



# Create Front-end Momentum

## *Veterinarian offers advice to develop successful replacement heifers.*

*Story & photos by*  
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Developing replacement heifers can be like riding a roller coaster. The biggest hill is almost always at the beginning. It takes two years of inputs and management to get to the adrenaline rush of calving and marketing.

Once the roller coaster crests that first hill, the forward momentum of the front cars pulls the rest of the cars along the track. Replacement heifers that breed and calve early drive herd profitability like the front cars of a roller coaster. The trick is to get more of those replacement heifers to be those beginning cars of the roller coaster.

Brad White, associate professor of production medicine at the Kansas State University College of Veterinary Medicine, offers three core goals for developing replacement heifers — create momentum, optimization and system flow. Momentum means a front-loaded breeding system to increase lifetime productivity. He suggests optimizing your return on investment through genetic

potential, and system flow means entire herd management.

### **Front-end loading**

Biology is tricky, he says, and only two-thirds of the time will a mating between a healthy bull and female result in a pregnancy. Because of this, he recommends targeting 65% of the herd to calve in the first 21 days, then 20% in the second 21 days and 10% in the third, leaving 5% open in a 65-day calving season.

“Managing the calving distribution and having more calves born early leads to positive momentum,” White says. He clarifies that heifers born earlier in the calving season cycle earlier and have a higher pregnancy rate earlier in subsequent calving seasons.

“Heifers calving early are more likely to calve early next year, making the calendar appear hereditary,” he adds.

The momentum carries into breeding season. Earlier-born heifers have more time to finish their postpartum interval before rebreeding. The average postpartum interval for mature cows is 50–60 days, White says, and females that

calve in the first 21-day period have 62–82 days to recover and start cycling before the next breeding season. However, females that calve in the second 21-day period have only 41–61 days until the next



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breeding season. Only the earliest-calving females in that second 21-day set might be ready for breeding. Females that calve in the third 21-day period have only 20–40 days until breeding and thus have basically no chance to rebreed at the beginning of the breeding season.

White recommends timing breeding season differently for cows and first-calf heifers. He recommends breeding heifers earlier because the postpartum anestrus period for mature cows is 50–60 days, while it averages 80–100 days among first-calf heifers. Breeding heifers earlier gives them that extra time to catch up after calving for the following breeding season.

“Earlier-calving females stay in the herd longer. The way to tell if you have a successful heifer program is if she has her second calf in the first 21 days of the calving season,” White says.

Why is calving in the first 21 days of the calving season so important? In addition to having more productive females in the herd longer, the benefits aren’t restricted to females. Sharing data from Rick Funston’s 13-year summary of progeny of

the University of Nebraska–Lincoln Gudmundsen Sandhills Laboratory herd, White says the steermates to those early-born heifers tended to have heavier weaning weights and had higher hot carcass weights.

How do you “front-load” the calving season? The first step is to determine your herd’s calving distribution, not just your pregnancy rate, because not all pregnancy rates are equal, White says. He recommends you figure out how many and which cows are in each 21-day period. Once you learn of your herd’s status, then you can create a strategy to move it forward.

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— *Brad White*

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White warns that there are no easy fixes to create a front-end-loaded calving season. Shifting the calving season later is an option, but only if it works with your marketing objectives and labor availability. Make selection decisions based on fertility. He suggests choosing replacement heifers that were born early in the season and bred early. The heifers that didn’t will go out through attrition and culling. Eventually, this will create forward momentum for the herd.

### **Optimize your herd**

Shifting the reproductive momentum in a herd also depends on the replacement rate. A static herd size is when the culling rate equals the replacement rate. He says the national average annual replacement rate is 15%, which keeps the herd age consistent. However, many factors affect that percentage, including the fixed value of heifers, keeping more heifers when feeder-cattle prices are low and fewer heifers when prices are high, and maintaining a static cost per cow in the herd.

Earlier-calving females last longer in the herd, he explains, and for good reason. The increased weaning weights of calves born earlier in the calving season for six years is equivalent to having an additional calf over the cow’s lifetime. He warns that not paying attention to the calving distribution could be leaving money on the table.

“Nobody sends a bill for inefficient production, so breeders don’t always change their practices,” he explains.

He grants that setting up the herd to produce strong replacement heifers doesn’t have to be an arduous process. Breeders don’t need the greatest records to have good replacement heifers, because group tags will work. Breeders would need to know when they were born and preferably who the sire was.

Weaning time is a great time to plan for the breeding season. He explains that weight, age and breed determine puberty factors. Weaning weight is the baseline from which to determine a breeding weight goal. He suggests heifers be bred when they reach 55%–65% of their mature body weight.



Avoid systematic problems like late calving momentum, poor nutrition and late timing of replacement heifer management and breeding, he concludes.




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**Left:** White says a successful heifer program means heifers have their second calf in the first 21 days of the calving season.