UNITED STATES LAMB RESOURCE CENTER

Increasing Your Lamb Crop Series

Test for Pregnancy Status

Introduction

Pregnancy detection in the ewe provides the opportunity to adjust nutritional and lambing management to save on feed and labor costs. The old rule of thumb that "one open ewe takes the profits of five producing ewes" may be true when all costs are calculated. Early determination of fetal numbers and gestational stage gives the option of sorting for nutritional demands in late pregnancy and early lactation. Without this information, the single bearing ewe is being fed too much, or the twin bearing ewe too little. Open ewes are robbing the pregnant ewes of necessary nutrition. Grouping according to gestational stage will also save on labor and allow for better utilization of facilities and biosecurity.

Waves are transmitted from the handheld ultrasound probe to and from the specific body tissue forming the ultrasound image.

The key in any type of business is producing an end product, or more simply put, production. The economic benefit of pregnancy testing in cattle, whether it be beef or dairy, has been proven time and time again. The product at the farm or ranch level from a cow is the calf and milk. Individual production must be taken into account in those businesses and boils down to pounds of meat or milk produced per cow. This is not only looked at annually, but also over the lifetime of the cow. The earlier one can tell if there is a viable pregnancy the more potential for higher profit. So why is this so different in sheep? Or is it?

Pregnancy diagnosis in cattle is conducted via rectal palpation by a veterinarian palpating the uterine tract for the presence of a fetus and determining age based on the size of the fetus. Due to the size of the ewe, this has not been an option. This left ewes being pregnancy tested, often referred to as bagging, to some degree at shearing, with questionable accuracy. Or ewes that have not lambed with group 1 get put in with group 2, and so on, until the end of lambing season. This was the case until ultrasound technology became more affordable, making it more beneficial to utilize.

Pregnancy testing methods

Marker paint – For a smaller, more intensively managed breeding system, the use of marker paint, or a harness on a ram, can provide limited information on the pregnancy status of a ewe. It is not fool proof as not all ewes marked will become pregnant and remain pregnant. Recording each marked ewe is required on a daily basis and grease or chalk must be reapplied as needed, changing the color at 14-day intervals. A ewe may continue to be re-marked, even though she may already be pregnant. This is common with an aggressive ram, certain ewes and/or tight quarters. A noted benefit of using markers is the potential to see a ram breeding problem earlier if all ewes continue to re-mark.

Blood testing – Blood testing is another method for pregnancy checking ewes. Measuring blood progesterone concentration has been trialed several times. A pregnancy-specific protein B (PSPB) may also be tested for in the blood after 30 days of pregnancy with relative success. This will provide an idea of pregnancy status, but does not indicate fetal numbers or stage of the pregnancy. Some false negatives may occur if the ewe is around 30 days pregnant.

Ultrasound – Ultrasound imagery is the most reliable form of pregnancy checking the ewe. More information will be gained by the producer, giving him or her the tools to make better management decisions.

Ultrasound technologies were developed through the scientific study of sound waves. The older, A-mode ultrasound technology does not produce an image. It is widely available and, in recent years, has made a comeback in sales due to marketing. It has a beep and/or light that goes on when the pregnancy is detected. What actually is being detected is fluid, therefore, accuracy is quite variable. The B-mode ultrasound technology has the capability of producing an image. Waves are transmitted from crystals in the handheld ultrasound probe to and from the specific body tissue forming the ultrasound image in gray scale on the screen. The denser the tissue the lighter or whiter the tissue appears, such as bone, whereas liquid appears black on the image. Although ultrasound equipment was initially developed and used in human medicine, the development of equipment for use on animals has been slow because of high cost, portability and durability.

Ultrasound provides information

Pregnancy checking the ewe with an ultrasound can provide very beneficial information. The following will help producers know what can be identified and some of the ways to use this information.

- **Pregnant or open** – Save feed for the pregnant ewes; they are the ones that need it. Cull all open ewes as soon as possible to save on feed, labor and medicine costs.
  - Ewes that are consistently open should not be retained. Without a lot of medical intervention, testing or hormonal therapy, these ewes will not get pregnant. Get rid of those barren ewes now.
  - Healthy animals are less labor intensive, saving time, medicine and money. When a ewe has aborted, or is a poor doer, they often have chronic problems preventing them from getting pregnant. An ultrasound image may detect the problem, depending on the severity of inflammation and damage. Producers are encouraged to cull those ewes to clean up the herd.
  - Stop the spread of disease and cut your costs. When debilitating or reoccurring problems, such as footrot, are present, it is a great time to pregnancy test and cull open ewes.
    - **Example:** The medicine needed to treat footrot in a 170-pound ewe could be LA200, at $1.10/injection with multiple treatments often necessary (average 4X). The generic version of Oxytet 200 is $.50/injection. Using Draxxin is $9.00/dose; Zactran is $6.00/dose.
- If producers incorporate unseasonal breeding, it is advantageous to know the pregnancy status as early as possible allowing open ewes to be put back into the breeding group sooner.

- **Fetal counts** – Efficiently manage the proper care and nutrition of the pregnant ewe depending on the number of lambs she is carrying. A ewe carrying multiple lambs requires 25% higher nutritional energy than ewes carrying a single. Proper nutrition can prevent fetal loss and/or prevent difficult lambing, poor colostrum, poor milk production, poor mothering and pregnancy toxemia.
  - Single bearing ewes can be lambed out on the field or pasture – with or without the use of a dog or donkey - with little oversight or labor.
  - Ewes with multiple lambs can lamb in a shed, getting the added care for higher lamb survival.
  - Some ewes with single lambs can be utilized for grafting of a triplet.
- **Gestational dates** – The diameter of the fetal thorax or head can be used to estimate the number of days pregnant.
  - Use this information to group animals according to when they will lamb when space is limited in the shed or corral for the close up group.
  - Use the estimate to group according to nutritional needs.
  - It is useful to have estimated day pregnant when a ewe gets marked multiple times by a ram.
  - This is important information, as well, for 4-H or FFA shows and the purchase of a bred ewe.
  - The estimate will also help you to simply get a full night of sleep when you know that no ewes will be lambing until the following weekend.

The portable ultrasound has been a game changer for the amount of reproductive information collected and utilized in livestock production.

Testing early

The earlier producers are able to pregnancy check the ewe, the earlier she can be managed correctly. Whether to cull, feed accordingly or put into a different breeding group, the advantages of ultrasound will save time and money.

The best time to schedule a flock's ultrasound is when the ram is turned out with the ewes. Timing is very important when counts and dates are needed. There are, however, limitations to the information an individual ultrasound technician can provide based on the technician's experience, the ultrasound machine used, the facility, the amount of help provided and the timing of the scanning after mating.

Producers should be prepared to follow any requests of the ultrasound technician prior to pregnancy checking ewes to ensure scanning accuracy. Fetal death loss does occur and will vary greatly between producers, which can be the result of poor nutrition. Producers should be observant and notice what and how much animals are eating. They should also watch for signs of illness, injury and stress. Helpers on the farm or ranch should also know what is going on and why.

Ultrasound technology is the most useful and practical method for pregnancy checking the ewe. The earlier in the pregnancy the ewe can be scanned, the earlier she can be properly managed to avoid problems. Pregnancy checking will save time, medicine and labor all adding to the bottom line. It will provide valuable information to help producers determine which animals to retain and which animals to cull based on lack of productivity or the presence of disease.

Photo by Lisa Surber

Ewes with multiple lambs can lamb in a shed, getting the added care for higher lamb survival.

The **earlier** in the pregnancy the **ewe can be ultrasounded**, the earlier she can be properly managed to **avoid problems**.

One producer benefits from early ultrasound

In 2002, the producer of a small farm flock in Colorado came across a "great deal" – free pasture for the late summer and fall. The grass was good quality and water was nearby.

Late that fall, the 48 head of black face ewes were ultrasounded. The ewes were in good body condition with no visible signs of illness. There was a difference in the appearance of the pregnancy on a couple of ewes noted by the sonographer. Upon a closer look, it was described as floating cobwebs; several of the fetuses were showing movement with visible heartbeats. Randomly, a ewe would come through the chute with the skeleton of the fetus appearing normal. The amniotic fluid was clear with the proper amount in proportion to the fetus. The fetuses were still, lying on the floor of the uterus and no heartbeats were detected.

The differences between this and a normal, healthy pregnancy were shown to the producer and several questions were asked regarding flock health, any early abortions, vaginal discharge, loss of wool, etc. No signs of illness were noted, nothing that alerted the producer. Only eight of the tested ewes showed completely healthy, normal-appearing pregnancies, and three others were open. The timing of scanning was early enough that the ram was turned back in with ewes that day.

Two weeks later, the producer remembered when he had removed the ram. The ram appeared more ragged than normal at the end of the breeding season with a slight respiratory problem and had some wool break. Something, potentially a bluetongue virus, had gone through the flock. No abortions or vaginal discharges were ever seen during the next month. The ewes, being in good health and on a good nutritional plan, absorbed the fetuses.

Out of the original 48 ewes, the 8 showing normal pregnancies lambed on time with healthy lambs. Luckily, the producer had ultrasound pregnancy checks and was able to cut his losses. With reintroduction of the ram, the remaining 40 ewes did go on to produce lambs in May.

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Literature cited

All data are from records kept by the authors including Sheep Integrated Resource Management Records. (1983-1993), Veterinary Extension Records (1993-2009) Cooperative Extension Service and Department of Clinical Sciences, Colorado State University and Ultrasound Management Records (2009-2015) Optimal Livestock Services, Fort Collins, CO.

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