

VETERINARY CALL

by Bob Larson, Kansas State University

Reproductive Expectations for Cow Herds

What standards should you set for pregnancy rates?

There are many reasons why a cow may not be pregnant after running with bulls for several weeks. Some of these reasons are due to subfertility on the part of either the cow or the bull, but fertile cows can also be open after a breeding season.

Researchers estimate the likelihood of a live calf being born following the mating of a fertile bull with a fertile cow during a single heat cycle is about 60-70%.

Nearly 100% of fertile matings will result in fertilization, but there are many opportunities for problems that halt the normal progression of the pregnancy. It is estimated up to 30% of early embryos are lost by Day 14 of pregnancy. If the pregnancy is lost by this time, the cow will usually re-cycle. If the bull is still in the breeding pasture, she will be bred again and have another 60-70% likelihood to carry a calf all the way to birth.

A few more embryos are lost between Day 14 and Day 42 of pregnancy. Losses at this stage will result in a delay before the cow resumes cycling. We don't expect

very many pregnancies to fail past Day 42, but a few do. Some investigators have estimated that 2-5% of pregnancies that reach 42 days will lose the fetus sometime before the birth of a live calf.

Because only 60-70% of fertile matings from each heat cycle will

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result in a live calf, it is important that most of the cows have the opportunity to be bred more than one cycle before the bulls are removed from the breeding pasture.

Using a 65-day breeding season as an example, cows that cycle within the first three weeks of the breeding season have the opportunity to re-cycle by Day 42 if they lose the first mating's pregnancy and again by Day 63 if they lose a second pregnancy — resulting in three opportunities to maintain a pregnancy to calving. In contrast, cows that do not start cycling until the second 21 days of the breeding season have, at most, one more opportunity to be bred if they lose the first pregnancy.

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of cows with three opportunities to become pregnant will give birth, but only 88% of cows with two opportunities are predicted to give birth to a live calf. This illustrates the importance of having a high percentage of the herd calve early. The average length of time to resume cycling after calving is about 50-60 days. Cows that calve later than 40 days after the start of the calving season are unlikely to be cycling within the first 21 days of the next breeding season.

In order to reach the goal of 95% pregnant during a 65-day breeding season, a high percentage of the herd needs to calve early. Cow body condition, bull breeding soundness and reproductive disease control must all be optimal.

Any reduction of cow or bull fertility or a long previous calving season will make it mathematically impossible to reach the goal of high reproductive success during a controlled breeding season. [\[A\]](#)

Editor's note: Robert L. Larson is a professor of production medicine and executive director of Veterinary Medicine Continuing Education at Kansas State University.