15 Corn Marketing, Processing, and Utilization

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Corn (Zea mays L.), like other cereals, probably became established as a food crop in its region of origin, Central America, because it provided a storable form of food energy, could be planted and harvested periodi- cally in a predictable manner, and was easily improved by mass selection. These virtues led to corn's cultivation and use as the basic food crop throughout aboriginal America, and in the Colonial Period, when subsis- tence agriculture was predominant. Even today in areas of Central and South America, Central and South Africa, Thailand, Indonesia, and parts of China, where subsistence agriculture is the norm, corn is a basic food. However, many people in the developed parts of these areas still prefer corn-based food items.

In the USA during the 19th century, when the population of predominantly European origin was rapidly expanding, demand for refined wheat (Triticum aestivum L.) products and animal-derived products also grew rapidly. Corn-based foods gradually became supplementary dishes in the menu but more recently have made a comeback in the form of ready-to-eat breakfast foods, snacks, and Mexican-type dishes. Sweet corn continues to be an important vegetable food in the USA. On the other hand, corn's greater productivity, excellent palatability, and high nutritional content for animals resulted in replacement of wheat, barley (Hor- deum vulgare L.) and oat (Avena sativa L.) as the primary animal feed. An important reason for this shift was that yellow corn has become cheaper than wheat because of increasing knowledge of corn culture, especially in the fertile Central Prairie region.

The improvement of corn by breeding and use of fertilizers, herbicides, and insecticides has produced continuous increases in grain yield. This has resulted in an ever-increasing annual volume of corn produced in the USA (Table 15-1); yields have increased about 35% since 1976 and volume produced nearly doubled. Since, 1960 yields have doubled and production more than doubled (Leath and Hill, 1987). Farm and commercial elevator storage capacity is large and normally carries 10 to 20% of the prior year's crop into the next marketing year (Table 15-1).