

Using ultrasound for fetal sex determination can be useful to herd management programmes. You can estimate the number of replacement heifers, further justify the culling of a cow with chronic disease (mastitis, lameness, etc.), and determine pricing for a sale and/or purchase.

Fetal sex is determined by using an ultrasound machine to evaluate the location and structure of the genital tubercle (precursor to the penis and clitoris).

Fetal sex can be determined as early as 55 days post conception and up to approximately 110 days. **The ideal time frame to diagnose fetal sex is between 55 and 70 days.**

The resolution achieved by the linear transducer (probe) of the Easi-Scan:Go can aid identification of the genital tubercle, whereas the wide field of view produced by the Easi-Scan:Go Curve can be helpful in older fetuses.

Position the fetus

Position the fetus toward the top centre of the screen (close to the ultrasound transducer) to maximise image quality. The closer the fetus is to the bottom of the screen, the more difficult it will be to determine its sex (**Figure 1.**)

To position the fetus close to the top of your screen, move the transducer around the outside of the uterus. This brings the probe closer to the fetus and moves the fetus to the top of the image (**Figures 2.**). Sometimes it works best to position the transducer under the uterus so the weight of the pregnancy is pushing towards the probe.

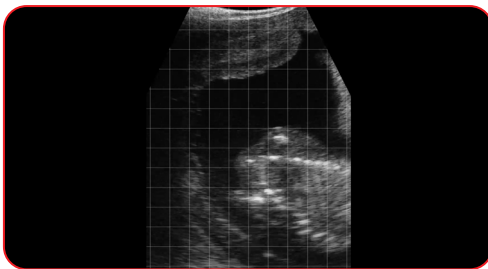


Figure 1: In this image the fetus is positioned further from the transducer at the bottom of the screen. Identifying the genital tubercle from this position will be very difficult.

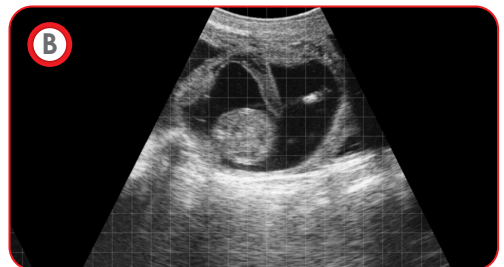
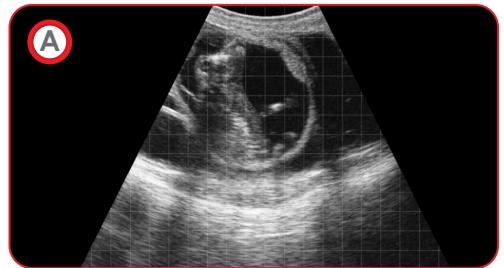


Figure 2: By moving the probe around the outside of the uterus we can alter our view of the fetus from that seen in Image A to that of Image B. This brings the fetus closer to the probe and has repositioned the fetus so that identifying and tracing the umbilical cord is easier.

Male fetus determination

It is easier to identify males, so you should always start by checking for the male genital tubercle (GT). If you do not see a distinct male feature, it is important to perform a complete examination of the fetus and identify the female GT.

The male and female GT have a similar appearance. **The location is key to determining between male and female.**

Start by identifying the umbilical cord and follow it to its connection at the abdomen of the fetus (**Figures 3. and 4.**). Look closely at

the area immediately caudal to where the umbilical cord connects to the fetus.

You should be looking for:

- The male GT. It appears as two bright white parallel lines (bilobed structure), it can appear tri-lobed in older fetuses (**Figures 5. and 6.**)
- It is located at the base of the umbilical cord
- The scrotum is located between the hind limbs. It appears as a tri-lobed structure (**Figures 7. and 8.**)

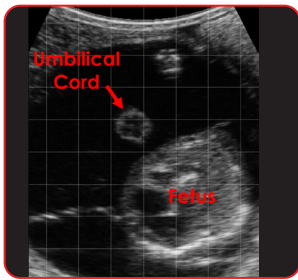


Figure 3: The angle of the ultrasound beam relative to the fetus will affect how the umbilical cord appears. Here, the umbilical cord is in cross section and appears separate to the fetus.

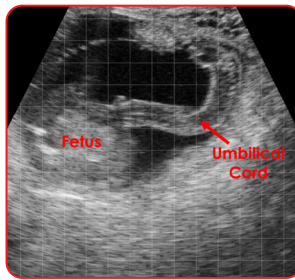


Figure 4: The umbilical cord can be seen attaching the abdomen of the fetus.

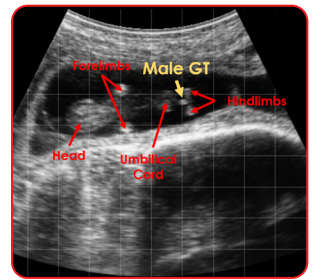


Figure 5: The male GT can be seen just caudal to the attachment of the umbilical cord to the abdomen.

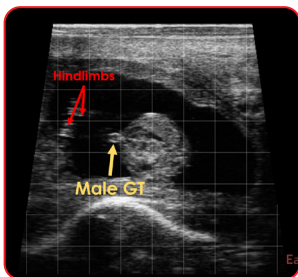


Figure 6: A transverse section of the fetus just caudal to the umbilical cord attachment is shown. The male GT can be seen as hyperechoic (bright) parallel lines.

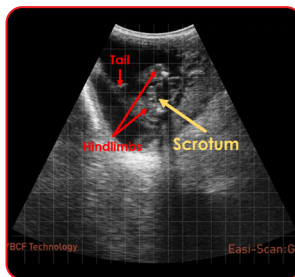


Figure 7: In this male fetus the scrotum can be identified between the hindlegs and appears as a trilobed structure.

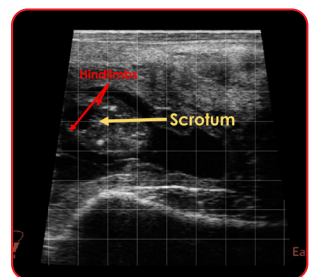


Figure 8: In this male fetus the scrotum can be seen as 3 parallel echogenic lines between the hindlimbs.

Female fetus determination

To identify a female fetus, start by searching the tail region.

You should be looking for:

- The female GT. It appears as two bright white parallel lines (bilobed structure)
- It is located behind the hind limbs and under the tail (**Figures 9., 10., 11., and 12.**)

Once the tail is located, try to see both the tail and female GT at the same time. This ensures you are not incorrectly identifying the tail as the female GT.

Once you have identified the tail and female GT you should locate the hind limbs. This ensures you are not confusing a leg bone with a female GT.

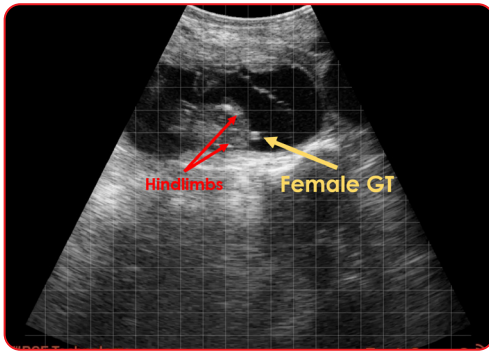


Figure 9: The parallel echogenic lines of the female genital tubercle can be seen caudal to the hindlimbs under the tail.

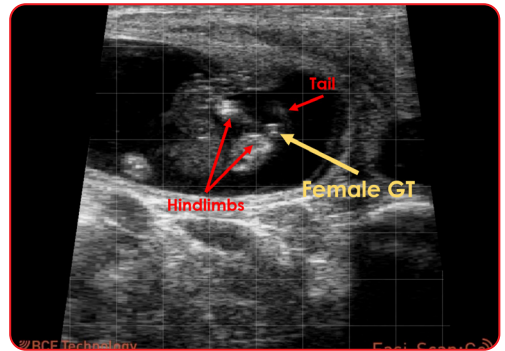


Figure 10: The female GT can be seen under the tail.

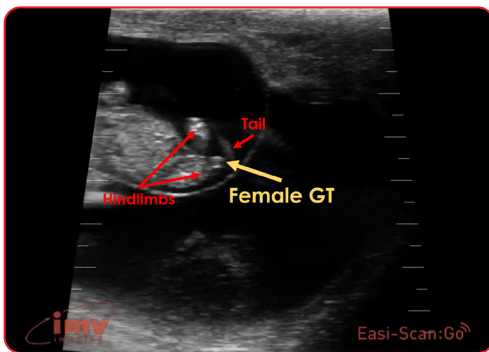


Figure 11: The female GT can be seen under the tail.

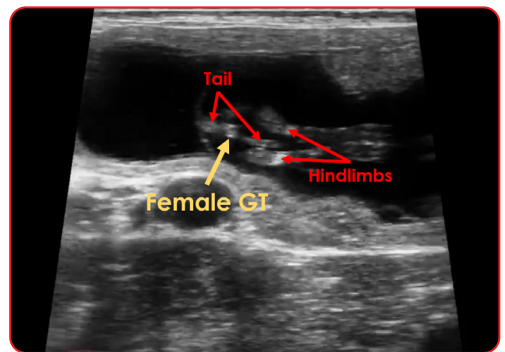


Figure 12: The Female GT can be seen under the tail. It is important to identify the tail as a separate structure and not mistake the female GT for the tail.



Find more learning materials and guides at www.imv-imaging.co.uk.

This quick guide is intended to help you start the learning process of identifying fetal sex.

Training courses that cover this topic are available to help you advance your skills further.

Contact us now

 www.imv-imaging.co.uk

 +44 (0) 1506 460023

 info@imv-imaging.com

 facebook.com/IMVimaging

 [twitter/IMVimaging](https://twitter.com/IMVimaging)