

erect plants for the hybrids was 81%, compared with 54% for the O.P. varieties. These data indicate the progress that has been made in corn genetics and corn breeding.

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Bacterial leaf blight of corn — Bacterial Leaf Blight caused by Pseudomonas alboprecipitans is on the increase in the South. Some of the inbred lines that had resistance or tolerance under conditions of natural infection in 1974 were GA 222, GA 69:223, GA 69:244, GA 69:218, Mo 18W, CI 90C, Mo 20W and Oh 513.

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Cytoplasmic-genotypic effects in maize inbreds — Different cytoplasm were incorporated into well-established inbred lines through several generations of backcrossing. Significant differences were obtained among sources of cytoplasm within the inbreds for such characteristics as germination, vigor, color (chlorophyll), leaf rolling, plant height, ear height, silking, tasseling and yield. Certain combinations of cytoplasm and genomes gave more desirable agronomic performances than others.

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A cytoplasmic effect on the occurrence of northern corn leaf blight — Seed with the genotype of the long-time maize inbred CI 21 (Athens) was prepared with the cytoplasm of inbreds GA 199, GT 112 and CI 21 (A) in separate backcross programs; thus, each lot of seed had the same genotype but a different cytoplasm.

The cytoplasm were classified in the field for reaction to Helminthosporium turcicum Pass. on a 1 - 5 rating scale. The results indicated a highly significant difference between the GA 199 and GT 112 cytoplasm. All cytoplasm were moderately susceptible, but the ranking in order of resistance was GA 199, CI 21 (A) and GT 112. The GA 199 cytoplasm with CI 21 (A) nuclear genes offered more resistance, resulting in a favorable cytoplasmic-genotypic interaction.

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Differential reaction of four corn cytoplasm to a herbicide — Four maize cytoplasm with the genotype of inbred GT 112 were compared for reaction to the pre-emerge herbicide butylate (S-ethyl di-isobutylthiocarbamate) applied at the rate of 3.5 kg/ha. Herbicidal injury was measured on 12-day-old seedlings. Differences were significant in three paired comparisons. GA 199 cytoplasm in the GT 112 genotype was more susceptible to injury than GA 172 and GT 112 cytoplasm.

The susceptibilities occurring here may be due to plasmon-sensitive effects. The tolerance in certain cytoplasm may be due to a favorable cytoplasmic-genotypic interaction and the cytoplasm's ability in the plant cells to absorb lesser amounts of the herbicide.

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