can poor feeding. This optimal level of condition, this happy medium will vary, depending on winter weather conditions and range (or pasture) growth characteristics. This certainly varies according to region. The condition of the ewe at mid-gestation is largely determined by her condition prior to mating.

THE LAST 2 MONTHS OF GESTATION:

This is the critical period. It is during this time that the foundation of good health is laid in both the ewe and the lamb. These facts cannot be over stressed. Poor feeding at this time leads to:

1. Low birth weights in lambs.
2. Low fat reserves in lambs, leading to more losses after birth.
3. Low wool production from these lambs as adults.
4. Shortened gestation period.
5. Increased chances of ewes getting pregnancy toxemia (pregnancy paralysis or ketosis).
6. Ewes slower to come into lactation (milk) and production of less milk during their lactation.

7. Production of "tender" fleeces in the ewes, and possibly even a complete "break".

It is during this time that the unborn lamb makes most of their growth. This growth, increasing the space that the uterus occupies, restricts the space available for the rumen and intestines in the abdomen of the ewe. This means that the ewe may not be able to eat large quantities of a bulky feed during the latter stages of gestation. Instead they require some density in their diet, or energy supplementation.

The last 6 weeks of gestation are very important for the ewes with twins, and the last 4 weeks for the ewes with single lambs. If energy (carbohydrates and fats) of the ewes and the lambs are not met from the feed, the ewe must increase her feed intake or draw on her body reserves (body condition). If high quality feed is not available to such a ewe, she is unable to increase her intake of low-quality feed and she begins to draw on her own body protein (tissue) to make up the deficiencies. Such a ewe is malnourished.

It is important to realize that under-nutrition in the ewe in late pregnancy is somewhat relative. A diet providing just enough energy for the ewe in medium condition will be inadequate for the ewe in fat condition. Also, a diet just adequate for a ewe carrying only one lamb is completely inadequate for a ewe bearing twins or triplets.

In assessing the status of a pregnant ewe it is important to realize that body condition means more than body weight. Further, the important criterion of the nutritional state of the ewe is whether condition is being gained or lost. Two principles emerge from these considerations:

1. Ewes should be fed so that their body condition improves steadily or is at least maintained during the last 2 months of gestation.
2. Ewes may not be able to eat large quantities of bulky feed during the later stages of gestation; therefore, at this time, they require feeds or a ration with a sufficiently high nutritive (energy) or calorically dense supplemental diet.

Every undernourished ewe is therefore a potential case of pregnancy toxemia. Feed them well in late pregnancy. A publication that every serious sheep and goat producer should have in their library is the following: Nutrient Requirements of Small Ruminants (Sheep, Goats, Cervids, and New World Camelids), 2007, National Academy of Science, National Research Council, published by the National Academy Press, 500 Fifth Street NW, Washington, D.C. 20001.

In conclusion, I remember well what an old Basque shepherd told me in my younger years and it applies here. It goes like this....."If you take care of your ewes, they will take care of you!"

Poultry Species

Maintaining Egg Production During Months of Declining Daylight Hours

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The two most important physiologic driving forces in beginning and maintaining egg production are: 1) pullet age/weight and 2) photoperiod. In this article we will discuss a few suggestions to keep hens laying during months of declining daylight hours. This time of year encompasses the months of July through December, or in other words, the period between the summer solstice (June 21) and winter solstice (December 21).

Modern strains of layer chickens will often successfully continue laying eggs well into the fall and winter; however, this is also the time of year when chickens characteristically molt (shed feathers and grow new replacements). Molting and egg laying are both high energy and high protein-consuming activities. It is difficult for the hen to optimally perform both functions at the same time. Typically, if a hen continues to lay eggs, feather replacement is delayed causing the bird to look unkempt and feather-bare. Other hens might cease egg production altogether while molting. Even hens that continue to lay during the molting process will eventually produce lower quality eggs, usually manifested in thin fragile shells. So, under optimal conditions it is best to let the flock go through the molt before encouraging the next egg production cycle. However, if the flock appears fully feathered and in good condition, egg laying during winter months is possible with minimal interruption.



Tips for Maintaining Fall/Winter Egg Production

1. As mentioned, hens are extremely sensitive to photoperiod. If artificial lights are used in the coop, make sure the light period is constant or increasing - never allowing it to decrease. Even a day or two with a power outage or burned out light bulbs interrupting the photoperiod can have a detrimental effect on egg production.
 1. Determine the maximum amount of daylight in your area. This occurs at the summer solstice (June 21). See Figure 1 as an example of day length throughout the year at a latitude of 41° (e.g., Ogden, Utah). In this example, maximum yearly day length is about 15 hours; minimum is about 9 ½ hours.
 2. Install a lighting system with timer into the coop. Even a 40-watt incandescent bulb (or equivalent) in a typical backyard coop will be bright enough (about 450 lumens) to keep the hens physiologically stimulated.
 3. Adjust timer so the artificial light comes on at the time when daylight would naturally occur at the time of maximum day length (June 21). Set timer to shut off after calculated time of shortest daybreak (i.e., Dec 21) so the light isn't on all day wasting electricity.

4. Next, adjust timer so that the lights turn on again just before time of earliest sunset (Dec 21) and turn off at time of latest sunset (Jun 21).
 5. If this protocol is practiced, the birds will be exposed to a continuous period of light regardless of what is happening naturally outside as the sun rises and sets. With a little thought, it will be apparent that the timer must be used on both ends to maintain constant photoperiod. If lights are only turned on early in the morning, for instance, the sun will continue to set earlier each day thereby incrementally shortening the daily photoperiod during the fall and winter.
-
1. Make sure there is plenty of liquid drinking water available to the hens at all times. If hens don't (or can't) drink, they will not produce eggs. There are very good heated watering systems available on the market. If there is a chance of water freezing in the coop, it is highly recommended to install heated waterers.
-
1. Although moderately low ambient temperature has minimal direct impact on egg production, it does have an indirect effect by increasing the hen's metabolic need to maintain body temperature. This means more nutrients from consumed feed must be shifted to body maintenance and away from egg production. Physiologic optimum environmental temperature for chickens is 75°F; however, it is not necessary to maintain this temperature in the coop! As long as the temperature is high enough to reasonably keep water from rapidly freezing (and there is no wind chill), chickens can fare just fine. The general recommendation is to keep the coop as warm as reasonably possible during winter.
-
1. Provide high quality layer feed at all times. Minimize table scraps and other low nutrient feedstuffs during periods of cold temperatures. It might be useful to provide free choice calcite grit or oyster shell to help maintain eggshell quality.

With a little extra attention to detail it is possible to enjoy home-produced fresh eggs even during the darkest days of winter.

Figure 1. Monthly day length - Ogden, Utah

[Text Link](#)

Dairy Determining Dry Matter Content of Feed

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Feeding a dairy animal is more than just throwing a bale of hay in front of them and thinking they will produce as they should. It is more involved and revolves around dry matter intake and, initially, the dry matter (DM) of the feeds that go into that ration. All ration balancing programs use equations that are centered on dry matter intake. Even though the concept is simple, it is something that people get wrong often. What is dry matter and how do we measure it?



Every feed that an animal eats is composed of water and the plant material that is ultimately used by the animal for growth and production. If we take all the water out of a plant, what is left is dry matter. For example, dried forages such as hay, will have about 10% moisture and 90% dry matter. Forages such as corn silage will have about 35% of the mass as dry matter and the other 65% is water. To put it another way, if I fed 10 lb of hay and 10 lb of corn silage, the cow would get 9 lb of dry matter from the hay and 3.5 lb of dry matter from the corn silage. Even though they are being fed the same amount, the animal is receiving very different amount of usable nutrients from each feed source.

So, how do you go about determining the dry matter content of feeds (so that you can determine it for the total ration)? The most obvious is to take a representative sample of your feed and send to a forage analysis laboratory. You should get the results back within a week and the cost is between \$18 and \$25. I always try to send the sample on Monday or Tuesday so that it gets to the lab before Friday. For routine work, near infra-red spectrophotometer (NIR) analysis is sufficient for most people's needs.

If you want to make determinations on the farm, there are several options. The first method is to use a microwave and a small scale. Basically, you weight out a small sample of your feed and put in the microwave and "cook" until the moisture is gone. You may have to take it out and weigh several times until the weight doesn't change. Use the before and after values to calculate the %DM. As a caution, I usually put a small cup of water in with the sample to help keep the sample from catching on fire - and it will if you aren't careful. Also, do not use the family microwave or you might be sleeping with the cows.

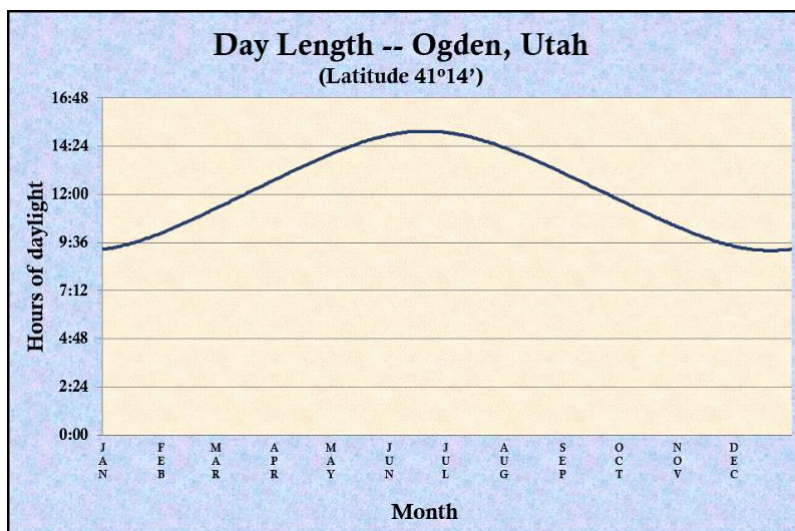
The second method is to use a food dryer (dehydrator). Again, weight a sample before, dry until the weight doesn't change, then calculate the DM%. This takes longer to get results than the microwave, but it is safer and not likely to catch fire. As before, don't use the family dehydrator. I have heard that some people are using air fryers. I don't have any experience with this method and can't make a recommendation.

A third method is to use a Koster tester. This is a commercially available piece of equipment that can fit on any flat surface. Basically, you put a sample in the hopper and press a button. They range in cost from about \$300 to \$450. This is probably something you would consider if you have a lot of samples to analyze, but they aren't necessarily better. Just easier.

The fourth method is to use a hand-held NIR device. This is the same methodology that a commercial laboratory uses but fits in your hand. These are relatively new on the market and there isn't as much information available. A recent article in Journal of Dairy Science compared one of these handheld devices against the methods I've mentioned. The synopsis is that it works well out-of-the-box for things like dry alfalfa hay but needs to be recalibrated at the farm for higher moisture, higher variable composition feeds such as corn silage. Once calibrated, it give comparable results to the others mentioned above. I found it on sale for \$5500 (it would make a great stocking stuffer). Maybe not something you would want for a small farm, but as more of these come on the market, I'm sure the price will come down.

There is a fifth option, but not one I recommend for home use. It is to use an oven to dry the sample. It is the same principle as the microwave or food dryer but uses an oven. Again, you don't want to use the family oven and most people don't have a spare one lying around the farm. It is an option but watch for burning.

Whether a sample is analyzed on-farm or sent to a commercial laboratory, determining the dry matter content of forages and rations is critical to getting optimal performance and health. If you have any questions or comments, I can be reached at allen.young@usu.edu.



[Text Link](#)

Hay Quality For Feeding Horses

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Hay quality

As summer and fall come to a close, we start to take our horses off pasture and begin to feed them hay. Colder weather also requires the need to increase the amount energy our horses consume each day, so they can keep warm. Too often, the hay we feed our horses tends to be of lesser quality. Understanding the quality of hay that we feed our horses is vital as we try to keep them happy and healthy.

All horse hay should be dry, clean, free of mold, dust, and debris. Nice bright green hay is nice; however, color is not always a good indicator of quality. Harvesting practices, hay maturity, and cutting all affect hay quality. The only way to truly know the quality of the forage you are feeding is to submit a sample to a quality lab that can accurately analyze the quality of the hay. This testing is not very expensive (approximately \$10- \$20).

When hay samples are evaluated, we look at a few different parameters: crude protein levels, Neutral Detergent Fiber (NDF), Acid Detergent Fiber (ADF), Total Digestible Nutrients (TDN), and Relative Feed Value (RFV). Crude protein reflects the amount of energy in a feed, NDF is an indicator of intake potential, and ADF is a measurement of digestibility. TDN is a measure total fiber, protein, lipid, and carbohydrates in a feed. The RFV is an index that ranks cool season alfalfa and grasses calculated using the ADF and NDF. The maturity of the hay when harvested will affect the quality. More mature hay at harvest will have a higher ADF and NDF, and a lower RFV when compared to younger hay. Rain damaged hay will also have higher ADF and NDF, and lower RFV.

When planning what hay to purchase for your horse, you must take into account what your particular horse needs. Mature idle horses can be fed a hay with a moderate RFV, this way they can eat enough to satisfy their hunger and not gain weight. Care should be taken to not feed hay with a RFV under 100 to horses. The poor-quality hay generally has a high ADF, meaning the feed is not digestible and can cause an impaction colic. Young growing horses, or performance horses, need a hay with a higher RFV to meet energy needs. Economics also has a determining factor, as we know higher quality hay is generally more expensive. In general, mature idle horses can do well on a hay with a RFV between 100 and 150. Growing and performance horses should be fed hay with a RFV of at least 150.

The following is a table can be used as a reference when evaluating feed.

Hay Quality	Relative Feed Value	Acid Detergent Fiber (ADF) %	Grass Crude Protein %	Grass TDN %	Grass/Alfalfa Mix Crude Protein %	Grass/Alfalfa Mix TDN %	Alfalfa Crude Protein %	Alfalfa TDN %
Excellent	> 200	< 30	> 11	> 64	> 16	> 64	> 21	> 64
Very Good	150 - 200	31 - 35	8 - 10	60 - 64	13 - 15	60 - 64	18 - 20	62 - 64
Good	120 - 150	36 - 40	7 - 8	57 - 60	12 - 13	59 - 62	16 - 18	60 - 62
OK	100 - 120	41 - 42	5 - 7	55 - 57	9 - 12	57 - 59	14 - 16	56 - 60
Poor	< 100	43 - 45	4 - 5	54 - 55	7 - 9	53 - 55	12 - 14	54 - 56
Bedding		>46	< 4	< 54	< 7	< 54	< 12	< 54

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