

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Marketing Service
Fruit and Vegetable Programs
Processed Products Branch

A-493
October 1997

SUBJECT: Interpretative Guide for Frozen Supersweet Whole Kernel Corn to Determine: Tenderness and Maturity; and Flavor.

TO: All Inspectors

FILE UNDER: Grading Manual for Frozen Whole Kernel Corn

This memorandum is an interpretation of the grading instructions for frozen supersweet whole kernel corn. It will provide answers to the questions that have been raised about the evaluation of tenderness and maturity and flavor of supersweet corn.

The quality characteristics of varieties of whole kernel corn used by the freezing and canning industry differ significantly as a result of today's science and technology. Varietal types of supersweet (shrunk 2) provide a higher naturally occurring sweet flavor, and/or crisp texture. These varieties, when processed by freezing, may be slightly darker in color, and may have a slightly tough pericarp (kernel skin) than conventional sweet corn. These varieties **do not** go through the same development stages as conventional corn [milk, early cream, cream, and dough stages (determined by squeezing)].

Flavor is a separate quality factor in grading supersweet corn. The initial sweetness does not always relate to the maturity of supersweet corn. It is affected by the variety and processing method used. Year-to-year differences in growing conditions can also affect sweetness and flavor. However, the initial sweetness level increases as the corn matures, then the sweetness declines as the corn becomes Grade B.

The applicant must declare the lot to be sampled as "supersweet" frozen whole kernel corn prior to sampling or grading.

To evaluate tenderness and maturity of frozen supersweet whole kernel corn, apply the chew test only. Do not use the "squeeze" test as described in A-Memo 412. Apply the following criteria based on chewing:

Good tenderness and maturity in supersweet (shrunken 2), and genetically modified corn is crisp, corn that may have slightly tough pericarp, compact internal flesh, that is associated with plump or full kernels. There are three levels of quality within "good tenderness and maturity:" very tender, and crisp; tender, and crisp; and, moderately tender, and crisp.

Supersweet - Tenderness and Maturity - Grade A

Top (48 or 50 points)	Very tender, and crisp
Middle (47 points)	Tender, and crisp
Bottom (45 or 46 points)	Moderately tender, and crisp

Reasonably good tenderness and maturity in supersweet and genetically modified corn lacks tenderness and may be moderately dry. Kernels may have a reasonably tough pericarp and occasionally are dented. There are two levels of quality within "reasonably good tenderness and maturity:" not crisp, not moist; and, not crisp, moderately dry, and may include occasional dented kernels.

Supersweet Corn - Tenderness and Maturity - Grade B

Top (43 and 44 points)	not crisp, not moist
Bottom (40 - 42 points)	not crisp, moderately dry, and may include occasional dented kernels

Fair to almost tough in supersweet and genetically modified corn is dry, chewy corn, with fairly tough pericarp.

Supersweet Corn - Tenderness and Maturity - Grade C

Range (36 - 39 points)	Dry, chewy, pulpy, dented kernels
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