

The F_1 hybrid of the diploid species, T. maizar (FTG65-1237) and T. floridanum, in addition to having glabrous sheaths is highly pollen sterile and at meiosis in the microsporocytes there are varying numbers of paired and unpaired chromosomes which are irregularly distributed to the microspores.

These Tripsacum species hybrids are being grown for additional genetic tests and cytological studies at the Fairchild Tropical Garden in Miami, Florida along with an extensive live plant collection of the perennial relatives of corn.

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5. Irregular transmission of the Su^d marked chromosome from Tripsacum in an addition monosomic stock of corn.

The starchy-marked (Su^d) chromosome, derived from Tripsacum as an addition chromosome on corn, gave a wide range of transmission rates in reciprocal crosses made on 112 ears (rows 66-1029 to 1064) grown under somewhat adverse conditions in Florida in January 1966. Transmission through the female ranged from less than 1% to 77% with an average of 6%. Transmission through the male ranged from less than 1% to 85% with an average of 15%.

Whenever the male and female transmission of the Su^d chromosome differed by more than a few per cent, it was always the male transmission which was higher. Sudden large increases in the rate of male transmission of this extra chromosome do not appear to be inherited. The cross su gl, x 66-1038-3 Su^d gave 66% starchy kernels while the reciprocal cross with the same two plants gave only 11% starchy kernels. These wide differences between male and female transmission in reciprocal crosses disappeared in 16 selfed progeny ears (67-266, 267) with a range of 13.8% to 25.2% Su^d and an average of about 19% derived from both crosses. There is, however, a slightly higher rate of male transmission over female transmission which, under good pollinating conditions at least, does appear to be inherited (see next item).

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6. Consistent low female and high male transmission of the Su^d Tripsacum addition monosomic of corn.

Reserve seed of the 66-1038 stock which gave 11% Su^d female and 66% Su^d male transmission in Florida was grown in Massachusetts in 1967 and reciprocally crossed to the sugary background. In the cross with Su^d as the male parent, two sugary seed parents were used with one from the related su seed and the other from an unrelated su tester stock. The results follow: