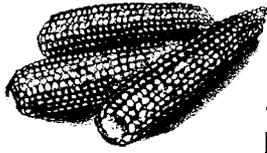

Harvesting and Handling



by D. D. Gull

Maturity and quality

High quality sweet corn should be of uniform size and color, contain fresh green husks, have kernels that are sweet, milky, plump, well-developed, and be free from insect injury, mechanical damage and decay; proper harvest maturity occurs when the silks have just turned brown and dry.

Sweet corn quality is highly perishable. Corn has a very high respiration rate and heat is a by-product of the respiratory process; deterioration rate is proportional to the respiration rate. Sugar content and flavor volatiles, which largely determine quality in corn, decrease rapidly at ordinary temperatures. Loss of sugar in the sugary or sugary enhanced types is about four times as rapid at 50°F as at 32°F. At 85°F, 60% of the sugars may be converted to starch in a single day as compared with only 6% at 32°F. Therefore, storage of these types for more than a few days results in serious deterioration and loss of tenderness and sweetness.

Sugary or sugary enhanced sweet corn cultivars contain up to 5% sugar at harvest; the newly developed high-sugar cultivars (shrunken-2) contain from 5 to 10% sugar. Conversion of sugar to starch is an enzymatic process and therefore temperature dependent. The high-sugar cultivars should greatly benefit the consumer because of the higher initial level and also the slower conversion to starch during marketing.

Harvesting practices

Once-over harvests, by hand or machine, are practiced by commercial growers. Harvested ears are either packed on a harvester aid or hauled to an

assembly area in the field, or packinghouse for grading and packing. Harvesting methods differ due to availability of suitable labor, equipment and destination of the corn.

With hand harvesting, there is more selection for marketable ears. Self-propelled packinghouses (mule trains) with conveyers for hand-harvested ears are used extensively in corn for the fresh market. Mechanical harvesters cut the portion of stalk containing the ears and then "strippers" remove the ear from the stalk. Recent improvements in harvesting machinery allow shank trimming and reduction in ear damage. Removal of long shanks and flags is important for fresh market sales to prevent water loss during transportation.

Kernel denting is an indication of loss of quality. Long shanks and flag leaves induce denting of the kernels by drawing moisture from the kernels. A loss of 2% moisture from sweet corn may result in objectionable kernel denting. Shanks and flag leaves should be trimmed and the ears maintained in a high humidity environment to reduce kernel denting.

Pack

The major container used in Florida is the wirebound crate containing 4 1/2 to 5 dozen ears with a net weight of about 42 pounds. To a lesser extent, corn is also packed in waxed fiberboard cartons having the equivalent volume as crates. Retailers of fresh market corn dislike a variation in number of ears per crate, because they purchase by the crate and sell by ear count. A uniform number of ears per crate is highly desirable.