The Kentucky Beef Book

Authors
(in alphabetical order)

Jim Akers..................Extension Associate, Animal and Food Sciences
Georginna Anderson.........Student, Animal and Food Sciences
Dr. Les Anderson...........Associate Extension Professor, Animal and Food Sciences
Dr. José Bicudo..............Former Assistant Extension Professor, Biosystems and Agricultural Engineering
Dr. Darrh Bullock..........Extension Professor, Animal and Food Sciences
Dr. Roy Burris..............Extension Professor, Animal and Food Sciences, Princeton
Dr. Jimmy Henning..........Assistant Director for Agriculture and Natural Resources, Cooperative Extension Service
Dr. Steve Isaacs.............Extension Professor, Agricultural Economics
Dr. John T. Johns..........Extension Professor, Animal and Food Sciences
Dr. Garry Lacefield........Extension Professor, Plant and Soil Sciences, Princeton
Kevin Laurent................Extension Associate, Animal and Food Sciences, Princeton
Dr. Jack McAllister.........Extension Professor, Animal and Food Sciences
Dr. Lee Meyer..............Extension Professor, Agricultural Economics
Dr. William Benjy Mikel.....Former Extension Professor, Animal and Food Sciences
Dr. Patricia Scharko........Associate Professor, Extension Ruminant Veterinarian, Veterinary Science
Alison Smith................Former Extension Associate, Animal and Food Sciences
Dr. S. Ray Smith..........Associate Extension Professor, Plant and Soil Sciences
Dr. Larry Turner, PE........Director of the Cooperative Extension Service
Laurentia van Rensburg.......Extension Associate, Animal and Food Sciences
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*Mention of specific commercial products is for educational purposes only and not considered an endorsement of the product. Product names are mentioned to report factually on available data and to provide specific information.*
Our Beef Cattle History

Kentucky has a rich agricultural history, and beef cattle have been a major part of that history for more than two centuries. In the early 1780s, settlers who poured across the Appalachian Mountains brought cattle with them. These early cattle, which were also used for milk and draft, were mostly "mongrels," predominantly of Devon ("Rubies") or Spanish blood. As early as 1784, cattle also were being driven from the south branch of the Potomac to the glades of what is now Kentucky for summer pasture.

Many of the early cattle were kept near cabins and ate "switch cane," which grew wild among large trees. However, in 1792, Kentuckian Thomas Goff, on a trip to Virginia, saw his horse eating a strange grass (bluegrass) in the Powell Valley, and he brought some seed back to Kentucky. Bluegrass, along with corn, later became the base of the cattle feeding program. Cattlemen wintered their two-year-old steers on shocked corn, put them on bluegrass in the spring and summer, then fed them corn until February when the drive to market began. Cattle were driven to markets in the East, generally at the speed of about seven miles a day.

In 1785, a family named Patton migrated to Kentucky (near Winchester) and brought a bull exported from England and some grade heifers. Later they brought into Kentucky a "full-blooded" (possibly Shorthorn) bull and cow—Mars and Venus. Through several years of selective breeding, they developed the "Patton Stock," which became the foundation of some early Kentucky breeding stock.

Shorthorn cattle were first imported into Virginia in 1783, and purebred Shorthorn cattle soon appeared in Kentucky. Their popularity increased rapidly, and Kentucky breeders established the Shorthorn herd book and record association—the first in the United States.

Famous statesman and politician Henry Clay is credited with bringing the first Herefords to Kentucky in 1817. However, their popularity did not increase like the Shorthorns. That same year, Lewis Sanders of Bourbon County imported four pairs of Shorthorns, one pair of Longhorns, and one pair of Herefords. These Shorthorn cattle, which had numerous descendants, became known as the "seventeens" in reference to the year 1817.

By 1837, the Shorthorns were immensely popular. Many producers feared they would become inbred and fail to pass on desirable traits. They were crossed with other breeds, especially Longhorns from the South. Longhorns were later discriminated against by packers, causing a good deal of panic among Kentucky breeders who had crossed their cattle with Longhorns.

About 1888, the Shorthorn business collapsed to a great degree, and Herefords swept to popularity, not necessarily because of superior hardness but because "Shorthorn breeders had been selling pedigrees instead of individuals." (1)

As early as 1840, Kentuckians were aware of the state's potential to produce forage. Cattlemen in the Barrens (between the Green and Cumberland rivers) stated, "Grass can be the only basis for our cattle industry. We can never be a stock-raising country to any extent until we change our system of farming. We must grass our lands and plow less." (1)

By the 1850s, a system of marketing that centered on "court day" had evolved in Kentucky. Each county court usually held session one day a month at the county seat. Kentuckians came to town to conduct legal business, buy supplies, and sell their products, including cattle. Cattle were moved into town, along with farm equipment, to be traded on or auctioned off. One of the best known court days occurred in Paris, where as much as $250,000 worth of cattle, horses, and mules changed hands in a single day.

Cattle numbers steadily increased in Kentucky's Bluegrass area. Bourbon, Clark, Madison, Fayette, and Shelby counties each had 10,000 to 12,000 head of cattle during the 1840s and 1850s.

The first comprehensive cattle inventory was taken in Kentucky in 1920 (see Table 1-1). At that time, there were only 65,000 beef cows in the state, but there were 161,000 steers over one year old and 197,000 other calves (not kept for milk). The 1942 inventory recorded the first big increase in beef cows (105,000 head), while steers over one year old had decreased since 1920.

It is likely no coincidence that the buildup of beef cow numbers in the 1940s occurred along with the introduction of Kentucky 31 tall fescue. This new grass grew anywhere, prevented erosion, and could be used to support the growing cow herd.

As Kentucky moved into a grassland system of cattle production, emphasis changed from the grazing and feeding of mature steers to a cow-calf system of production. Corn Belt cattle feeders turned to

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Table 1-1. Kentucky cattle inventory for selected years (000 head).

<table>
<thead>
<tr>
<th>Year</th>
<th>Beef Cows</th>
<th>Milk Cows</th>
<th>Steers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920</td>
<td>65</td>
<td>455</td>
<td>161</td>
</tr>
<tr>
<td>1930</td>
<td>45</td>
<td>498</td>
<td>98</td>
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<tr>
<td>1940</td>
<td>80</td>
<td>555</td>
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<tr>
<td>1950</td>
<td>187</td>
<td>661</td>
<td>149</td>
</tr>
<tr>
<td>1960</td>
<td>515</td>
<td>561</td>
<td>197</td>
</tr>
<tr>
<td>1970</td>
<td>1,055²</td>
<td>279</td>
<td>230</td>
</tr>
<tr>
<td>1980</td>
<td>1,106</td>
<td>244</td>
<td>221</td>
</tr>
<tr>
<td>1990</td>
<td>1,040</td>
<td>210</td>
<td>180</td>
</tr>
<tr>
<td>2002</td>
<td>1,120</td>
<td>120</td>
<td>220</td>
</tr>
</tbody>
</table>

¹ Refers to steers over one year of age or, in later years, steers over 500 pounds.
² Beef cow numbers actually peaked in 1975 at 1,429,000.
the South as a major supplier of feeder cattle. Kentucky, Tennessee, and Virginia provided the largest numbers of these calves.

During the 1950s, the production of feeder calves increased as farmers realized beef cow herds made efficient use of available pasture land. However, many nondescript cows scattered across the state were not yielding quality feeder calves. Dr. W. P. Garrigus of the University of Kentucky introduced the Kentucky Cow-Calf Plan, which suggested the use of these cows to produce baby beef. This widely adopted program emphasized the use of quality beef bulls and led to the upgrading of beef cattle from many "family milk cows." Kentucky beef cow numbers doubled in the 1950s and again in the 1960s. On January 1, 1970, the beef cow population numbered more than 1 million head. This increase in beef cow numbers was perhaps the most dynamic development in Kentucky agriculture during that period.

The physical appearance of beef cattle has also changed over time. Early British cattle, which were used mainly for draft and milk, were large-framed, late-maturing, and not "finished" until they were three or four years old. Producers attempted to reduce size and hasten maturity and ability to fatten earlier. This trend intensified from the mid-1930s to the mid-1950s, as smaller, earlier-maturing, and earlier-fattening cattle were selectively bred. By the late 1950s, this practice had been taken to extreme, and breeding stock were excessively small and fat.

In the mid-1960s, the beef cattle industry began to move toward cattle that could be grown to desirable slaughter weights without becoming too fat. The feedlot performance of Charolais crossbred steers in the 1960s created an awareness of the lean growth potential of the European breeds of cattle. In the late 1960s, breeders began selecting within their breeds for larger-framed, growthier, and leaner cattle. The use of other European breeds also increased at that time.

This intense selection for large-framed, lean cattle was also taken to extreme and caused concern because of carcass size, carcass grade, maintenance cost, and efficiency of resource utilization. Presently, selection emphasis is toward lean cattle of moderate frame with easy fleshing ability. Kentucky survived the "market crash" in 1974, and in recent years Kentucky has shown the largest increase in beef cow numbers in the United States, while other states generally have declined.

Today’s Kentucky Beef Industry

Kentucky presently has the twelfth largest cattle herd in the United States at 2.43 million head as of January 2003. Kentucky’s beef cow herd is the eighth largest in the United States (the largest east of the Mississippi River) with 1.12 million beef cows. According to recent data, beef cows are on 39,000 of Kentucky’s 89,000 farms. The economic impact of the production from these operations is significant. Sales of cattle and calves generated $648 million in cash receipts to Kentucky’s farmers during 1994, accounting for 20.1% of total farm cash receipts, second only to tobacco.

Kentucky beef producers generally have two important reasons for raising beef cattle on their farms: (1) the availability of land or roughage resources and (2) beef cattle requirements for less labor than other livestock enterprises (making the cow-calf enterprise complementary to off-farm employment). Enjoyment in raising cattle may also be an important reason. The typical Kentucky beef herd has about 25 cows (86% of all herds have fewer than 50 cows) and one bull, uses land not suitable for row crops, may be characterized as a "loosely managed operation," and may have no defined calving season. Practices known to improve beef productivity and efficiency have only recently begun to be widely adopted by Kentucky farmers.

Kentucky is ideally suited for cattle production. The main feed for cattle is a renewable resource Kentucky has in abundance—fodders. The majority of the state’s terrain favors cattle production over row crops. Kentucky farms cover 14 million acres, with approximately half of that occupied by forage grasses and legumes. Our natural resources and climate permit the growth of most cool-season and warm-season species. Water is readily available in all areas of the state, and we have a relatively long growing season.

A major percentage (83%) of the feed units for beef cattle comes from forages, and livestock and livestock products account for 51% of Kentucky’s agricultural cash receipts. Cash hay also accounts for 24% of the total crop value in the state. In addition, forages play a major role in soil conservation, seed production, and aesthetics.

Environmental Stewardship and the Cattle Industry

The main challenges farmers may face today include the need to produce quality food on a limited amount of land; the demand for a consistent, safe, and cheap product by consumers; and increasing public awareness related to the use of environmentally and economically sustainable methods for food production. These challenges usually involve adoption of technology and practices such as the sensible use of pesticides and animal medications; implementation of sound soil, water, and nutrient management strategies; responsible use of new technologies; and appreciation for the health and well-being of animals.

The world is probably better fed today than ever due to major technological and scientific advancements in agriculture. In fact, the use of new equipment and technology together with innovative management practices in the last 20 or 30 years has changed the way food is produced. As a result, concerns about the effects of agricultural chemicals, livestock manure, and biotechnology on the environment need to be addressed. Other concerns include depletion and degradation of resources such as water and soil. The effect of large-scale agriculture on the environment and on wildlife and wildlife habitat and its potential contribution to global warming are also issues of debate. Everyone is concerned with protecting the environment. Both rural and urban citizens are concerned about the impact of livestock and agriculture on their water, their health, and their quality of life.

Both federal and state governments have invested large amounts of money in recent years not only to research but also to promote and enhance sustainable agricultural practices. Most of these programs help farmers address issues such as soil conservation, erosion control, water quality, improved pesticide use, and improved manure handling, storage, and land application.
Large concentrations of animals in confined areas, such as wintering feeding sites or barns and feedlots, increase the potential problems related to the recycling of animal manure to improve soil fertility. Manure and other fertilizers help enrich the soil and most of the time make good ecological sense, but too much can cause environmental problems, such as pollution of both ground and surface waters. Increasingly, farmers are using tools such as Nutrient Management Planning (NMP) to help ensure that nutrients contained in both manure and commercial fertilizers are stored safely and applied to the land in the right amounts, using the proper methods and at the right times of the growing season. Such plans are becoming mandatory in some areas, together with other standards in manure management. In addition to nutrient management, a good steward of the land and environment should adopt several strategies to minimize water quality impact, especially where cattle have free access to surface water. Many producers currently manage their cow-calf operation using rotational grazing, alternative water supply, limited stream access, and geotextile and gravel pads to minimize mud issues in heavy traffic areas. The use of such practices significantly helps reduce environmental impacts and displays good stewardship of shared resources. Other benefits include increased productivity, improved working and living environment, sustainability of the business, and potential value-added marketing.

**Meeting Our Potential**

Kentucky’s forage base consists of cool-season grasses and legumes. Four grasses compose the vast majority of our forage land, with Kentucky 31 tall fescue occupying the largest number of acres (Figure 1-1). Red, ladino, and white clovers (Figure 1-2) are by far the dominant legumes found in Kentucky’s hay and pasture fields.

Two components of Kentucky’s beef industry most likely to have the greatest impact on the industry meeting its potential are increasing numbers and adding value to current production. Kentucky’s forage base can support a large number of cattle. As a renewable resource, forage can only be utilized by ruminant animals like cattle to bring an economic return to the state. However, this resource requires better and more efficient management to support potential beef numbers. If managed properly, Kentucky’s forage can produce feeder cattle more economically than that of other states, giving Kentucky producers an opportunity to replace diminishing tobacco revenue. The latest management techniques and practices to accomplish this task are discussed at length in this reference book.

Adding value to Kentucky beef calves can be accomplished in several ways. Increasing weaning weights, producing uniform calves of similar weights, improving marketing methods and information, and producing consumer-acceptable calves can all add value to Kentucky’s calves before they leave the farm. Each of these topics is discussed in detail in later sections of this book.

**The Kentucky Beef Book**

This reference book was written by specialists in beef nutrition, beef cattle breeding, beef reproduction, forages, veterinary science, and production economics. The goal is to help Kentucky’s beef producers realize greater profits from their beef enterprise regardless of the size of the operation or the expertise of the producer.

**Literature Cited**