

EAST AFRICAN AGRICULTURE AND FORESTRY RESEARCH ORGANIZATION
Kenya Colony, East Africa

1. Resistance to Puccinia polysora Underw.

Race EA.1 of P. polysora still remains the only race identified in the field in Kenya, Uganda and Tanganyika. Breeding of resistant maizes has been discontinued, and will be reopened only if races appear virulent to present stocks carrying genes Rpp₁ or Rpp₂.

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1. Pollen restoration system in Peruvian Coastal Flint maize.

The "Texas" (T) source of male sterility, represented by the single cross 203 MS x 61M, was crossed with the Peruvian Coastal Flint variety Amarillo La Molina in 1952. F₂ fertile plants were selfed, and pollen fertile plants from resulting segregating lines selfed to S₂, where selected pollen fertile plants were simultaneously selfed and crossed to tester male sterile plants. Genetic analysis was carried on 1958 data from 32 F₃ and F₄ families (10 S₂ lines, and 22 S₃ lines), and their respective testcrosses, yielding the following classification:

Restoration:	Complete	Partial			No	
Phenotypic Ratios* (Fertile:Sterile)	All:None	3:1	9:7	3:5 1:3	15:1	None:All
Gene action	---	1 pair	2 complementary pairs (epistasis)		2 dupli- cate pairs	---
No. of lines	11	11	4 2 6		4	0

*(Semi-fertile plants were pooled with the fertile group)

Chi-square tests conducted on phenotypic ratios gave good fits (P > 0.30) in the respective groups of F₃ or F₄ families, and their testcrosses, to the several ratios noted above.