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1. Gibberellin-like substances from maize.

Initial acetone extracts from green shoots of maize show no evidence for gibberellin-like activity when applied to the seedlings of the mutants d₁, d₂, d₃, d₅, and an₁. However, fractions obtained from the chromatographic purification of these extracts have been found to be highly active in the gibberellin bioassay. There is evidence for at least two gibberellin-like substances from normal maize. These substances are highly active on the mutants d₂, d₃, d₅, and an₁; they are inactive on the mutant d₁. (Gibberellic acid and many gibberellin-like substances from flowering plants are active on all 5 of the dwarf mutants). This information provides direct evidence for the presence of native gibberellins in maize. These native gibberellins are probably one of the controlling factors in the growth of the maize plant.

Preliminary cross-feeding studies have been made with extracts from each of the five mutants, d₁, d₂, d₃, d₅, and an₁. Purified extracts from the green shoots of d₁ plants have been found to be inactive on d₁ seedlings, and highly active on the other 4 dwarf mutants. Apparently the mutant d₁ is making a gibberellin that it cannot use. Since the other 4 mutants respond to the d₁ extract, the data support the interpretation that the gene d₁ controls a terminal step in the sequence of reactions leading to a native gibberellin necessary for normal growth in maize.

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1. A comparison of male sterile single crosses and their fertile counterparts.

Yields of 15 male sterile, single crosses from Tx61Ms and Ky 27 ms sources, and their fertile counterparts were compared in a yield trial, using 2x10 hill plots in rows 3 feet apart and the plants spaced 3 feet in the rows.

Three sterile crosses yielded significantly more than their corresponding fertile forms. In most cases, however, there were no significant differences between the fertile and sterile forms, although the yields of the fertile crosses were always lower than those of their sterile counterparts.

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