

Table 1. Results of ratings of aphid reactions in the AA8sh2 population.

Entry	Generation	Total Rated	Observed Res.	Observed Susc.	Expected Ratio Res:Susc
Resistant 3660	P ₁	10	10	0	All resistant
Susceptible 3655	P ₂	10	0	10	All susceptible
3660 x 3655	F ₁	10	0	10	All susceptible
(3660x3655) x 3660	B ₁	20	9	11	1 : 1
(3660x3655) x 3655	B ₂	20	3	17	All susceptible
(3660x3655) selfed	F ₂	58	16	42	1: 3

This and other evidence has confirmed our previous report that the genetics of resistance to the corn leaf aphid in the AA8sh2 population is monogenic and recessive. In accordance with our previously designated symbol aph, the genotype for resistant line 3660 is aph/aph and that of the susceptible line 3655 is Aph/Aph.

Siew-Hoong Chang and James L. Brewbaker

Benzoxazolinones in teosinte and *Tripsacum*

The occurrence of the benzoxazolinones in corn is well known. Three known analogs, 2(3)-benzoxazolinone (BOA), 6-methoxy-2(3)-benzoxazolinone (MBOA) and 6,7-dimethoxy-2(3)-benzoxazolinone (dimethoxy-BOA), are present in corn. These compounds and their precursor hydroxamic acids, notably 2,4-hydroxy-7-methoxy-2H-1,4-benzoxazin-3(4H)-one (DIMBOA), have been reported as insect and disease resistance factors in corn and wheat.

Using the highly specific gas-liquid chromatography procedure for the detection of benzoxazolinones developed in our laboratory (Tang et al., *Phytochem.*, 1975), some analogs of this group of unique compounds were found in all three races of teosinte (*Zea mexicana* (Schrader) Kuntze) and three species of *Tripsacum* tested. Except in one case, only 0.1-0.2 gm fresh weight of shoots of 14- to 20-day-old seedlings were used in each determination; the mature leaves of *Tripsacum laxum* were assayed, as seedlings were not available. MBOA and dimethoxy-BOA were detected in the teosinte races from Balsas, Chalco and Jutiapa. However, BOA was not detected. MBOA was found in *Tripsacum dactyloides* (2N), *T. dactyloides* (4N), *T. floridanum* and *T. laxum*. A closer examination of *T. dactyloides* (2N) showed that all the three analogs, BOA, MBOA and dimethoxy-BOA, were present.

Based on the results of these samples, it appears that the benzoxazolinones are well distributed in teosinte and in the *Tripsacum* complexes. This finding strengthens past evidence of the close taxonomic relationships of corn, teosinte and *Tripsacum*. Studies of the distribution and concentration of the analogs in appropriate interspecific crosses may help further our understanding of the origins of corn.

Siew-Hoong Chang, James L. Brewbaker and Chung-Shih Tang