

buying heifers. However, to determine this, producers need decision aides to know actual production costs (both cash and fixed) for a replacement heifer.

Potential Advantages of Buying Replacement Heifers

Free-up Resources for Alternative Uses

Buying replacement heifers eliminates the need for a group of weaned to two-year-old heifers that consume resources but produce no calves. Facility, pasture, and lot space, as well as feed consumed by growing heifers, might be used more productively by cows that will produce a calf. This would spread fixed costs over more productive units, thereby reducing costs per cow. In years of drought or other environmental extremes, freeing-up feed resources for productive units may allow producers to maintain herd size in the short-term.

Reduced Bull Power and Allowing Increased Emphasis on Non-calving related EPDs

Producers who are not expanding but purchase bred heifers from an external vendor may realize a lesser need for bulls over those that develop and breed their own yearlings. Moreover, a large emphasis is typically placed on birth weight and calving ease EPDs by producers purchasing bulls to mate to yearling heifers. Eliminating this group of females during the breeding season may allow producers to place a greater emphasis on growth or carcass-related traits in their bull selection criteria.

Expand Herd or Change Breeding Program in Less Time

Producers who may have sourced increased pasture ground or cost-effective feed resources may look to expand herd size more quickly than existing replacement numbers will allow. Alternatively, a new marketing avenue may be explored that necessitates development of a different sub-population of genetics. In either situation, sourcing heifers from an external breeding program may be the best viable option to meet the new demands in a timely manner.

May Be Able to Buy Genetically Superior Heifers

Producers may be able to purchase replacement heifers from someone who specializes in producing replacement heifers. Producers can often specify the breed cross or genetic profile of purebred and composite heifers purchased, as well as the breed and individual sire within that breed to which heifers are bred. In most instances, commercial developers utilize estrous synchronization in conjunction with artificial insemination, which should increase genetic merit of progeny and eliminate the potential for reproductive disease transmission. In addition, this practice often allows producers to source heifers that will have conceived over a condensed time frame, and thus experience a shorter calving window.

May Cost Less to Buy Than Raise

Raising heifers from weaning to breeding requires feed inputs, which may be more costly to producers than if they were provided by someone else who has cheaper feed resources. Further, if heifers are grown too slowly from weaning to breeding as a result of poor quality or limited feed resources, puberty can be delayed, conception rates reduced, calving season extended, and cost per pregnant heifer increased. Extended calving season, coupled with a large number of females calving late, reduces average calf age at weaning. The net result is reduced weaning weights and reduced gross value at time of sale.

Analyzing the Raise versus Buy Decision for Replacement Heifers

It is inappropriate to generalize about raising or buying heifers for beef cow replacement. Each producer has different available resources and goals. Only by analyzing the benefits and costs on a case-by-case basis can producers determine the most economical method to acquire replacements.

Partial Budget

An effective economic analysis is based on the availability of complete and accurate information and using appropriate decision analysis tools. The partial budget is a valuable tool for analyzing proposed adjustments within an operation. The partial

budget is organized into two categories — total added returns and total added costs. Total added returns include income-increasing items categorized as either added returns or reduced costs. Total added costs include income-reducing items categorized as either reduced returns or added costs. If total added returns exceed total added costs, the proposed adjustment will increase net returns. On the other hand, if total added costs exceed total added returns, the proposed adjustment will reduce net returns.

Two Ag Decision Maker Decision Tools have been developed to aid in decisions regarding raising or buying heifers for beef cow replacement. The first spreadsheet, *B1-73, Buying Heifers for Beef Cow Replacement*, considers the returns and costs that will change if replacement heifers are purchased rather than raised from within the herd. The second spreadsheet, *B1-73, Raising Heifers for Beef Cow Replacement*, considers the returns and costs that will change if replacement heifers are raised from within the herd rather than purchased. Economic effects are specified on a per-head basis over the period of time between the decision to retain or sell a heifer calf and when a purchased replacement heifer would arrive at the farm. While these two calculators are similar in design, they are geared towards two different producers: 1) a producer who typically develops his or her own heifers and is considering purchasing replacement females in a given year, and alternatively 2) a producer who typically purchases replacement females and is considering developing heifers in a given year.

Sensitivity Analysis

Cow-calf producers analyzing the profitability of buying versus raising replacements will want to base the analysis on the most likely assumptions during the future heifer development period. The resulting change in net returns may then be evaluated in relation to the risks associated with not being able to precisely predict the future. Variables that are difficult to accurately predict and yet are very important to the analysis outcome include the sale price of heifer calves, price of purchased replacement females, feed costs, and production performance of purchased replacement females relative to raised heifers.

Summary

Selecting the most economical source of replacement females may be one of the more important decisions confronting cow-calf producers and will likely influence future direction and growth within the beef industry. Whether or not to incorporate home-raised or purchased replacements into the herd can be a complex issue as each alternative has both advantages and disadvantages. Due to differences in enterprise goals and, perhaps most importantly, resource availability, each producer must make this decision independent of other local operations. When making a significant enterprise changing decision such as whether to raise or buy replacement females, consult with the team of experts you have assembled including your beef extension specialist, herd health veterinarian, and nutritionist.

... and justice for all

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Many materials can be made available in alternative formats for ADA clients. To file a complaint of discrimination, write USDA, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and November 30, 1914, in cooperation with the U.S. Department of Agriculture. Cathann A. Kress, director, Cooperative Extension Service, Iowa State University of Science and Technology, Ames, Iowa.