

this gene fl_2 is probably located on the short arm of chromosome IX. Further studies are foreseen in order to determine this location more precisely.

A. Cornu

UNIVERSITY OF TEXAS
Austin, Texas
Genetics Foundation

1. Substitution of a *Tripsacum* chromosome segment for a portion of the corn genome.

As a result of an interchange a segment from a *Tripsacum* chromosome was substituted for the distal half of the short arm of corn chromosome 2 in plants whose chromosomes were apparently otherwise unaltered corn chromosomes. Plants both heterozygous and homozygous for the substitution have been obtained. Genetic tests have indicated that the *Tripsacum* segment carries Lg_1 and $G1_2$, and tests are underway to determine whether a Ws_3 locus is also present. Cytological and genetic evidence seem to support the view that the *Tripsacum* segment has remained intact (or nearly so) as derived from *Tripsacum*.

Heterozygous plants were indistinguishable from normal corn in gross appearance, but homozygous plants were characteristically short and stocky with stiff leaves and very few tassel branches, and silks which were usually split for an appreciable distance back from the tip. Both heterozygous and homozygous plants differed significantly from normal corn of the same stocks (at the five percent level in t tests) in having narrower leaves and a tendency to be proterogynous. Homozygous plants differed from heterozygous and normal plants in that these homozygous plants were shorter (had fewer nodes), had fewer tassel branches, a smaller number of rows of ovules and a smaller number of ovules per row.

Pollen carrying the substitution appeared normal and functioned in fertilization in direct competition with pollen of normal constitution with a frequency of about 40 percent.

It appears that adequate substitutes may exist in a *Tripsacum* chromosome region for those loci essential to the normal development and reproduction of corn which are located in the distal half of its chromosome 2.

Marjorie P. Maguire