

Resistance does not involve reduction of leafhopper oviposition. Rather, it appears to involve the suppression of viral development in relation to dosage of the rM allele.

James L. Brewbaker
Flaviano Aquilizan*

*Present address: College of Agriculture, Univ. of the Philippines, Los Banos.

UNIVERSITY OF ILLINOIS
Urbana, Illinois
Department of Agronomy

1. Female fertility of maize x *Tripsacum dactyloides* (4N) hybrids.

In last year's newsletter (38) results were reported on hybrids between certain maize translocation stocks and certain *Tripsacum dactyloides* plants collected in Illinois. All F₁ hybrids obtained were grown in the nursery and backcrossed to maize. Female fertility of some of the F₁ hybrid plants was greater than expected. The hybrid plants with exceptional female fertility all involved 4N *Tripsacums* as the male parents. Hybrids of this type have 10 corn and 36 *Tripsacum* chromosomes, and as a result of this high degree of chromosome imbalance a large percentage of female sterility should result.

The number of seeds set on these exceptional F₁ hybrid plants is presented in the following table:

	No. Plants	No. Seeds Set	Total No. Ovules	Mean % Set	Range in Percent High Low
1. T ₁ -6c x T.d. Horseshoe Lake E-11 (4N)	22	250	1466	17.05	48.31-0
2. T ₁ -6c x T.d. Horseshoe Lake E-10 (4N)	3	78	157	49.68	71.43-0
3. T ₁ -6c x T.d. Horseshoe Lake N-15 (4N)	8	118	706	16.71	83.33-0

For two of three hybrids the female fertility (as measured by number of seeds set) is not greatly different from the ten percent female fertility usually obtained from hybrids between 2N *Tripsacum* and maize. However, the third hybrid averaged 49.68% female fertility for three plants. In addition, the range in female fertility was large for each of the crosses. In number three one plant had 83.33 percent female fertility, but only ten seeds were obtained from twelve possible, which is a very small sample. However, one plant in hybrid number two had 71.23 percent female fertility. This plant produced 52 seeds out of a total possible of 73.

Individual rachises varied considerably in amount of female fertility. Three rachises out of 16 had 100 percent female fertility and 6 had more than 50 percent female fertility.

Farquharson (Am. J. Bot. 42-737) has reported the occurrence of facultative apomicts in *Tripsacum dactyloides*. Her results indicated that this type of apomixis was limited to 4N plants studied. The high degree of female fertility observed in these hybrid plants could have been the result of apomixis. This type of reproduction may have been transmitted from the *Tripsacum* parent to the hybrid. However, further analysis of the offspring is necessary before verification is possible.

R. J. Lambert

2. Aberrant segregation of a brittle-1 allele from teosinte.

In a program to evaluate strains of teosinte by backcrossing to maize, a brittle-1 allele was isolated from backcross-3 progeny selfed which contained Guerrero 258 as the teosinte parent. The test for allelism to brittle-1 produced progeny that were all brittle-1. Tests with other endosperm mutants were negative. Testcross data were 150 $Bt_1/-$:132 bt_1/bt_1 ($P = .5-.3$). However, a selfed ear, produced in 1963, from homozygous brittle seed gave a ratio of 105 $Bt_1/-$:103 bt_1/bt_1 . The possibility of contamination or misclassification of $Bt_1/-$ seed from this ear could not be ruled out. When brittle-1 seed from this ear was planted in 1964 and selfed, one ear again gave a definite 1:1 segregation ratio (44 $Bt_1/-$:40 bt_1/bt_1). A tentative explanation for this aberrant segregation is that the endosperm classes have the following phenotypes: