



Reproductive success starts way before breeding

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Regardless of the voluntary waiting period you set for your farm, a cow's reproductive success is shaped by events that occur long before breeding. Reproductive success depends on identifying the cow in heat, breeding, and then successfully fertilizing the egg to generate an embryo, as well as embryo survival. However, all of these processes are influenced by what happens weeks earlier, during the transition period.

The transition period corresponds to the weeks around calving—both before and after. This is a critical time because it marks the end of the pregnancy and the start of lactation, which requires several metabolic adaptations. These adaptations often lead to common challenges for dairy cows, such as insufficient feed intake to supply energy needs, body weight loss, weakened immunity, and higher risks of disease. While these issues primarily occur in early lactation, their consequences can last throughout the whole lactation and affect the reproductive performance of the herd.

Return to heat after calving

The voluntary waiting period is based on giving some time to the cow before restarting breeding, to allow the uterus to recover and the ovary to return to its normal cycles after calving. Normally, it takes a few weeks for the ovary to restart cyclicity after calving. However, cows experiencing a severe negative energy balance – where their energy intake doesn't meet the high energy demands of early lactation – often delay ovarian activity. This is also observed in cows that calve twins, have difficult births (dystocia), have elevated beta-hydroxybutyrate (BHB) levels in milk in early lactation (ketosis), or other post-calving diseases. The delay in returning to normal ovarian activity compromises future reproductive performance.

Heat expression and detection

If you are not using hormonal protocols to breed cows, your reproductive program relies heavily on successfully identifying cows in heat. However, the challenges of the transition period can reduce heat expression, making it more difficult to detect cycling cows, and lowering the insemination rates.

Heat duration and intensity (how strong the heat signs are presented) are affected by many factors. Researchers showed that cows with subclinical ketosis, endometritis, lameness or significant loss of body condition score after calving have shorter, less intense heats, complicating detection and reducing breeding success, since stronger heats are associated with better fertility.

Pregnancy establishment and maintenance

Once bred, the goal is for the embryo to successfully develop and survive through gestation. Cows with diseases in the first few weeks after calving have lower chances of successful embryo development. In fact, their

embryos tend to be smaller and less likely to survive. These cows are 19% less likely to become pregnant compared to healthy cows. Other than being more difficult for them to get pregnant, they also have more chances to lose a pregnancy. These are the cows where a vet may detect a pregnancy during an initial check, but find the cow is no longer pregnant at a later recheck. Cows that have diseases early in lactation are twice as likely to lose a pregnancy compared to other cows.

Troubleshoot your transition program for better reproductive outcomes

The transition period is challenging for most cows, but with effective management, its impact can be significantly reduced. If your herd's reproductive performance – whether measured by pregnancy rate, conception rate, or pregnancy per artificial insemination – could be stronger, take a closer look at your transition cow management. Are there issues with feed intake, excessive body weight loss, or a high incidence of diseases? Optimizing the transition period pays off in the long run, as healthier cows are more fertile and productive. Investing in your transition program today means setting your herd up for reproductive success tomorrow.

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