

UNIVERSITY OF HAWAII  
Honolulu, Hawaii1. Leaf-fleck mutant in maize.

A leaf-fleck phenotype, first observed in 1968, has segregated in our stocks as a monogenic recessive mutant. The mutant appeared first in a  $\gamma$   $O_2$  stock of Tuxpeno origin and appears to be distinguishable from other reported leaf-flecking or blotching diseases or mutants by the rusty color and small size of the spots.

Leaf blades of the mutants are characterized by abundant punctate rusty-colored spots, 1-3 mm. in diameter, surrounded by a chlorotic halo usually less than 1 mm. wide. The spots are extremely abundant on mature leaves, overlapping and appearing to coalesce, often cutting the photosynthetic area by as much as 75%. Segregating seedlings could not be classified during 15 days growth in petri dishes. Newly emerging leaves show only minute chlorotic spots, which expand more or less in direct proportion to the expansion of the leaf blade. The rusty coloration appears comparatively late, after full expansion of the leaf blades, and is less apparent on leaf sheaths. Husks and glumes are apparently unaffected.

Mutant plants were fully fertile, although slightly reduced in stature, attaining about  $3/4$  of the dry weight of normal sibs. Studies by the University of Hawaii Plant Disease Clinic could reveal no pathogen associated with the lesions, nor was it mechanically transmissible. No aphids or leafhoppers were associated with appearance of lesions, as reported for the leaf-fleck disease described by Atanasoff (Phytopath. Zeitschr. 52:98, 56:25). Seedlings were grown for two generations and in 5 separate nurseries this year, following appearance of the initial segregants, and the kind of seed-transmission of a viral agent suggested by Atanasoff was entirely precluded by the data.

The mutant has been provisionally assigned the gene symbol,  $lf_1$ , and has been entered in crosses to translocation stocks to determine its chromosomal location.

Information and seedstocks of similar mutants are solicited.

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