CLEMSON COOPERATIVE EXTENSION

LIVESTOCK and FORAGES

CU in the pasture

Clemson Livestock & Forages Team Newsletter

Issue 2, August 2015

Drought Management For Beef Cattle

Lee Van Vlake, Area Livestock and Forages Agent, Pee Dee Region

So far summer 2015 has shown many challenges for beef cattle producers in South Carolina. Inconsistent rainfall, which has limited hay production and negatively impacted pastures, has been one of the leading challenges that some cattle producers have had to manage.

As cattle producers we have to make management decisions daily that affect potential profitability of our operation. Although rainfall is a decision that we cannot control, we can have a management strategy in place that will help to limit the impact that drought can play on our operation and our cattle herd. Drought conditions can have severe impacts on cattle, but if we have a strategy in place this can help minimize the economic impact for the producer.

The most noticeable impact of drought is the decrease of available forages for cattle to utilize. With this, producers will be faced with the decision to supplement feed, which will raise the cost of production, or decrease the nutritional requirement of the cattle. The current rainfall situation now is a good time to evaluate our drought management strategy and make sure we are ready to make key management decisions that can impact our cattle herd for many years. There are several strategies that producers can implement to minimize the impact of drought. These include culling, early weaning of calves, creep feeding, supplementing the cowherd, and grouping cows based on nutrient needs. This article we will focus on proper culling and early weaning of calves.

Continued on next page.

In This Issue

- Drought Management
- Animal Manure Land Application Requirements
- Fall Armyworms
- Biosecurity During Poultry Show Season
- Gearing up for Round-Up
- Pregnant or Open?
- Hurricane Preparedness

Follow us!

Upcoming Events

Junior Beef Round–Up
July 31 – August 2, 2015
T. Ed. Garrison Livestock Arena
Clemson, South Carolina

Simpson Station Agricultural Field Day
August 22, 2015
Clemson, SC

Fencing School
August 28, 2015
Gaffney, SC

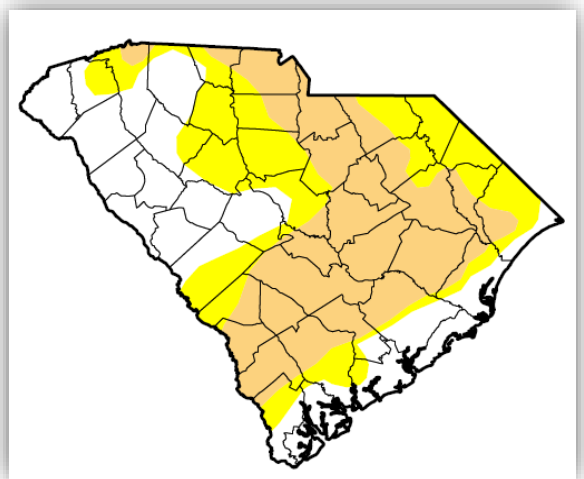
Clemson University Cooperative Extension Service offers its programs to people of all ages, regardless of race, color, gender, religion, national origin, disability, political beliefs, sexual orientation, marital or family status and is an equal opportunity employer.

Public Service Activities

CLEMSON
COOPERATIVE EXTENSION

Drought Management for Beef Cattle continued...

During drought conditions the first thing we need to do is evaluate our stocking rate. If grass runs out every time there is a dry spell, this could indicate that the pasture is overstocked. In some cases the forage species, soil fertility, and soil type are to blame. On the "flip side" if there is a large quantity of low quality forage after a long drought, then you could be under-stocked. If we do experience drought conditions that force us to make the decision to cull cows, we need to make sure we are culling the right cows. Number one goal in culling is to keep the best, highest producing cows. Pregnancy diagnosis for the cow herd and identification/culling of open cows should be the first step since open cows drive up the cost of production for the entire herd. Culling old or low producing cows should be the second step. With good production records old cows are easy to identify but low producing cows can be more challenging.



Areas marked in yellow are considered "abnormally dry", where tan denotes "moderate drought". Check U.S Drought Monitor for full information. http://droughtmonitor.unl.edu/

One way to identify a low producing cow is to review records of any cows that calve at the end of the calving season, which usually results in a lighter calf at weaning. A lower producing cow may produce less milk, which will also result in a lighter calf at weaning. Other factors to consider when deciding which cows to cull include but are not limited to; structural soundness, eyes, mouth and teeth, udder soundness, and disposition. Remember if we are faced with the decision to cull lets make sure we are keeping our best cows.

Since weaning weights are negatively affected during drought conditions, weaning early is an option for many producers, although there are key management decisions to consider. Producers can wean calves and sell at younger ages, wean and feed calves separately from cows, or supplement the cowherd with feed (which may increase cost). Early weaning can have several advantages in regards to the cowherd. Dry cows require less forage to meet their nutritional requirements than lactating cows (extends the grazing period). Dry cows will enter winter in better body condition. During times of limited forage availability cows experience reduced milk production, which can lead to lower weaning weights. Calves that are weaned early are extremely efficient with converting feed to gain. Research has shown that early weaning a calf at 120 days of age or less will greatly improve conception rates when grazing the same forage compared to cows that continue to nurse their calves. There are some management concerns to weaning early, which include having an extra pasture or dry lot to hold early weaned calves if they are not sold and availability of purchased or stored feed. It is important to pay close attention to feeding management and health of early weaned calves.

As some of us experience drought-like conditions, this is a good time to make sure we all have a drought management strategy in place. Drought can have severe impacts on cattle operations that can take years to overcome and our goal as cattle producers should be to limit the impact of drought through key management decisions.

Citation: Rossi, Johnny, Robert Stewart, Stewart Lawton, Ted Dyer, and Ronnie Silcox. 2012/2007. Drought management strategies for beef cattle. (Publication number B1323). University of Georgia Cooperative Extension, College of Agricultural and Environmental Science; College of Family and Consumer Science. Accessed July 15, 2015 .

Animal Manure Land Application Requirements

Bryan Smith, Extension Agent, Agricultural Engineer

Animal manure is an attractive alternative to commercial fertilizer for many livestock and forage producers. Manure provides primary, secondary and micronutrients for plant growth, provides a slow release of the nitrogen in the manure, and is usually less expensive than a comparable conventional fertilizer. However, many growers currently utilizing animal manure for their pastures or hayfields are not familiar with the requirements in State Regulation R.61-43 that govern the application and utilization of animal manures.

The most commonly overlooked requirement is covering stored manure. According to section 200.100.B.21, any manure stored or stockpiled for more than 3 days must be placed on a plastic, clay-lined, or concrete pad and covered with a tarp to prevent runoff, odors, and vector (fly and insect) attraction. This does require some planning and work, but covering the manure also helps prevent nitrogen loss during storage. An uncovered manure pile can lose as much as 30% of the available nitrogen in 30 days, and at today's nitrogen prices that is a substantial loss of nutrient value.

Continued on the next page…

Land manure applicators learn how to properly calibrate their spreaders at a field day in Laurens, SC.

Animal Manure continued….

Manure may usually be applied to supply all of the crop's nitrogen need for the season. This application usually results in an application of excess phosphorus, which does not cause any crop issues. However, with repeated applications of manure over time, the phosphorus level in the field will increase. When the phosphorus level reaches a given point (depending on several factors, including soil type, field slope, distance to water, etc.), the manure application may be limited to the phosphorus need of the crop, which is a considerably smaller application rate. Utilizing both manure and commercial fertilizers to meet plant needs in this case is the best option.

Animal manure may not be applied to cropland more than 30 days before planting, or during dormant periods for perennial pastures and hayfields. Manure should also not be applied when a significant rainfall event is forecast in the following 48 hours. Animal manure also cannot be applied to land with a ground water level less than 1.5 feet below the ground surface.

There are a number of setbacks in the regulation to help prevent potential issues with streams, creeks, and wells. Animal manure may not be applied within 100 feet of waters of the State (streams, creeks, etc.) when surface applied, or within 75 feet if incorporated when applied. The minimum separation distance between manure application and ditches or swales that discharge into waters of the State is 50 feet. Animal manure may not be applied within 100 feet of a drinking water well, or within 300 feet of a residence unless permission is given by the resident.

The producer or broker supplying animal manure must provide a nutrient analysis of the manure, which will include the plant available nitrogen, phosphorus, and potassium amounts in the manure. Livestock and forage growers are required to take soil samples of their fields prior to manure application, and should use these results, with the crop needs and manure test results, to determine how much manure to apply to each field or pasture. This not only ensures the proper amount of manure will be applied, but also allows the grower to obtain the most efficient use of the value of the manure.

A full listing of Regulation R.61-43, including other setbacks and utilization restrictions, can be found at www.clemson.edu/camm.

Fall Armyworms

Amber Starnes, Area Livestock and Forages Agent, Upper Pee Dee

Summer is quickly coming to an end which means it is time for hay and livestock producers to start considering prevention and protection for hay fields and pastures from fall armyworms. The fall armyworm, *Spodoptera frugiperda*, is known as a chronic pest in the Southeast region of the US. Climates in South Carolina favor the development of fall army worms in hot, dry summers with this summer being no exception.

Armyworm damage to newly established Tifton 85 bermuda field in fall 2014.

As the name implies, fall armyworms are most numerous in late summer and early fall. The caterpillars feed on a variety of forage crops, such as bahiagrass, pearl millet, and sorghum sudan hybrids, but the most damage is usually seen in lush, green, well-fertilized bermudagrass. Fall armyworms are susceptible to cold, making late summer/early fall prime time for development of fall armyworms, which means this is also the prime time to prepare for prevention/treatment of an invasion. Often times the pest is present but goes undetected because of the initial small size of the eggs/larva. Mature caterpillars often cause the most damage because of the vast amount of foliage that they consume. The damage often seems to appear overnight.

Damage may vary in appearance and severity according to the type of grass and management practices. In a pasture situation where the grass has been grazed closely, the grass

Continued on next page...

Fall Armyworms continued from previous page….

may seem to thin out and develop brown spots. In hayfields, all tender green material may be removed, leaving only tough stems a few inches long. Established, healthy, bermudagrass is rarely killed by armyworms, but the complete defoliation caused by severe infestation weakens plants and deprives livestock of pasture or a hay producer of a hay cutting. Fall armyworm damage on newly established grasses can be a more serious situation. The crops can be severely stunted or killed if fall armyworms feed to far down on these plants. Most commonly fall armyworms forage during early morning and late afternoon making this the recommended time to scout the fields for the pest or signs of damage.

Scouting hayfields and pastures should begin in July. While scouting the following descriptions are stages of the fall armyworm that you may notice. Fall armyworm eggs are creamy white and dome-shaped with a flat base. Eggs are laid in clusters of 25 to 100 with a single adult female moth laying as many as 2,000 eggs on lower leaf blades. The egg clusters will have a hairy/fuzzy appearance. Newly hatched larva is light green to cream-colored with a dark head capsule. As the larva develops it becomes darker with light-colored lines down the side of the body. The head capsule will be dark with a light-colored inverted Y marking on the front. Another identifying mark will be the four dots on the next to last abdominal segment. Once fully grown the larva measures about 1 ½ inches long. Large armyworms frequently disappear almost as suddenly as they appeared, either burrowing into the ground to pupate or migrating in search of food. The adult fall armyworm is an ash-gray moth with a 1 ½ inch wingspan. It will have whitish spots near the tip of the front wings and the hind wings are whitish with narrow brownish wing edges. With the rapid rate of development of the fall armyworms during late summer/early fall it is not uncommon to get 5 or more generations produced each year. Although generations can overlap, most of the fall armyworms in one area will be similar in life stage development making damage seem to come in waves which follow the cyclic development of the fall armyworms.

Insecticides – Broad-Spectrum, short-residual
Sevin/carbaryl
Lannate 2,3 LV
Mustang MAX
Baythroid XL
Insecticides- Selective, Longer-residual
Tracer 4SC
Intrepid
Dimilin 2L

Table 1. Some of the insecticides labeled for treatment of fall armyworms. Be sure to read the product label to ensure proper use and product rates are followed.

Some signs to notice that indicate a fall armyworm concern are cattle egrets and/or geese feeding in concentrated areas, foliage that has been chewed on the underside only, and forage that appears to be 'frosted'. Once damage becomes more severe, the field will have dead spots appear. It also pays to notice the condition of your neighboring fields in that this pest will sometimes invade an area in search of food once an adjacent field has been defoliated. Scouting pastures and hayfields can help detect fall armyworm infestation before they cause economic damage; however, if fields are already damaged from fall armyworms, theses fields should be closely monitored for the rest of the season to determine whether further treatment is required. If a hayfield has been heavily damaged, fertilize as recommended to allow for another hay crop whereas severely damaged pastures may need to be rested.

If you detect fall armyworms there are certain insecticides that are labeled for pastures and hayfields that can be used for treatment. The decision to treat and the amount of insecticide to apply for fall armyworms depends on the stage of the fall armyworms and the intended use of the forage. A population of 3 or more fall armyworms per square foot is a reasonable treatment threshold. As with other pests, timing is important. Apply insecticides early or late in the day, because fall armyworm larvae are most active at these times. Above is a table of some of the insecticides labeled for fall armyworms (Table 1). The names listed are common names for the products. As always read the label before use to ensure proper precautions are taken such as any grazing or haying restrictions and to ensure the product will treat the intended target.

Citation: Loftin, Kelly, Gus Lorenz, Ricky Corder. Managing Armyworms in Pastures and Hayfields (publication number FSA7083). University of Arkansas Cooperative Extension. Accessed July 15, 2015 from https://www.uaex.edu/publications/PDF/FSA-7083.pdf
Marshall, Mike, et. al. 2014 South Carolina Pest Management Handbook. Clemson University Cooperative Extension.

Biosecurity During Poultry Show Season

Mickey Hall, PhD, Clemson University Small Flock Extension Specialist

Even though biosecurity should be part of your everyday management plan, it is important this year more than ever to make sure you take every biosecurity precaution before going to a poultry show since Highly Pathogenic Avian Influenza (HPAI) has been confirmed in 21 states. Because of this outbreak, some states like North Carolina with a large poultry industry have cancelled shows from August 15 through January 15. South Carolina too has a large poultry industry worth 1.4 billion dollars, therefore, we do not want to jeopardize the health of any of the birds in our state as well. So before you go to a show make sure you know what tests and forms are necessary especially if you are crossing state lines.

In South Carolina, a bird must be tested within 90 days for Pullorum-Typhoid which is required under the National Poultry Improvement Plan (NPIP) if it is a South Carolina bird going to a SC show. The bird must be banded with a NPIP band and the paper work for the test should accompany that bird. If you are hosting a show in SC, and a bird is coming from out-of-state then the bird must show proof of the Pullorum-Typhoid test within 30 days, complete with an NPIP band and the proper paper work from that state. These tests in SC and other states are done by certified NPIP testers. If you need to have your birds tested before going to a show contact Clemson University Livestock Poultry Health (803) 788-2260 to get a list of certified NPIP testers. Some shows have a certified tester on site to facilitate the testing of instate birds. Other states may require an Avian Influenza test within 30 days of the show or come from an NPIP Pullorum-Typhoid clean and/or Avian Influenza clean flock. Make sure you know the requirements of the state and the show before taking your birds across state lines, otherwise they may tell you to take your birds home.

Other issues to be concerned about when showing your bird is to make sure you are taking only healthy birds to a show. Make sure that your birds are free from any parasites and are in good health, no respiratory or digestive tract signs such as difficulty breathing or clogged nasal passages or diarrhea. Make sure your bird is clean, has been bathed and toenails and spurs have been trimmed. This should be done at least three days before the show.

When you arrive at the show and your bird is cooped, make sure the other birds are also healthy. If you suspect one of the birds especially those cooped around your bird is sick or has parasites, report that to the person in charge so your birds and others do not go home with the same ailments. Often times since it is stressful for your bird to be in a new environment, you might want to add some vitamin-electrolyte for poultry to your water. Also, make sure your bird has food in front of it at all times. Some shows will provide feed but if your bird is a finicky eater, you may want to provide a diet that is familiar to your bird.

After the show, make sure you isolate your bird from your home flock. It is recommended that this isolation be carried out for 30 days and the bird should be at least 50 yards from the other birds on your premise to make sure that it doesn't bring some pathogen or parasite back from the show.

Also, what about you? People, vehicles, equipment and clothing coming in contact with other birds at the show may be contaminated with pathogens. Therefore, when you bring that bird back to your farm and it has been isolated, when doing your chores, do those birds that have been off the farm last, to avoid tracking pathogens to your other birds. Clean and disinfect your travel coops and your truck upon returning. Also, clean your clothes and shoes before wearing them on your farm or wear protective boot covers to prevent tracking pathogens onto your farm.

Showing poultry should be an enjoyable experience for both you and your birds so make sure your birds arrive and come home from the show safe and healthy.

Gearing up for Round-Up

July 31st is just around the corner, and the Round-Up committee, along with Clemson Extension staff are busy making sure this year's Jr. Beef Round-Up is a big success! The annual youth event draws junior cattlemen from all corners of the Southeast for a fun-filled weekend at the T. Ed Garrison Livestock Arena in Pendleton, SC.

This year's Round-Up will be held July 31st– August 2nd and includes: a Stockman's quiz and essay contest, Sales Talk competition, Showmanship contest, the SC Beef Ambassador Competition, and breed shows. Other fun activities for participants and spectators alike include a silent auction and free watermelon and ice cream treat on Sunday.

Round-Up also has a few exciting changes to announce, one being a *Showmanship and Fitting Workshop* to be held on Friday afternoon. This brief workshop will give participants insight on how to improve their presence in the show ring and how to make their cattle look great with modern fitting techniques. Another new thing about this year's event is the use of a Twitter feed for timely show ring updates. *Follow our **Twitter** account on your smart phone or on our in-barn display: **@SC_JBRU2015** to stay on track with the weekend's events.*

If you have any general questions regarding the 2015 SC Junior Beef Round Up, would like to sponsor, or volunteer, please contact Allie Winter (aewinte@clemson.edu) or Jillian Milopoulos (jmilopo@clemson.edu).

A schedule of events for the weekend can be found at: https://www.regonline.com/builder/site/Default.aspx?EventID=1677525 (located under the 2015 Handbook link).

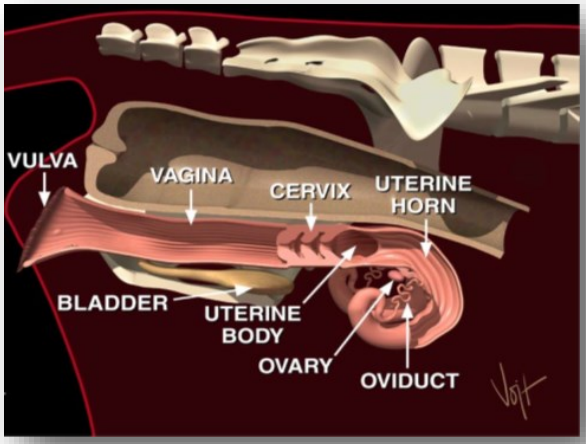
If you'd like to donate any silent auction items, please contact Marie Bolt or Allie Winter.

CLEMSON
COOPERATIVE EXTENSION

Pregnant or Open – How do we know?

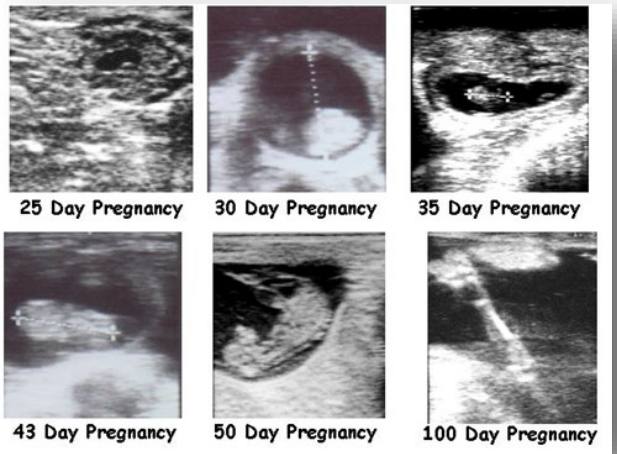
Dr. Matthew Burns, Extension Animal Scientist – Beef Specialist

We often talk about how we can improve our reproductive efficiency, especially with reference to getting more cows pregnant. What about finding those open (non-pregnant) cows earlier after the breeding season? Properly identifying open cows earlier post-breeding season can and will improve you reproductive efficiency. Pregnancy diagnosis is a valuable tool to identify those cattle that are open. Non-pregnant cattle need to be identified as soon as possible after the breeding season in order for culling decisions to be made. Profit potential is very good in the beef industry today, but cow carrying costs are close to, if not at, all-time highs. Therefore, identifying and managing open cows is very critical to the operation's bottom dollar. The article below will discuss three procedures to diagnose pregnancy: palpation, ultrasonography, and blood sampling.



Rectal palpation is a simple procedure that requires little time or equipment. In order to become competent with rectal palpation one must first be familiar with anatomy of the female bovine reproductive tract. The figure to the left illustrates the parts of the reproductive tract and their orientation within the animal. The areas of interest are the uterus, uterine horn(s), and ovaries. Proper training will teach the technician how to palpate for the fluid-filled uterus and ovaries that have a corpus luteum present. Most large animal veterinarians can perform rectal palpation and it can be performed accurately 35 d after breeding. Palpation is the most widely used form of pregnancy determination of the three procedures. Skilled technicians can accurately diagnose pregnancy status and fetal age.

The second method of pregnancy diagnosis is transrectal ultrasonography. Ultrasound uses sound waves to project an image of the measure of density in certain objects. When ultrasounding, pregnancy can be determined as early as 25 d and more information can be determined about the fetus. Skilled technicians can see heartbeats, twins, and after 60 d can sex the calf. Both of these forms of pregnancy diagnosis are reliable and relatively quick. When diagnosing early pregnancies in cattle, it is very important to remember that most pregnancy loss in cattle occurs prior to day 60 of pregnancy. It is not uncommon to lose around 5% of pregnancies between day 30 and 60. Therefore, pregnancy diagnosed after day 60 is usually considered to be a confirmed pregnancy. Visit with your local veterinarian to decide which method is better suited to your operation.



Hurricane Preparedness for Livestock Owners

Charlotte Krugler, Livestock Poultry Health

With one-third of the 2016 Hurricane Season down there is still plenty of time to plan to dust off your farm-specific emergency response plan.

Preparation:

1) The most common threats affecting herds are flooding, downed fences, fallen trees, collapsed structures and barbed wire fence-induced injuries. Early preparation can help you mitigate losses should your farm be in the path of winds, storm surge, flooding, or tornadoes.

2) Review your insurance coverage and inventories. Keep all important papers, including emergency phone numbers, accessible.

3) Examine your property for any structural defects or hazards. Reinforce barns and outbuildings, remove dead or weak trees, and repair fences. Secure tin roofs to prevent them from becoming flying debris. Construct berms adjacent to low-lying, flood prone areas to allow livestock to move to higher ground.

4) Develop arrangements with neighboring farms to assist one another with animal care. Clearly post evacuation plans, contact numbers and animal feed and care instructions.

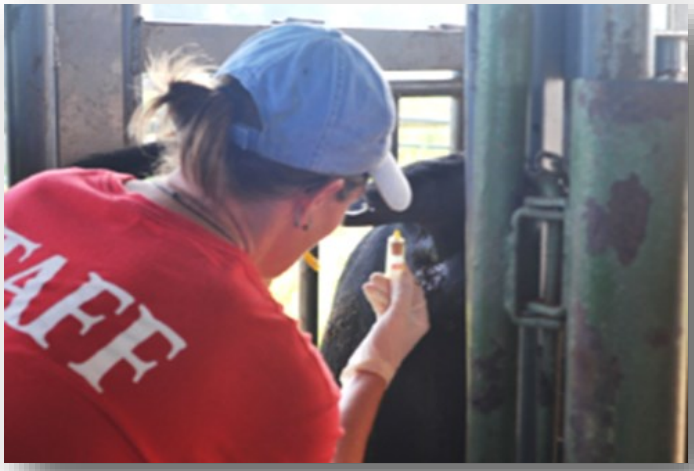
5) Ensure your animals' good health. Confer with your veterinarian to update vaccinations and for recommendations about dietary adjustments to reduce stress for your animals in the event that regular feed sources are temporarily cut off following the emergency.

6) Identify your animals to prove ownership should they become displaced. Maintain photos and descriptions. Examples of permanent ID: tattoos, ear tags, microchips. Temporary ID methods include livestock marking sticks, brands, and tags braided into manes.

7) Prepare emergency kits both for farm use and possible evacuation. Perform required generator maintenance throughout the year.

If you are considering evacuation with some or all of your animals, maintain names and requirements of potential destinations. Keep trailers, tires, and hitches in ready condition and practice loading animals. Consider back-up plans including professional animal transporters.

Pregnant or Open from previous page….



The third method of diagnosis is taking a blood sample. The producer takes a blood sample and ships it to a private lab or company, which then uses an enzyme linked immunosorbent assay (ELISA) to determine pregnancy status. The assay measures a protein (pregnancy specific protein B), which is produced by the embryo. Accurate pregnancy results can be achieved as soon as 28 d after breeding as long as the cow is at least 73 d past her last calving date (which most cows are). The assays are accurate at determining pregnancy status; however, the test does not give days old, sex, or health of the embryo or fetus. It is a cost effective method of giving an accurate diagnosis of pregnant or open. The blood draw can be conducted by the producer or farm staff and mailed to a participating lab for pregnancy determination.

Days of Gestation	Fetal Weight	Fetal Length	Fetal/Uterine Characteristics
30-35	1/100 oz	2/5”	One horn slightly enlarged. Uterus in position of non-pregnant uterus. Embryonic vesicle size of quarter
50-60	.25 - .5 oz	2 – 2.5”	Uterine horn oblong, soft and size of banana; fluid filled, and pulled slightly over pelvic rim. Fetus is mouse size.
100-120	.75 – 1.75 lb	10 – 12”	Both horns fluid filled, 4-5” diameter and pulled over pelvic rim. Cotyledons become palpable (quarter size). Fetus is large rate or small cat
180	10 – 16 lb	20-24”	Horns and fetus out of reach over pelvic rim. Cotyledons become enlarged (half dollar). Fetus is size of small dog.
210-240	20 60 lb	24 – 36”	Fetus is large enough to be felt just over the pelvic rim.

Early detection of pregnancy enables producers to maintain flexibility in marketing cull cows. Remember, approximately 5% of cattle found pregnant on day 30 after breeding will lose the pregnancy by day 60. However, after day 60, pregnancy loss decreases significantly. Certainly, we want to use the tools to your advantage, but understand how they work and the benefits of each method as you make your decision. Clemson University offers several hands on courses to teach advanced reproductive techniques with simulators and cow work. If you are interested in learning more, please contact Matthew Burns at burns5@clemson.edu.

Contact Us

State Beef Specialist and Livestock & Forage Program Team Leader:
Matthew Burns
(864) 656-1743
burns5@clemson.edu

Newsletter Editor:
Cassie Wycoff
(864) 984-2514 ext .117
cwycoff@clemson.edu

Visit us on the web at clemson.edu/extension/livestock