

DNA in each case banded in the same position indicating that overall base-composition of maize and the tested teosinte DNAs is the same.

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8. Basis of cytoplasmic male-sterility (Texas type).

We have made the following observations so far: (i) Two sectorially pollen-fertile plants arose in the male-sterile mitomycin-treated series; (ii) One of the two plants in further breeding tests indicated that the change had occurred at the cytoplasmic level; (iii) Mitomycin inhibits overall DNA synthesis (MNL 41:9-10); (iv) Combined treatment with colchicine and gamma rays yielded a progeny of plants half (5 out of 11) of which were pollen fertile; (v) These on further testing showed that the change had occurred at the cytoplasmic level, although there were two exceptions; (vi) Total DNAs extracted from the germs of male-sterile, maintainer, and restorer lines when banded in cesium chloride gradients yielded only a single peak. No satellite band was observed.

These observations have so far not provided any unique supporting evidence for the involvement of plasmids or episomes in male-sterility. In fact, these observations are compatible with another hypothesis, namely the mutation of a cytoplasmic DNA (plastid or mitochondrial).

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1. Inheritance of male-sterility in Llera III variety of maize.

Last year (MNL 42:12) a few male-sterile plants were reported from Llera III but it could not be determined then as to how this variety inherited male-sterility. In order to resolve this point, five randomly selected male-sterile plants (even numbered plants in Table 1) were sib-pollinated by five different randomly selected male-fertile plants (odd numbered plants in Table 1). The latter five plants were self pollinated also. The progenies of all the ten plants were grown during summer 1968