

Beef Management Practices in the United States

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The beef cattle industry continues to be a significant component of American agriculture, and is made up of over 900,000 producers¹. In fact, beef comprises about 25 percent of the value of all farm marketings. Beef cattle are able to utilize feedstuffs that cannot be used by swine or poultry.

On a life cycle basis, 80-85 percent of the nutrient base for beef cattle is contributed by forage feed resources. About 46 percent of the total US land base is grazed by livestock; much of this land is not suitable for cultivation because of lack of rainfall, shallow topsoil, slope or erosion hazards. Cattle are also able to utilize by-products of the human food industry and other agricultural enterprises, such as cottonseed hulls, rice hulls, beet tops, potato waste, etc.

Steers and heifers are fed in feedlots to produce high quality finished beef for the steak and roast market. They are fed high energy diets, primarily corn, during the finishing phase. Feeding cattle grain during the final finishing phase is actually more efficient than it first appears. For example, if a steer weighs 800 pounds at feedlot entry and gains 400 pounds during the feeding period, it will weigh 1200 pounds when finished. Assuming a feed to gain ratio of 6:1 (dry matter basis), the steer will consume 2,400 pounds of feedlot ration to gain 400 pounds. On a live-weight, finished basis, the net feed efficiency, or feed to gain ratio, is 2:1 on a live-weight basis (2,400 lbs. of ration divided by 1,200 lbs. of finished live-weight). This illustrates how a combination of forage and grain feedstuffs can be used to produce high quality, finished beef in an efficient manner.

Types of Beef Operations

There are slightly over 100 million beef cattle in the United States. Of these, over 35 million are cows.² The beef cattle industry is divided into three sectors: cow-calf, stocker, and feedlot. Cow-calf and stocker operations utilize the vast supply of available forages while cattle in feedlots are fed mostly grain during the finishing period.

Most cow-calf operations calve in the spring and wean their calves in the fall. In most regions, this allows the cow to utilize forages at their peak quality while she is lactating. In some areas,

fall calving is common, primarily in areas with longer forage growing seasons or where winter forage, such as winterwheat or rye can be produced.

On the average, calves are weaned at 215 days of age; steers weigh an average 529 pounds and heifers weigh 494 pounds at weaning. Six percent of farms and ranches wean calves with an average weaning weight less than 400 pounds, while nearly 25 percent of operations wean bull and steer calves averaging over 600 pounds.¹

At weaning, calves are either retained by the owner for post-weaning growing programs or they are sold. In 1996, 85 percent of farms and ranches (68 percent of steers) sold their weaned steers through livestock auctions while 10 percent sold them through direct-private treaty (18 percent of steers). Weaned stocker and feeder heifers were sold in a similar manner.¹

Lighter weight steers and heifers frequently go to a stocker operation or a growing yard prior to going to a feedlot. This systems takes advantage of the low cost of gain when forages and roughages are utilized for growth. Many calves with heavy weaning weights (over 600 lbs) do not go to a stocker operation or a growing yard, but rather go to a feedyard. Many recently weaned steers and heifers go to a preconditioning facility on their way to a stocker operation or a feedlot so that health related problems can be better managed.

Approximately 26 million head of cattle are fed in U.S. feedlots each year. Feeder steers and heifers are fed to a typical live finished weight of 1200 and 1100 pounds for steers and heifers, respectively. Typically, heifers will gain from 3.25 to 3.50 pounds per day while steers will gain from 3.4 to 4.0 pounds daily. Most finished feeder cattle are sold direct to the packers.

Production Challenges

There are many production challenges facing cattlemen, such as weather, predators, economic pressures, nutrition and disease. All of these are very important to the cattlemen, but I will focus most of my discussion on diseases because treatment of disease is one of the reasons we are having this conference.

Of the infectious diseases of beef cattle, those involving the respiratory and digestive systems predominate. In the neonatal period, digestive diseases are most common while respiratory

diseases are most important overall in terms of morbidity and mortality. The USDA estimates that in 1995, 361,700 head of beef cattle died of digestive disease while 493,000 died of respiratory disease.² It is not possible to quantitate the impact of less common infectious diseases as they are lumped together under the “other” category.

Feed grade antimicrobials have many useful purposes in beef cattle production. Ionophores are commonly used in stocker and feeder cattle. At the levels approved by FDA, they serve as effective coccidiostats, moderate the rumen environment to reduce non-infectious deaths due to digestive disorders and also improve feed efficiency. Tylosin in feedlot diets is highly effective in reducing liver abscesses; the liver abscess rate is commonly over 30 percent when tylosin is not used while its usage results in abscess rates of 11-13 percent in beef cattle.³

In areas where anaplasmosis is endemic, chlortetracycline is fed to beef cows during the vector season to prevent clinical and sub-clinical anaplasmosis. Chlortetracycline is often fed to stocker cattle on grass ranges to reduce the incidence of footrot, which can affect as many as 10-12 percent of the cattle during the grazing season if no control program is in place.

Prudent usage of antimicrobials is necessary to manage diseases in the nation's beef herd. The overall goal of the beef industry is to prevent disease, but just as in human medicine, those of us who practice veterinary medicine are called upon daily to treat clinical cases. Effective antibiotics are necessary to do this.

Beef Quality Assurance and Beef Safety Programs

The beef industry is committed to producing the safest and highest quality food possible. To this end, the National Cattlemen's Beef Association (NCBA) has had an ongoing Beef Quality Assurance (BQA) program since the late 1980's. The program is guided by the Beef Quality Assurance Advisory Board, the Beef Safety Committee and interacts with the state affiliates, many of which have established beef safety and quality programs at the “grass roots” level. In the fall of 1997, the Beef Industry Food Safety Council was formed. The Council is composed of experts from all facets of the beef industry to address beef safety issues with the “farm to fork” approach.

Many alliances between producers, feedlots and packers now exist, and the number of alliances continues to expand. Alliances are very likely to improve communications between the producer and feedlots, and feedback will result in improved preventive medicine programs. Healthier cattle should help us to produce higher quality, safer beef with less antibiotic usage.

Summary

The beef cattle business in the United States is a modern, progressive industry. Like any industry, there are challenges facing beef cattle producers each and every day. Beef cattle producers have accepted these challenges and are committed to producing the safest, highest quality product possible.

References

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2. USDA, APHIS and NASS. Cattle and Calves Death Loss 1995. March 1997.
3. Laudert S. Elanco Animal Health. Personal Communication. 1996.