

with the deletion model since a slightly lower transmission through the female would be unexpected from a gametophytic mutation and the expected type of cross-sterility remains undiscovered.

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6. Electrophoresis of analogous enzymes in teosinte and maize-teosinte hybrids.

Six different races of teosinte (Chalco, Balsas, Guatemala, Huehuetenango, Nobogame and Central Plateau), a maize (Wilbur's flint) x teosinte hybrid and the parental maize line (seed of all these stocks was kindly supplied by Dr. H. G. Wilkes) were examined for analogous enzymes. Endosperms from dry seeds were extracted in 0.01 M sodium pyrophosphate and separated by disc electrophoresis. Esterases, peroxidases, alcohol dehydrogenase (ADH) and malate dehydrogenase (MDH) were investigated.

Esterase zymograms of the teosinte lines were not very different from those of maize (Wilbur's flint). Migration of the major esterase band relative to the front (Rf) was the same for teosinte and maize. The teosinte line Chalco showed a different esterase pattern from other races. Peroxidase zymograms of teosinte were different from maize. In teosinte race Guatemala, the major peroxidase band showed a different Rf value. MDH of teosinte and maize migrated to the same position. ADH activity could not be detected in the endosperm extracts from teosinte. The zymograms for the maize x teosinte hybrid were similar to the maize lines used as the female parent for all the enzymes considered. The limited electrophoretic data gathered so far suggest close structural homologies between teosinte and maize enzymes.

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7. Buoyant density in cesium chloride of DNAs of maize and teosinte.

DNAs from maize and teosinte (races Chalco, Balsas, and Guatemala) when banded in cesium chloride density-gradients yielded only a single peak in each case. Both ^{32}P -labelled maize DNA and ^3H -labelled teosinte