

2. When do maize leaves appear to be wide?

In many cases "brachytic" inbreds of maize have unusually wide leaves—in excess of 5 inches. This appears to be a pleiotropic relationship since segregates of broad leafed brachytic x narrow leafed normals do not yield wide leafed normals.

The severe drought of 1962 severely stunted many inbreds in our disease nursery so that they had a pronounced brachytic appearance. Some stunted lines had unusually wide leaves—in excess of 4.5 inches. Selfed seed of six such cultures were selected for greenhouse increase. In the greenhouse two of these had narrow leaves, which seemed to indicate that leaf width was an environmental response. Four cultures continued to produce wide leaves. These were selfed or intercrossed as maturity permitted. Under irrigation in 1963, these inbreds and their intercrosses produced again unusually wide leaves—5 to 7 inches with 6 inch leaves (at ear level) very common. The hybrids are striking looking plants which are exceedingly attractive. They do not appear to roll or wilt more than ordinary corn under hot dry conditions. Breeders interested in silage corn are impressed.

The leaves of these plants are short as well as wide. Lack of long leafed inbreds prevents us at present from making crosses to determine if one can also have wide (in excess of 5 inches) long leafed (36 inches or more) plants.

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1. Cyclic hydroxamate content of maize seedlings II.

Segregation for the presence or absence of a cyclic hydroxamate or its 2-glucoside in maize seedlings (MNL 36:71-72, 37:110) is presently being scored using waxy-marked translocation stocks. The trait has been recovered from crosses of Pa54 and Pa423 with mutant selections from the Gehu flint in which the trait was first noted. Tolerance of the mutant to atrazine has been reported together with a pedigree of related Gehu material (Weeds 12:27-30, 1964). Of the 30 plant introductions evaluated as 0-1, 0-2 or 0-3 in the tabulation of tested seedlings in MNL 37, inbred material indicates potential segregation of a similar nature in three of the introductions. Selfed plants from P.I. 179573, 179576 or 195757 yielded seedling progeny consisting of both plus and 0 ("minus") individuals.

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