

it does seem that genetic complementation can occur; in the case of iojap/white deficient heterokaryons the deleted terminal portion of chromosome 9 is complemented, and the w_1 and w_2 genes can be complemented by w_3 . These findings open up the possible use of protoplast fusion studies in the dissection of gene expression and controlling gene-structural gene interactions in maize.

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1. Mutant "branched silkless" found in flint inbred P578.

As described by Kempton (1) in 1934, the character "branched silkless" in corn was first discovered by E. B. Brown of the Office of Corn Investigations, USDA. Subsequently, the same character was found in sweet corn received through A. E. Longley from Nova Scotia, Canada.

The appearance of the present case of the mutant character "branched silkless" was observed first in 1967-68 in a strain of inbred line P578 of flint corn. As far as we know, this mutant was not observed before in corn from Argentina (2 & 3). It is postulated that the character appeared in inbred P578 by simple Mendelian segregation on continued selfing in a supposedly uniform and homozygous inbred line, or by natural spontaneous mutation in its genetic constitution.

This character behaves as a recessive in crosses with normal plants or supposedly non-branched silkless plants, giving first generation plants which are all normal. So far, the studies on its genetic inheritance and allelism are not completed. Its principal genetic effect is similar to that already described by Kempton (1), in that there is a characteristic modification in ear branching, florets, glumes and suppression or non-development of silks, resulting consequently in female sterility. On the contrary, there is a duplication of spikelets and florets with normal development in the tassel, giving a thicker and larger tassel than in normal plants.

References:

1. Kempton, J. H. Heritable characters in maize XLVII. Branched silkless. Jour. Heredity 25: 29-32, 1934.
2. Andres, J. M. and Bascialli, P. C. Characters hereditarios asilados en maices cultivados en la Argentina. Univ. Bs As. Facultad. Agron. y Veter. Inst. Genetica, Tomo 2, Fasciculo 1, 1941, 26 p.
3. Rossi, J. C. Frecuencia de caracteres recesivos en poblaciones de maices colorados duros de la zona de Pergamino. IDIA Suplemento No. 3: 2-3, 1960.

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1. Cytoplasmic male sterility research: M_2 generation from streptomycin treatments.

Streptomycin was used in an attempt to induce cytoplasmic male sterility in maize (Briggs, 1973). In this research streptomycin was used in concentrations of .001, .005, .01, .05, .10, .150% and a control. Seeds of an inbred line of corn were germinated for 30 hours at 27°C; at the end of this time some radicles had emerged. Subsets of experiments were performed; in one set the germinated seeds were placed embryo down in Petri dishes on Kimpak that was saturated with the streptomycin solution. In the second set germinated seeds were completely submerged in flasks of the streptomycin solution. In another experiment dry seeds (ungerminated) were placed embryo down in Petri dishes on Kimpak that was saturated with the streptomycin solution. All these experiments were conducted for 24 hours at 25°C. Briggs (1973) can be consulted for further details on this research.

Plants from the streptomycin treated seeds were self-pollinated in the M_1 generation and good seed set was obtained from most plants in the treatments. The material was self-pollinated in order to eliminate any sterile plants that may have been in the population which could have arisen spontaneously or by seed mixtures. Seed from the