

## **COW-CALF PRODUCTION MANAGEMENT RECORDS AND HERD ANALYSIS**

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### **Abstract**

**In order for the production management oriented veterinarian to perform efficiently for beef producers, specific performance and financial information for each herd must be available. This information should be generated with thoughtfully designed herd records that can be summarized and evaluated on a regular basis. Primary herd data should provide general information related to reproductive efficiency, nutritional status, genetic performance, morbidity, mortality, and financial performance. The information starts with an accurate periodic herd inventory of the animals and moves first toward gross measures of herd productivity and with time into specific measures of productivity. Overall costs can be collected and the combined information can be further examined on an enterprise basis, such as return per beef cow unit. Finally, the level of herd productivity and the associated costs of production are evaluated relative to the producer's goals. Herd specific areas that reveal a need for management intervention are identified and changes to correct deficiencies can be initiated. This may require additional detailed data collection in the area of concern in combination with continuous monitoring to evaluate progress. On some operations, productivity may be at acceptable levels but the associated expenditures may indicate an opportunity to reduce costs and monitoring productivity is again essential to determine possible decreases in productivity that may result due to reduced input costs.**

Herd records for the purpose of analyzing performance information in beef cattle herds have been utilized for many years but the ability to store and rapidly summarize herd information on the ranch for making business and management decisions has been significantly improved with the development of personal computers. The type and amount of data collected often varies significantly between producer's herds depending on such factors as ease of collection and its perceived usefulness in decision making. Seed stock herds usually collect a number of production measures that may be utilized to predict future genetic performance and maintain individual pedigree information for breeding stock. Most commercial beef herds maintain inventories of the various classes of cattle but do not necessarily maintain individual animal identification. Management procedures have evolved that permit the identification and culling of poor performers without unique animal identification but the recent development of marketing alliances, source verification, and tight economic constraints combined with advancing computer technology has encouraged more beef producers to pursue the benefits of information management on an individual level. Increased industry cooperation also permits better information transfer and performance feedback to producers through the entire production and marketing chain.

### **Monitoring and Managing Animal Performance**

One of the more interesting and important aspects of beef production is measuring and monitoring the growth and performance of individuals and groups of animals from breeding through calving, growing, finishing, and relating this information to the final product. Since the production cycle in the breeding herd is spread out over an entire year it is more difficult to monitor production over time without a good record system. It is also increasingly important to track the performance of calves after leaving the cow herd in order to confirm post-weaning performance whether for retained ownership, placing calves in one of the vertical coordination programs, or simply insuring product quality.

In the cowherd, changes in reproductive efficiency are critical. The devastating effects upon overall reproduction can best be determined by knowing the most encompassing measures of herd reproductive efficiency, pounds of calf weaned per cow exposed and the associated unit cost of production. Although

some important measures are relatively simple to collect such as pregnancy rate, they fail to provide the detailed information necessary to define the reason or causative factors for failure or success. It is difficult as well as risky to make management changes without knowing performance parameters. For example, recording body condition scores only once may be somewhat useful but the information does not reflect nutritional status at breeding, calving, or other critical times of the year. Recording the ages of cows, their postpartum interval, or yearly calving interval along with condition scores at important intervals however, permits monitoring the feeding program throughout the year and avoiding problems that may adversely affect reproduction.

Recording and monitoring periodic weights for the herd permits the detection of numerous disease and management events that can adversely affect growth. Information regarding the immune incompetence of calves and their subsequent health events has demonstrated reduced performance in weight gain. A similar relationship was found in calves where lung lesions seen at slaughter were associated with reduced feedlot gain. Attempts to confirm the direct effect of disease upon performance is difficult, especially in mild or subclinical cases and monitoring animal performance to document losses only when the occurrence of disease is known, will likely fail.

An example of utilizing existing data to determine performance and economic outcome was shown in a pen of mixed yearling steers and heifers that were sent to a feedlot following grazing. The negative effect of advanced pregnancy in feedlot heifers is one area where wise management practices can return excellent dividends. In this case, the cattle were gathered on a large range operation and the culled yearling replacement heifers were placed in the pen with non-pregnant heifers and a few steers. Of the 101 head, there were 26 steers and 75 heifers. When pregnancy tested at the ranch about 40% of the heifers were pregnant, ranging from 60 to 140 days of gestation. They were treated to eliminate pregnancy at the ranch. Approximately three weeks later, while at the feedlot, the heifers were rechecked for pregnancy to determine the results of the first prostaglandin treatment. Eighteen pregnant heifers had failed to abort, ranging in gestation from approximately 120 to 160 days. These heifers were treated a second time with prostaglandin. After being on feed for 135 days, the first lot of heifers processed had carcass dressing percentages of 63.15% and none were pregnant at slaughter. The remaining heifers were processed shortly afterward and had carcass dressing percentages of 60.58% and 12 were determined to be in advanced pregnancy. This difference of 2.57% in dressing percentage for 51,650 pounds of live weight in this group that was attributed to pregnancy amounted to a loss of 1327 pounds in dressed hot carcass weight. At the then current average price of \$68.39/cwt live weight, this resulted in a total cash loss of \$907.53, amounting to 30 pounds (-\$20.62) per head for the group affected or 121 pounds (-85.50) for each pregnant heifer. Determining this economic loss resulted in a number of management changes to avoid future problems with pregnancy. If good records were not available, this knowledge would be lost.

The value of a carefully managed calving program monitored by veterinarians is another potential benefit of good record systems. Recording the time of first nursing and monitoring immunoglobulin absorption in newborn calves can provide documentation to support the importance of good management and be of great benefit in herds where perinatal and neonatal losses can be reduced. The overwhelming amount of evidence documenting the importance of passive immunity at an early age leaves little room for doubt about the benefits and still, morbidity and mortality in calves that could have been prevented is repeatedly observed. In beef herds where profit is important, the peri-natal period is the ideal time to concentrate management efforts. Calf death loss in herds has a devastating effect upon net income since nearly all yearly expenditures are sunk by calving time with a reduced source of income from calf sales.

Production management oriented veterinarians have a tremendous challenge and opportunity to work with beef producers and evaluate each phase of production and marketing. An unbiased approach should first permit the elimination of unnecessary vaccinations, treatments, or procedures that do not have a tangible benefit. Other critical areas of concern are nutritional supplementation programs that can be enhanced or in some cases eliminated. Finally, longer term management decisions related to genetic selection, pasture and forage programs, calving, weaning, breeding management, and marketing can be evaluated. When a change is implemented, it is important to keep the records necessary to document the related changes in productivity and the associated expenses.

### Economic and financial relationships

During the past decade, the use of the Standard Performance Analysis (SPA) has improved the knowledge and importance of utilizing production and financial information for evaluating profitability and defining areas where deficiencies may exist (1). The CowCalf5 Herd Record and Analysis System (2) is a production record system designed to provide additional detailed information useful for making herd decisions. The challenge for current and future veterinarians is to provide cost effective services to beef cattle producers. Traditional problem solving approaches in the past, have often been effective in dealing with disease problems but often still result in significant loss of productivity in spite of correction. In today's livestock environment the primary mission of herd production management emphasizes prevention to avoid potential problems and loss of productivity while monitoring cost effective strategies. General herd health management plans have been employed without regard to each herd's current performance, problems, or financial objectives. Many present day beef producers have survived difficult economic times and have become goal oriented. They expect ranch oriented, objective management recommendations by knowledgeable professionals.

### References

1 McGrann J, *National Cattlemen's Beef Association Standardized Performance Analysis; Guidelines for Production and Financial Performance Analysis for the Cow-Calf Producers*. Texas Agricultural Extension Service, Texas A&M University.

2 *CowCalf5 Herd Record and Analysis System*, Great Plains Veterinary Educational Center, University of Nebraska.