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1. Location of wilted (wi) on chromosome 6.

Crosses were made between a series of translocation stocks in which waxy (wx) was used as a marker for the chromosomal interchanges and a wilted (wi) Wx stock. These $F_1$ plants were then selfed and the waxy kernels from the resulting progeny were planted.

Expected ratios (25%) of wilted were obtained with all translocations except T6-9b. Progenies involving T6-9b, which has break points on the short arm of chromosome 9 between the centromere and waxy (.37) and on the long arm of chromosome 6 near the Y locus (.10), gave 6% wilted plants. It is therefore apparent that wilted is located on chromosome 6 near the Y locus. Further testing will be carried out to establish the position of wilted in regard to other genes on chromosome 6.

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2. Possibility of a new allele at the $ga_1$ locus.

At the present date we have evidence of the presence of three alleles $Ga^s$, Ga and ga at the $ga_1$ locus on chromosome 4. Plants Ga/Ga are fertilized by ga/ga. The advantage of $Ga^s$ pollen over ga is almost 1 on $Ga^s$/ga silks. $Ga^s$ and Ga do not have an advantage over ga on ga/ga silks.

Nelson (1952), in studies of several popcorns, found a percentage of sugary kernels ranging from 13.9 to 15.5 in $F_2$ crosses of P51 (ga su/ga su) x the popcorns. In this experiment Schwartz D139 ($Ga^s$) was included. He concluded that there is a possibility of different alleles of the same type as $Ga^s$ in these popcorns.

The popcorns 845, 1001, 4524, 401, 4519, and 4541, the genetic stock Ga and Schwartz's D139 were used in this experiment. In order to have a common genetic background, they were backcrossed five times to the dent corn Hy. In each backcross generation a test for the presence of $Ga^s$ was made. The recovered plants were crossed onto P51 (ga su/ga su); these $F_1$'s were selfed and intercrossed in all possible combinations, in pairs reciprocally. The results of these selfs and crosses are in table 1.