

4. Inheritance studies on cut leaves.

Observations on single or double subterminal marginal leaf blade cut(s) in the first leaf and or subsequent leaves in certain races of corn are being studied for some clue as to the genetic behavior. Any information on this complex character and availability of seed materials will be highly welcomed.

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5. Adaptive agronomic corn research.

Several more experiments involving plant breeding, soil-plant relations and problems of pathological and entomological studies are in progress.

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1. Soil responses of the yellow-stripe maize mutants.

Inbred M14 yellow-stripe-1 (ys_1/ys_1) and Early Butler yellow-stripe-3 (ys_3/ys_3) were crossed twice to Pa54 and recovered as the homozygotes. Differences in response of ys_1/ys_1 and ys_3/ys_3 to foliar applications of 0.5% ferrous sulfate in water were largely eliminated following recovery. Other traits such as brown midrib and aleurone colors in the former and a segregating glossy in the latter were also eliminated. Both recovered mutants displayed a strong interveinal chlorosis when grown on Millville loam (pH 7.8), a calcareous soil, at various times of the year in a greenhouse or in a controlled environment chamber.

The recovered genotypes also responded similarly on Bladen soil (pH 4.6) by producing leaves that were entirely green and indistinguishable from those of similarly cultured Pa54. Complete greening on Bladen soil and similar responses to ferrous sulfate sprays indicate that the metabolic blocks in both mutants seem to reside in the iron uptake mechanism. This would appear to eliminate the possibility of a block in iron transport as was earlier suggested (MNL 36: 72, 1962).

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