



# Repro Tracks

► by **Bill Beal**, beef cattle reproductive physiologist, Virginia Tech

## Is ultrasound a better preg-check?

*Use of ultrasound extends the ability of veterinary practitioners performing reproductive examinations of cattle. The most common advantages cited are enhanced differentiation of ovarian structures, more accurate fetal aging and the ability to determine the sex of a fetus. Some fetal malformations may also be detectable using ultrasonography. While use of ultrasonography may be advantageous, it is usually more costly than traditional rectal palpation, and the benefits of using ultrasound diagnostics must be great enough to offset the higher costs.*

### Breeder question No. 1:

*I manage a registered Angus farm and use the local veterinarian to do my pregnancy checks, breeding soundness exams and other reproductive services. All the pregnancy diagnoses and ovarian exams performed by my veterinarian are done by rectal palpation. My brother manages a herd in West Virginia, and he has a consulting veterinarian who travels over much of the southeastern U.S. do their reproductive work. The consulting veterinarian does pregnancy checks and ovarian exams with ultrasound, and he routinely does fetal sexing of cattle for their sale. Is the use of ultrasound better for doing herd reproductive checks?*

**Response:** Using ultrasonography to evaluate ovarian function and diagnose pregnancy can provide some advantages over rectal palpation. Pregnancy diagnosis can be done earlier using ultrasound (21-25 days postbreeding) than by rectal palpation (30-45 days postbreeding), and many practitioners who have limited experience with rectal palpation are more accurate in performing fetal aging (to predict calving date) or distinguishing ovarian structures [follicles, corpus luteum (CL), cystic ovarian structures, etc.] with ultrasonography. As you pointed out, fetal sexing can only be done with ultrasound, but it must be done in a specific “window” of time, from 55 to 120 days postbreeding.

Obviously, the use of ultrasound technology extends reproductive evaluations beyond what can be done with rectal palpation alone. However, the benefits of using ultrasonography must be weighed against usually a higher cost, less-flexible timing and, in some cases, increased labor requirements. Furthermore, when considering the use of any new technology, every producer must consider the question,

“Will the benefits of this technology offset the added direct and indirect costs?”

I surveyed two veterinary practices that offer both rectal palpation and reproductive evaluations with ultrasound. Both practices charged for services on an hourly basis and quoted me a cost ranging from \$175 to \$200 per hour when using ultrasound and \$120 to \$140 per hour using rectal palpation without ultrasound. Both practices indicated they had a trip (mileage) charge and a “setup” fee. Practitioners from both practices indicated if working facilities were good they could palpate or ultrasound 40-60 head per hour.

Based on those charges and work speeds, it made the cost of ultrasound pregnancy diagnosis in a 100-cow herd about \$1.15 per head more expensive than checking pregnancy by rectal palpation. Fetal sexing would take longer, and fewer head (40 per hour) could be done per hour. Hence, the charge for ultrasound pregnancy diagnosis with fetal sexing would be approximately \$2.08 more per head than using just palpation to check for pregnancy.

If fetal sexing increases the value of cows and heifers sold in your brother’s sale, or if he is getting a more accurate estimation of the expected calving dates for cows bred by natural service, those advantages may justify added costs per head for ultrasound pregnancy diagnosis and sexing.

If having that knowledge about your cows would increase their marketability or save some calves by having a better prediction of their expected birth dates and if you can get your cows scanned in the correct “window” without a lot more labor or hassle, you should consider using a practitioner who has an ultrasound unit. On the other hand, if all you need to know is “pregnant” or “open” information and your veterinarian is providing that accurately and less

expensively, don’t switch to ultrasound just to keep up with your brother.

### Breeder question No. 2:

*With all the discussion about arthrogryposis multiplex (AM) and now hydrocephalus and fawn calf syndrome, I wondered if any of these congenital abnormalities in calves could be detected with ultrasound during a routine pregnancy exam.*

**Response:** In the past five years several veterinarians have indicated to me that they detected the presence of hydrocephalic fetuses during routine ultrasound pregnancy checks. None have ever reported the detection of calves with arthrogryposis multiplex (AM) or fawn calf syndrome (FCS) when performing ultrasound pregnancy diagnosis or fetal sexing.

When I specifically asked one practitioner who scans thousands of dairy and beef cows each year if he thought he could detect AM calves prior to 120 days of pregnancy, he said it was unlikely. I searched the scientific literature and could not find a single report of AM or FCS calves being detected using ultrasonography.

Finally, I posed the question to David Steffen, the pathologist at the University of Nebraska who is consulting with the American Angus Association. He verified that there is little reason to believe the subtle anatomical malformations present in calves with FCS or AM would be noticeable during the first 120 days of pregnancy.

Therefore, it appears it may be possible to detect hydrocephalic calves during routine ultrasound pregnancy diagnoses, but the other, more subtle fetal malformations are probably not detectable with ultrasound.

**Editor’s Note:** *Bill Beal is a beef cattle reproductive physiologist at Virginia Tech. He conducts research involving estrus synchronization, AI, ET and the use of ultrasound technology. This column is designed to provide answers to questions about reproductive management commonly posed by commercial and purebred breeders. If you have questions or comments related to the reproductive management of cows or bulls, e-mail them to him at [wbeal@vt.edu](mailto:wbeal@vt.edu) or mail them to him at the Dept. of Animal & Poultry Sciences, Virginia Tech, Blacksburg, VA 24061-0306.*