STUDIES OF QUALITY IN CANNING CORN

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CANNED sweet corn must be of high quality to be satisfactory for human consumption. In estimating quality in canned corn there are several characteristics which are of importance, namely, tenderness of pericarp, sweetness, consistency of kernel contents, and flavor of product. These characteristics vary with the stage of development of the ear of corn and it is necessary, therefore, to determine with great care the picking date which will give the highest quality canned product. Certain varietal differences in quality at canning stage of development have been recognized in the past (3, 4), but few studies have been reported in which the objective was to determine differences in tenderness at canning stage between different varieties of sweet corn.

With the increasing use of whole grain style canned corn, tenderness of product becomes increasingly important. If there are differences in tenderness between different hybrids of sweet corn at a definite stage of development, such information would be of great importance. The plant breeder would then be in a position to develop hybrids which excel in this property. In this study the main purpose was to investigate the problem of tenderness in a series of Golden Bantam inbred lines, and hybrids between them, with the view of establishing suitable methods for determining tenderness, as well as to determine differences in tenderness which might exist between these cultures.

LITERATURE REVIEW

In studying quality of sweet corn for canning, one of the first problems encountered was that of finding a rapid and accurate method for determining differences in tenderness. Rosenbaum and Sando (19) used a modified Joly balance fitted with puncturing needle in determining resistance to puncture in tomatoes in an effort to correlate toughness with resistance to infection of *Macrosorium tomato* Cooke. Hawkins and Harvey (7), in studies of resistance of potato tubers to *Pythianum debaryanum* Hesse, and Hawkins and Sando (8) in studies of resistance to wounding in small fruits and cherries, used a similar puncturing device. Rudnick and Bakke (20) made use of this idea and devised a similar puncturing machine for a study of the resistance to puncture of the pericarp of sweet corn. In this study the corn pericarp was stripped from the kernels, glued to a cork which

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3Figures in parenthesis refer to "Literature Cited", p. 752.