

Cross	No. of plants Res.	observed Sus.	Expected ratio	P value
(M166 x M189) F <sub>2</sub>	163	9	15:1	0.50-0.70
(M166 x M189) x Oh07K	413	144	3:1	0.50-0.70
(M166 x M185-1) F <sub>2</sub>	108	14	15:1	0.01-0.02
(M166 x M185-1) x Oh07K	408	148	3:1	0.30-0.50
(M166 x M212) F <sub>2</sub>	112	11	15:1	0.20-0.30
(M166 x M212) x Oh07K	352	144	3:1	0.02-0.05
(M166 x B.Y.Dent) F <sub>2</sub>	132	3	15:1	0.05-0.10
(M166 x B.Y.Dent) x Oh07K	432	141	3:1	0.80-0.90

These data indicate that the gene for rust resistance in M166 assort independently of genes at the Rp<sub>1</sub> locus and is at a different locus than the gene in M185-1. Work is in progress to determine the relationship of the genes in M185-1 and M166 to locus Rp<sub>3</sub>. Both of these genes cannot be at locus Rp<sub>3</sub>; therefore, at least one of these genes would be at a new locus.

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### 3. Reactions of certain corn relatives to Puccinia sorghi.

A number of corn relatives were tested for reaction to culture 901aba of Puccinia sorghi. Coix lacryma-jobi, Tripsacum lanceolatum, and 2 seedlings of T. dactyloides gave the chlorotic fleck reaction. Three other seedlings of T. dactyloides showed no symptoms.

Resistant and susceptible reactions similar to those of corn were expressed by annual teosinte (Euchlaena mexicana), but only chlorotic flecks were noted on perennial teosinte (E. perennis). Some progress has been made in transferring rust resistance from teosinte to corn. The high resistance of perennial teosinte (2n = 40) persisted after two backcrosses to tetraploid corn. A single dominant gene appeared to be involved. A lesser degree of resistance from annual teosinte (2n = 20) remained after two backcrosses to diploid corn.

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