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Sheep Pregnancy Checking by Ultrasonic Sound

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Principles

Ultrasonic sound waves of about two million cycles per second can pass through living tissue. Used to determine sheep pregnancy, these sound waves are painless and have no harmful aftereffects to the ewe or fetus.

The working part of the instrument is the transducer; it transmits and receives the sound waves. The transducer may take various shapes and may be located on various positions on the pregnancy-checking unit. It may also be attached permanently to the unit or may be connected by a shielded cable. A crystal in the transducer converts electrical energy into sound energy, which is sent into the animal. These sound waves do not travel through air; consequently, air must be sealed out with a non-detergent motor oil or other appropriate sealant.

When these sound waves encounter interfaces of different kinds of tissue—skin, fat, lean, or connective—they are reflected back to the transducer, converted to electrical energy, and analyzed.

If the instrument receives signals that indicate pregnancy, the instrument indicates this with a steady light or signal, or both.

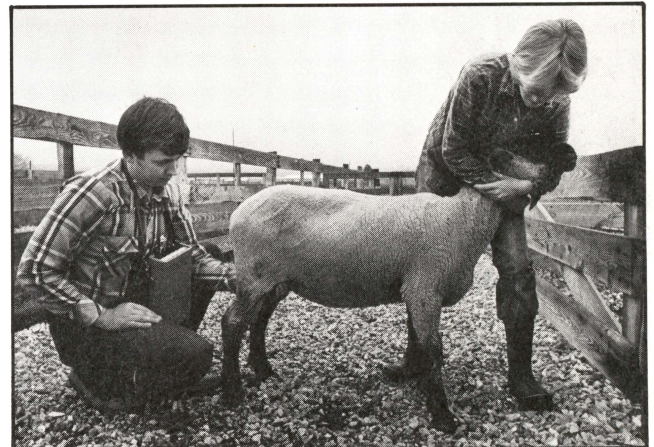
Results of a University of Missouri study evaluating the pregnancy detector Scanopreg* on sheep are summarized:

| #Checked | #Pregnant | #Open | #Pregnant Lambled | #Open Lambled |
|----------|-----------|-------|----------------------|------------------|
| 84 | 72 | 12 | 72 | 0 |

Based on lambing dates, the average day of gestation when pregnancy was detected by the Scanopreg was day 57. This is comparable to the 60 day recommendation offered by Scanopreg manufacturers.

As soon as the ewe becomes pregnant, the uterus begins to fill with fluid. The weight of the pregnant uterus causes it to sink downward through the intestines to the bottom of the abdominal wall. As gestation progresses, fluid continues to expand the uterus forward and to the animal's right side. At about 60 days, there is enough uterine fluid to be detected by ultrasonic techniques. Beyond 120 days, the fetus fills the uterus, and ultrasonic methods can no longer detect pregnancy.

*The University of Missouri does not endorse or recommend any product mentioned by brand name.



Two people speed pregnancy checking.

Diagnosis

To diagnose pregnancy, the sound beam *must* be aimed correctly. Hold the probe flat against the non-wooly area of the right flank, 2 to 3 inches forward to the right nipple. Aim the sound beam forward about 35 degrees and toward the opposite side behind the last rib. The urinary bladder is just behind the uterus. If sound beam is directed through it, the instrument gives an erroneous pregnant signal.

For accuracy, the ewe should be standing in a normal position. Two people speed pregnancy checking when one catches and holds the ewes while the other makes the check.

Procedure

- Turn power switch on and check function of instrument.
- Apply non-detergent oil to the probe and touch the probe to the flank as previously indicated.

Good contact is essential, so use sufficient oil to dissolve any foreign substance or flaked dried skin scales. If the instrument light flickers, apply more oil for good contact.

- Pregnancy is indicated by a steady, uninterrupted tone or green light and, on visual read models, by the absence of light or peaks in the middle of the screen.

In most cases, when checking bred ewes that are 60 or more days into gestation, the instrument signals pregnancy almost immediately after the probe contacts the flank.

- Open is indicated by red or amber lights and, on visual read models, by a continuous set of dots or peaks.

Causes for Diagnostic Errors

- Incorrect angle of beam direction: beam direction through urinary bladder,
- Gas pockets in intestines,
- Ewes in estrus occasionally collect enough uterine fluid to cause the uterus to drop to the bottom of abdominal cavity.

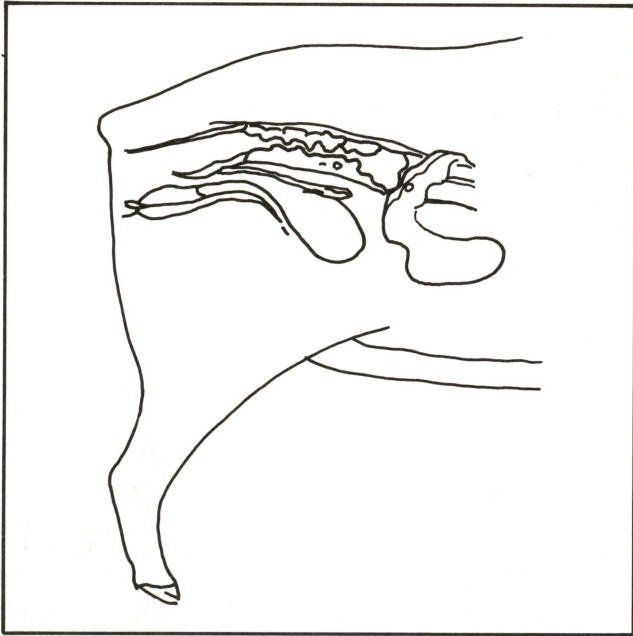


Figure 1. 0-50 days of gestation.

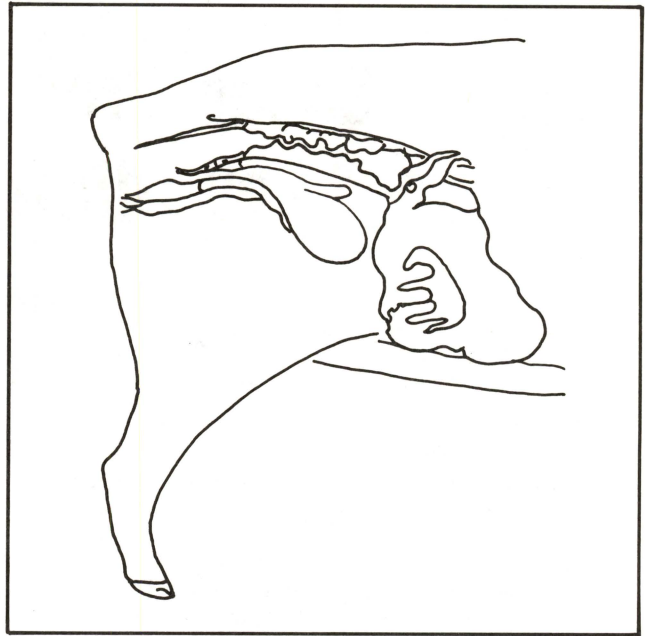


Figure 2. 60-110 days of gestation.

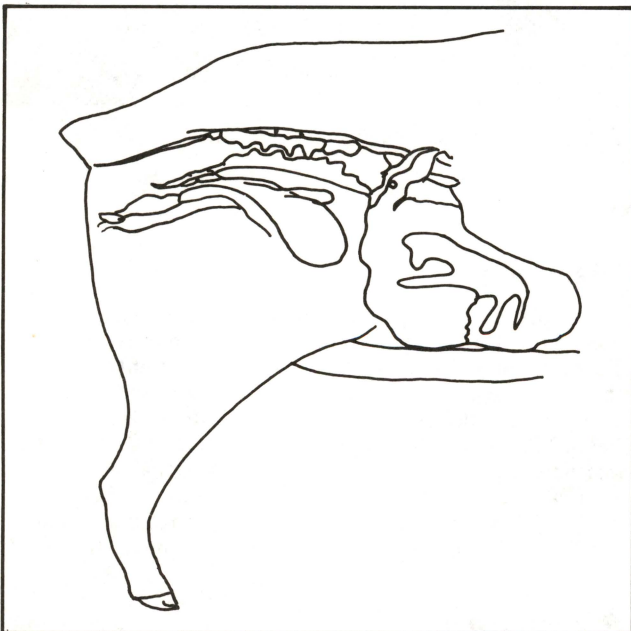


Figure 3. Late gestation, more than 110 days.

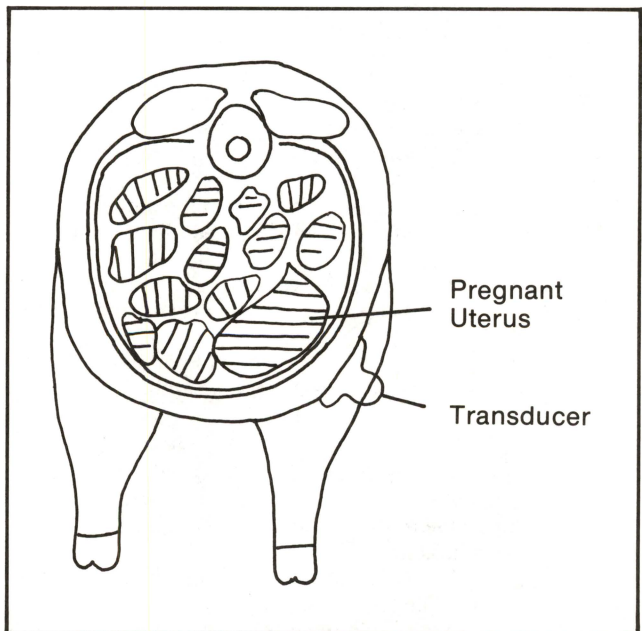


Figure 4. 65 days gestation.