

Animal Sciences



Non-pregnant Cows are Non-productive Cows

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A major factor determining profitability in a beef cattle operation is reproductive efficiency. For a cow/calf producer, it has been estimated that a one percent improvement in reproductive performance generates up to a three-fold greater return on investment than a one percent improvement in growth and/or product performance.

From a reproductive management standpoint, goals that a beef producer should have are: 1) greater than 90% of their cows wean a calf each year, 2) each cow produce a calf every 12 months, and 3) a tight calving interval. Two production practices that can facilitate achieving these goals, provide an opportunity to evaluate reproductive efficiency, and enhance profitability are: 1) a breeding soundness evaluation of bulls before the breeding season; and 2) pregnancy testing of cows upon completion of the breeding season.

The National Animal Health Monitoring System (NAHMS) indicates that less than 20% of beef producers utilize pregnancy diagnosis in their cowherd. Given the opportunity cost of identifying pregnant versus non-pregnant cows, this number is significantly lower than it should be.

Benefits of Breeding Soundness Evaluation of Bulls

A reproductive management tool that is under utilized by beef producers is a breeding soundness evaluation (BSE) of their bulls. A BSE is a reliable and relatively inexpensive way to assess the breeding potential of a bull and eliminate bulls with reduced fertility.

A BSE involves: 1) visual assessment of the feet, legs, eyes, teeth, and external genitalia, 2) evaluation of the accessory sex glands, 3) measurement of the scrotum, and 4) collection and microscopic evaluation of a semen sample. These measurements assess whether the bull is capable of servicing females. Bulls should receive a BSE yearly by a qualified veterinarian at least 60 days prior to the start of the breeding season.

There are three common misconceptions about bull breeding soundness exams.

- “He’s sired calves the past several years and there is no reason to think he can’t this year.” Things change. Bulls get frostbite, infections, tumors, and injuries. In addition, nutrition and advancing age can reduce fertility.
- “I don’t think he needs testing, I just bought him and he was guaranteed.” Many bulls are sold privately with a guarantee in lieu of testing, not after testing. A bull might be guaranteed, but this is little consolation when cows turn up open next fall at pregnancy check or next calving season.
- “Breeding soundness evaluations are only done to eliminate sterile bulls.” The reality is that the majority of bulls are not sterile; however, due to a number of reasons, including weather, nutrition, and age, a lot of bulls have reduced fertility. Bulls that do not settle their fair share of cows early in the season are contributing to poor reproductive efficiency, which may be more costly than a dead calf. A 21-day delay in breed back can easily cost a producer 35 or more pounds of calf at weaning time. With today’s prices, this can mean a significant loss of income.

Benefits of Pregnancy Testing:

Identifying both non-pregnant and pregnant cows early following the breeding season offers many management and economic benefits. Identifying pregnant cows and predicting the anticipated date of calving can allow separate management of early calving and late calving cows. Additionally, this information can be used to assist in culling and marketing decisions (i.e., culling cows anticipated to calve late in the subsequent calving season). Furthermore, as will be discussed later, new ultrasound technologies allow producers to not only know if the cow is pregnant, but also know whether it is a male or female fetus. This information can be valuable when considering value-added market opportunities.

The greatest benefit of pregnancy testing is the identification of non-pregnant animals. Currently, this has even greater importance considering the high cost of feedstuffs. In general, approximately 55 to 70% of the costs of keeping a cow are related to nutritional inputs. Producers must recognize that a **non-pregnant cow is a non-productive cow** and maintaining her through a five to eight month winter feeding period can easily result in costs over \$200. Thus, identifying and removing non-pregnant, non-productive cows from the herd as soon as possible following the breeding season can result in significant cost savings.

Additionally, identifying non-pregnant females can help eliminate unidentified (environmental or genetic) fertility problems. Low pregnancy rates and extended calving seasons may reflect problems with bull fertility, infectious disease, or inadequate nutrition, which can be managed once recognized.

Techniques for Pregnancy Testing

Rectal Palpation. Rectal palpation is an accurate form of pregnancy diagnosis. Trained professionals can detect pregnancy as early as 35 days following mating and can provide an approximate age of the fetus that can be used to calculate anticipated calving date. A disadvantage of rectal palpation is that it provides little information about the health or viability of the fetus. Therefore, females with a nonviable or dying fetus can be diagnosed as pregnant.

Transrectal Ultrasonography. With the advent of ultrasonography, diagnosis can be accomplished as early as 28 days following breeding with a high degree of accuracy in determining pregnancy status and age of the fetus. A skilled technician can perform pregnancy

diagnosis with transrectal ultrasonography as rapidly as rectal palpation. Furthermore, the fetal heart begins to beat approximately 21 days following fertilization, which allows fetal health and viability to be more accurately assessed.

Ultrasonography can also make it easier to identify twin pregnancies so that these females can be more intensively managed during late pregnancy when the nutrient requirements are highest. Another advantage of ultrasound is that it allows producers the opportunity to determine the sex of the fetus. This is typically done between days 55 and 80 of gestation. Trained technicians can often accurately predict the sex of the fetus greater than 90% of the time. Knowing the sex of the fetus can facilitate value-added marketing opportunities.

Blood Testing. Recently a method to diagnosis pregnancy via blood sampling has been developed and marketed. The procedure identifies pregnancy status in cows as early as day 30 of gestation (97% accurate) by measuring the presence of Pregnancy-Specific Protein B (PSPB), a protein in cow's blood produced by the placenta. One caveat of the test is that blood samples cannot be taken prior to 90 postpartum due to the increased likelihood of false positive results. This is an accurate and cost effective (~\$2.25/blood sample) method to identify pregnancy status in cows in as little as 30 days after the end of the breeding season.

It is important to recognize that with rectal palpation, transrectal ultrasonography, and blood assays, a small proportion (~5%) of cows diagnosed pregnant early in gestation (prior to 60 days) will abort and thus fail to calve.

Conclusion

Identifying bulls with reduced fertility and/or capacity to breed cows is critical for optimizing the reproductive efficiency of the cowherd. Additionally, utilizing pregnancy testing allows producers to make critical management decisions that can provide significant economic rewards to the operation.

Spending a few dollars and a few hours conducting a Breeding Soundness Exam on bulls and getting cows pregnancy tested can dramatically alter input costs and therefore profitability of the cow-calf enterprise.

