THE development and testing of sweet corn hybrids has been an integral part of the program of the Genetics Department at the Connecticut Agricultural Experiment Station for many years. One of the problems of such a sweet corn program has been the testing of quality or flavor. This problem has become increasingly important in recent years, and a large number of studies have appeared in the literature dealing with various aspects of sweet corn flavor.

Of the many factors that influence the flavor of sweet corn, some are easily defined and can be selected rather directly by the plant breeder. In this category, tenderness of pericarp has been investigated by Culpepper and Magoon (3), Doxtator (6), and Johnson and Hayes (10). Sweetness and consistency of kernel contents have been the subject of recent genetic research by Doty, et al. (1), Cameron (2), and Mangelsdorf (11). Methods of maintaining pure lines of sweet corn have been mentioned by Perry (12) while Haber (9) has pointed to the possibility of utilizing desirable qualities in dent, flint, flour, and waxy maize for the improvement of sweet corn inbreds. Gangstad and Snell (8) have demonstrated a combined plant breeding-statistical method of isolating the pericarp and endosperm effects on the tenderness phase of quality.

The general conclusions of this recent research seem to be that a great deal can be achieved in controlling and improving the inherent quality of the sweet corn of the future.

Soluble polysaccharides, tender pericarp and endosperm, desirable color, and high sugar content can be obtained rather quickly in a suitable breeding program, but there still remains the tenuous question of consumer preference. Once the supersugary, ultratender pericarp hybrids have been obtained, the problem of just which one has the highest taste appeal remains. Just how greatly will the flavor of the product appeal to the average buyer? At present, it seems that the “chewing” test, and “roasting ears at the edible stage” test are two possible methods of approaching this phase of quality. Another possible method is to give out many samples of two or more quality lines at various times during the growing season and require the recipients to return a classification card which ranks the tested complete sweet corn research program. A further method has been tried successfully at the Connecticut Station. During the summer of 1948, preliminary consumer preference taste tests were tried on nine selected sweet corn lines. The preliminary consumer preference taste tests were based on the initial studies of Dolphin (5), and the more extensive work of Bliss, Anderson, and Marland (1), as well as the balanced incomplete block design and analysis of Yates (13). This quality test is set up to test nine quality lines of corn in a specific maturity season. The nine varieties had silking dates of the Lincoln-Lee season, about 82 days after the Spancross season, or about 17 days after the one half silk date. It was thought that by extending the tests over a 4-day period a fairer maturity comparison was achieved. In this trial, each variety was allotted a low place simply because of an incorrect classification card, and it may be the subject of future investigation. Three individual trials were set up at the Mt. Carmel farm. Effects, if any, of xenia were not considered in this trial but may be the subject of future investigation.

During the morning of the day of each test, the prime ears were tagged, picked, packed in ice, and taken from the farm to the kitchen at the station. Here they were husked, wrapped in paper to prevent loss and mixing of the juices during storage, and boiled in water for 12 minutes. Next, sections of each sample were placed in uncovered cups with three to a set on numbered lettered cups were presented in 12 sets, each set as best, second, and poorest in regard to all-around kernel desirability, including flavor, eye appeal, and tenderness. Butter and salt were provided to tasters to prefer to determine the psychological difficulty of ranking nine varieties in order at one time, the varieties were divided in groups of three. Although each entry was allotted a low place simply because of an incorrect date of picking for its best quality.

Methods and Results

This quality test is set up to test nine quality lines of sweet corn for their flavor in a specific maturity season. The nine varieties had silking dates of the Lincoln-Lee season, about 82 days after the Spancross season, or about 17 days after the one half silk date. In this trial, each variety was allotted a low place simply because of an incorrect classification card, and it may be the subject of future investigation. Three individual trials were set up at the Mt. Carmel farm. Effects, if any, of xenia were not considered in this trial but may be the subject of future investigation. Three individual trials were set up at the Mt. Carmel farm. Effects, if any, of xenia were not considered in this trial but may be the subject of future investigation. Three individual trials were set up at the Mt. Carmel farm. Effects, if any, of xenia were not considered in this trial but may be the subject of future investigation.