



The Heat of Breeding Season

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Quite a few of us in the Southeast are still in the middle of some very hot, humid weather. For the most part that's how summer is in Tennessee and Kentucky, along with the rest of the Southeast. Not only do we have hot weather to contend with, but we are also trying to breed sheep and goats during this time of year. Sheep and goats are unique in that they only experience estrous cycles when daylight starts to decrease which labels them as seasonally polyestrous. Meaning they have multiple estrous cycles during one season of the year. In general, most breeds will start to cycle in the fall, with a few breeds being an exception to this rule.

Several challenges arise out of this seasonality for those of us who raise sheep and goats in hot, humid areas. One of which is getting females pregnant early in the breeding season and having a successful gestation. Reproduction is a process that is taken for granted by livestock producers. We expect that if we have one buck with several females he should be able to breed them early in the season with no issues. That is all good and well until there is a problem with the male. For a male to produce sperm, deliver it into the female at the right time, and then have sperm find the oocyte and gain entrance is a huge accomplishment. Think of it as the Olympics for sperm! Once a sperm gains entrance, a variety of things have to happen for embryo development to begin and be successful. Not to mention the oocyte being on time and in

the right place to start with. If the male was successful, then that female will not come back into estrus or heat on her next cycle. That sperm gets a gold medal! If he was not successful then the female will re-cycle and start the process all over again. As sheep and goat producers it is important that our females settle early in the season so our lamb/kid crop will benefit from this advantage come spring time. This depends of course on your market but in general it is best to get them pregnant early. It is definitely best for everyone involved to have a successful male. Without gold medal males and sperm, females will continue to re-cycle and producers are often left scratching their heads. What happened? How can I catch this sooner?

Males face reproductive failure for a variety of reasons. Heat stress, illness, injury, lack of libido are just a few factors that interfere with a male's physical ability to breed females and sperm quality. For producers it is important that we catch these problems early enough, identify them, and act to prevent breeding season failure. One way to catch problems early is to use a breeding harness, paint, or other such marker on the male's chest to know if he is breeding females. You can change this color roughly every 2 weeks (depending on cycle length) and you will be able to notice when a ram or buck keeps re-marking the same females. A few of these re-marks are to be expected (females can contribute to failure), but if your male is perpetually breeding the same females after a few cycles it is time to intervene. Another recommended follow up method to the male marking females is the use of ultrasonography for pregnancy determination. The female's gestation should be around 45-60 days to best visualize the fetus/

fetuses, but can be done as early as 30 days. A veterinarian can perform ultrasounds on your females and oftentimes can count the number of fetuses and also give an estimation of age (if unknown). Fetal sexing is also possible during the 45-60-day timeframe with an experienced technician. Ultrasound is fast, efficient, and fairly simple. Abdominal ultrasound is performed in ewes and does in a non-haired area in their flank area, and is non-invasive. Another method of pregnancy determination in females is a simple blood test. There are a few different companies and tests available but in general pregnancy associated glycoproteins (PAGS) are the items of interest. These circulate in the pregnant female's bloodstream and can be detected by certain assays. These tests can be performed as early as 28 days post breeding, but more commonly 30-35 days post breeding depending on the test utilized. Producers can pull blood or their veterinarian can assist them with this, and the blood sample is then sent to a laboratory for analysis. Usually results can be sent in just a few days, but it is important to note that false positives and negatives, as well as pregnancy loss can occur. Some producers find it too time consuming to get a blood sample from each female, but there are others who like this method. In reality a combination of all methods (breeding harness or paint, ultrasound, and blood testing) should be utilized to ensure females are getting pregnant and remaining pregnant during the breeding season. I want to encourage producers to pick between these methods and decide which ones or which combination is best for them. You do not want to make it to December/January and realize that none of your females are showing signs of lambing/kidding. I realize that is an extreme example but it does happen, and can be prevented.

The important goal is to make sure your females are getting and remaining pregnant, and if they are not, then your goal is early intervention. Males can start the breeding season with undesirable fertility or it can pop up in the middle so having a plan to detect this is crucial. Breeding soundness exams are a great way to accomplish this before the breeding season starts and can be performed by a veterinarian. It is also imperative to have a backup plan. This can be in the form of multiple males, or quick access to a new male should yours prove to be sub-fertile and not capable of doing his job. I myself have had to drive to Illinois over a weekend to buy a new ram because a mature ram killed the ram lamb we were using! Accidents happen but it is important to keep your options open and not be caught up the creek without a paddle. If you have questions about ram/buck fertility, pregnancy determination, blood collection, etc. contact your local county Extension Agent or veterinarian. I cannot stress enough the importance of a good veterinarian client patient relationship, as well as a good relationship with your Extension Agent. Both of these are especially critical for small ruminant producers. If you have any questions about this article or small ruminants in general, please email me, jharri50@utk.edu. Happy breeding season!

Jessy Shanks, is the Small Ruminant and Youth Programs Specialist at the University of Tennessee, Knoxville. Jessy raises Southdown and Dorper sheep with her husband and daughter just below Knoxville. Her background is in reproductive physiology and she enjoys teaching producers and youth about small ruminants in any way possible.

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