



Heifer Replacement Programs

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When raising replacement heifers, many management practices during rearing can impact the growth, production, and profitability of heifers when she enters and completes her first lactation. By tweaking a few aspects of the heifer replacement program, these pitfalls can be avoided and profitability could increase. Three aspects of heifer programs where pitfalls can be avoided are:

- Colostrum management of newborn calf
- Design of feeding area within heifer facilities or exercise area
- Age of breeding heifers

Colostrum Management

Dairy producers have known the importance of feeding colostrum for a long time. However, the quality, quantity, cleanliness, and timing of colostrum is critical for the best results. Calves need at least 4 quarts of high quality colostrum within 6 hours of birth. Colostrum quality can be measured by using either a colostrometer or a brix refractometer. High quality colostrum can also be frozen and saved to feed to other newborn calves since colostrum quality varies from cow to cow. Colostrum quality can vary depending on several factors, such as age of cow and length of the dry period. One way dairy producers can maximize colostrum quality is by harvesting the colostrum as soon after calving as possible because the amount of immunoglobulins in the colostrum decreases over time. Not pooling colostrum (taking colostrum from multiple fresh cows and feeding the mix to multiple calves) is also very important so the high-quality colostrum is not diluted with lower quality colostrum. Colostrum management is the first step in giving heifers the best possible start and avoiding pitfalls later in the heifer program.

Feed Bunk Management in Dairy Heifers

Feeding programs designed to maximize growth are ineffective if the heifer facility does not provide an accessible feed bunk. Naturally, as heifers grow these needs change. Several factors, such as neck rail height and throat height of feed troughs and waterers, are critical for various stages of growth. For example, in heifers between 5 and 8 months of age, the throat height should be set at 14 inches, while a heifer 9 to 12 month of age requires a throat height of 16 inches. As heifers grow, bunk space requirements also increase to allow the appropriate amount of space for all heifers to eat. It is recommended to have 12 inches per head for heifers aged 3 to 4 months, while heifers aged 16 to 25 months require 26 inches per head of available bunk space. Understocking is recommended in heifer facilities. Furthermore, keeping fresh feed in the feed bunk is imperative in maximizing growth in heifers. When wet, or moldy feeds are present in the feed bunk heifers are discouraged from eating.

Many producers choose to implement accelerated feeding programs for calves, which can be achieved by using automated calf feeders. However, without maintaining appropriate growth rates throughout rearing, the money spent during pre-weaning will have been in vain.

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Heifer Replacement Programs

Accelerated feeding programs utilize milk replacers with higher protein content, as opposed to the traditional 20% protein/20% fat. Furthermore, quantity of milk fed is increased to as much as 12 quarts per day to maximize growth rates. This capitalizes on the pre-weaned calf's efficiency of laying down muscle, allowing them to grow to their maximum potential and be more productive upon entering lactation, at optimally 22 to 24 months of age.

Breeding Heifers Earlier

One advantage of utilizing accelerated feeding programs is the ability to breed heifers to calve earlier. Traditionally, producers wanted to calve heifers in at 24 months of age, however, breeding is done based on percentage of mature weight (55% of mature weight) as opposed to age. With the rapid gains achieved by using an accelerated feeding program the desired weight (approximately 800lbs for Holsteins) for breeding is achieved sooner. Breeding as early as 14 months reduces the age of first calving by 1 to 1.5 months, resulting in getting returns (milk income) from heifers earlier than before.

Summary

Replacement heifers are the future of the dairy herd and should be raised to maximize the potential of the herd. Proper colostrum management is the first step in having a successful replacement program, as it is the source of immunity in newborn calves. Feed bunk design is necessary for a heifer to have access to clean feed and water, which will maintain growth rates started from using accelerated feeding programs pre-weaning. A culmination of these practices will allow heifers to reach the target breeding weight (approximately 800 lbs. for Holsteins) sooner, which allows for earlier breeding and calving dates for the first lactation, and earlier return on investment for producers.