Setting the Stage for Long-term Reproductive Health

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KEYWORDS

• Reproductive health • Heifer development • Disease prevention • Parasite control • Body condition score

KEY POINTS

- Replacement heifers are the future of the breeding herd and mismanagement can have long-term consequences.
- Veterinarians are key to long-term reproductive health in the breeding herd.
- Health events and parasitism can have negative impacts on heifer development programs.
- Body condition scoring at strategic times can increase the rebreeding success of first-calf heifers.

INTRODUCTION

Profitability of cow-calf production depends largely on reproductive performance. Successful cow-calf operations tend to have a large percentage of cows that wean a calf every year, whereas less successful operations struggle with reproductive performance.

Achieving reproductive success requires that producers manage all aspects of the breeding herd; however, heifer development may be the most important given that heifers are the future of the herd. Mistakes and setbacks in heifer development compound over time and have negative long-term consequences on productivity and profitability of cow-calf operations. Because of their expertise in animal health management, veterinarians are well positioned to help producers manage heifer development sucessfully.[1] This article addresses some of the areas veterinarians should be involved in to ensure the long-term health and productivity of replacements heifers.

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DISEASE PREVENTION

In order for a heifer to calve at approximately 24 months of age she needs to reach 60% to 65% of her mature body weight to become pubertal and she must do this before 15 months of age. In addition, the heifer must continue to grow while gestating and lactating, and then rebreed the following year in a timely manner. The veterinarian should be involved in every step of the way to ensure that heifers remain healthy so they can meet these challenges.

A logical place for the veterinarian to be involved in a heifer development program is in disease prevention, which is one of the most important aspects of heifer development because infectious diseases can have a major impact on growth and development as well as the reproductive efficiency of a herd.[2]

Efforts to control disease in replacement heifers should begin early in life. A disease event such as bovine respiratory disease in a young heifer can have long-term consequences and negatively affect growth, reproductive performance, and longevity.[3]

Biosecurity and biocontainment are integral parts of any disease control program[4] and no disease program can be effective without them. Biosecurity involves the precautionary measures taken by each operation to prevent the introduction of new diseases onto a farm, whereas biocontainment is the control of the spread of infectious agents that are already present on the farm.[5]

Designing effective biosecurity and biocontainment plans is a team effort and individuals playing a significant role in the operation, such as the veterinarian, owner, farm hands, and feed suppliers, should be asked to provide input. It is the responsibility of managers and veterinarians not only to develop the plan, but to ensure its implementation and to monitor its effectiveness.

Biosecurity plans should be developed within the framework of Hazard Analysis and Critical Control Points.[4,6] With this method there are 4 steps to apply[4]:

1. Hazard identification: identify potential infectious agents that can pose a threat
2. Exposure assessment: identify possible routes by which animals can be exposed to the infectious agents
3. Risk characterization: determine the level of exposure risk for each agent
4. Risk management: design, implement, and monitor biosecurity and biocontainment plans

A primary consideration in replacement heifer biosecurity is the source of the heifers. Some operations purchase heifers. Other operations ship their heifers elsewhere to have them developed and then bring them back to the farm to calve them out. In either case, the biosecurity plan needs to specifically address the disease risk associated with heifers not raised on the farm and how they will be handled once brought onto the operation. Because reproductive diseases most commonly enter a herd through importation of infected animals,[2] quarantine and possibly testing for certain diseases are warranted. It is just as important to know the health history of the location where the heifers originated.[2]

VACCINATION PROGRAM

The vaccination program is part of the biosecurity/biocontainment plan but is not a substitute for it. The replacement heifer vaccination program should begin early in life and the vaccines to be administered depend on the operation and its needs.

As a general rule, the vaccine program should be designed to prevent diseases early in life that can be life threatening or affect growth and performance. Some examples are clostridials and bovine respiratory disease. The program also needs to include