

Successful Replacement Development

Management for the long haul.

by *Jacques Fuselier, DVM, DACT, DABVP*

Replacement heifers are the future of your herd. Whether buying or raising your replacements, their success and contribution to the herd depends on a sound development program. Ultimately, the goal is to get replacement heifers ovulating earlier and contributing to the operation as healthy, productive brood cows sooner.

Reproduction is the most influential factor contributing to the profitability of a cow-calf producer.

Replacement heifers can be difficult to manage because they have greater nutritional and management needs, so blending them in and managing them like mature cows is a mistake.

Without more intensive and specific health and care protocols, heifers may not get the feed — especially if competing with mature cows — and attention needed to reach their genetic potential or reproductive maturity at the best time for your operation.

A heifer's longevity as a brood cow is often influenced by a successful first breeding season. It pays to work with your veterinarian and

consider appropriate vaccination, nutrition, parasite management and reproductive tools.

Vaccination

If purchasing replacement heifers, it's a good idea to test heifers before or on arrival for persistent bovine viral diarrhea (BVD) infection or to buy certified-free replacements. You should also have a record of the vaccines and health protocols provided up to the point of purchase.

In order to properly start priming the immune system, all calves should receive foundational calf vaccines and boosters as part of their weaning protocol, beginning around 60 to 90 days of age. Prior to AI or exposure to a bull, they

should receive another modified-live vaccine (MLV) to provide immunity toward pathogens that could cause loss of pregnancy.

Use a product proven effective against the common pathogens that cause respiratory disease, fetal infection and pregnancy loss and reproductive disease, such as

infectious bovine rhinotracheitis (IBR), BVD types 1 and 2, bovine respiratory syncytial virus (BRSV), parainfluenza 3 virus (PI₃), campylobacter fetus (vibrio) and leptospirosis.

Timing of vaccines is important, relative to breeding. Administer vaccines at least 30 days prior to breeding season to help minimize any negative vaccine effects on fertility or embryonic losses due to infectious reproductive diseases.

Nutrition

Getting calves off to a good start and gaining efficiently is an important component of a successful reproductive career. As mentioned, heifers should be fed separately from mature cows to get the proper nutrition they need without competition.

Feed replacement heifers a quality, well-balanced ration that supports the appropriate growth rate to reach puberty and sexual maturity in the right time frame. Too fast of growth and too much fat accumulation is not good for reproductive development. Overfed or over-conditioned heifers don't cycle well, are not as fertile and can have calving difficulties.

The typical growth rate goal for heifers is an average daily gain of .75 to 1.25 pounds. At the time of first breeding, you want a body condition score (BCS) of 6 and the heifer to be at least 60% to 65% of her mature body weight.

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Merck Animal Health

Sources:

¹Dobson R, Jackson R, Leveck B, Besier B et al. Guidelines for fecal egg count reduction tests (FECRT). World Association for the Advancement of Veterinary Parasitology (WAAVP) (2001) Proceedings: 23rd International Conference of the World.

²Leonardi C.E.P. et al. Prostaglandin F2a promotes ovulation in prepubertal heifers. *Theriogenology* 78 (2012) 1578-1582

Parasite management

Managing parasites is important for optimal immune function and reproductive health. Reducing the parasite load helps heifers get the nutrients they need to grow at the proper rate for reproductive development.

Research shows a parasite burden doesn't need to be large before it negatively affects pregnancy rates and calf health. Deworming before pregnancy or at the start of the breeding season has proven to result in healthier calves with better survival rates.

A good rule of thumb is to deworm heifers at the time of weaning or on arrival, and again prior to breeding them. Deworming cattle doesn't have to be labor intensive. Using feed and mineral forms — such as range cubes, dewormer blocks or mineral — require relatively little time and labor.

Working with your veterinarian to conduct a fecal egg count reduction test (FECRT) is a valuable tool to determine the effectiveness of your deworming practices. It is important that 20 samples are taken both at the time of treatment and 14 days post-treatment. A successful deworming must result in a 90% or greater reduction in parasite eggs in feces.¹

You can request a free FECRT kit from Merck Animal Health at merck-animal-health-usa.com/safe-guard/cattle/products/fecrt-kit.

External parasite control is also important and often overlooked. It has been shown that 200 horn flies on an animal reduces performance, including reproductive performance. A pour-on, broad-spectrum, long-lasting residual insecticide for control of lice and horn flies is a great option. Also, repellent ear tags, used alone or in conjunction with a pour-on insecticide, are another good option.

Enhancing reproductive performance

Tools like reproductive tract scoring can be performed six to eight weeks before the start of the heifer's first breeding season to determine: 1) the percentage of heifers actually cycling; 2) those close to having their first cycle; 3) those too immature to breed. This tool helps indicate the reproductive readiness of heifers.

After heifers reach the proper size and weight to enter the pubescent period and sexual maturity, a simple heat synchronization program can help them to come into heat.



The use of prostaglandins is another cost-effective way to promote ovulation in pubescent heifers. A study² comprised of non-cycling heifers looked at the effects of giving one group of heifers a shot of cloprostenol (a type of prostaglandin) prior to bull turnout. The second group was not given anything.

The group receiving cloprostenol had a significant increase in the number of heifers that were successfully bred. Prostaglandin brought those heifers into cyclicity sooner and allowed them to be bred at an earlier time in that breeding season.

Ideally, heifers should be bred four to six weeks prior to breeding the mature cowherd. If they don't settle at first breeding, they have an opportunity to conceive during the next cycle and still calve around the same time as the mature cows.

Heifers that do settle on their first cycle will calve early in the calving season, which provides them more time to recover before the start of the next breeding season. Heifers conceiving early will also have increased lifetime production.

Summary

A thorough and comprehensive developmental program for replacement heifers will ensure the success of your operation today and the stability of your herd for years to come. Work with your veterinarians and nutritionists to ensure you're building the right nutrition, vaccination, parasite management and reproductive health protocols for proper development. **BA**

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