

<u>Type of Ear</u>	<u>Frequency</u>	<u>Pale mosaic</u>	<u>Kernel Type</u>		<u>Lt. pale + dots</u>
			<u>Pale self</u>	<u>Wh.+ dots</u>	
<u>Planted Light Pale + Dots</u>					
Most of the kernels of the parental type	2% of 54 ears classified	0	0	24	169
Many of the kernels of the parental type	74% of 54 ears classified	1	28	102	144
		1:1 0	0	168	132
		8	1	172	45
		3:1 0	4	183	62
		0	0	58	200
		1:3 0	2	85	225
		0	8	8	49
		163	13	1	62
		174	0	0	60
		21	81	0	94
64	95	1			
Few kernels of the parental type	23% of 54 ears classified	212	26	1	0
		53	181	0	11
		46	96	0	30

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1. Studies among races of corn in Mexico.

In 1958 a research project was initiated having as its goal a more intensive study of crosses among the twenty-five well defined Mexican races of corn. As seed stocks for this project it was decided that it would be better to go back to the original area of collection for each race rather than attempting to use seed stocks available in the corn bank. This decision was reached because: 1) The original collections might have been changed by mixture or selection since some of them had been increased by hand pollinations in small plots as many as five different times; and 2) The actual cost of obtaining the seventy-five pound seed stock for each race would be much less by re-collection than by hand-pollinated increases. The collections which served as basis for the original race definitions were collected from 10 to 15 years ago. Even so, it was not difficult to find corns representative of each of the

twenty-five races by looking among the smaller farms in less progressive areas. The races of corn now being grown have apparently changed relatively little except in those areas in which the National Corn Commission has established corn seed production (hybrids and/or varieties). With the rapidly expanding net-work of good roads, the growth of the production program of the National Corn Commission, the growth of the Extensive Service plus the growing interest on the part of farmers themselves, a change in the corn race distribution will probably take place at a greatly accelerated pace. This change is already evident in areas where crop improvement programs have been initiated.

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## 2. Resistance to ear and tassel smut in Mexico.

Data from 1958 corn plantings in the Bajío region of west central Mexico show distinct differences of reaction among several hybrids and varieties of corn to the ear and tassel smut incited by the organism Sphacelotheca reiliana (Kuhn) Clinton.

Plantings of 12 varieties were made at 4 different planting dates. Highly significant differences were found among varieties and among dates of planting in reaction to the fungus. The most susceptible hybrids were those that included lines introduced from tropical corns. Of plantings made March 15, March 31, April 15, and May 1, the highest percentages of infection were obtained in the May 1 planting.

Commercial corn plantings in the area ranged from no infection to individual fields with 40% or more of the plants infected. Literature reports of the disease indicate it to be of minor importance, but experience in Mexico suggests the desirability of incorporating genetic resistance to the disease in corns for the Bajío region of the country.

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## 1. Relation of root rot and root type on yield and maturity of maize.

Inbred lines derived from two ears of Fulton's yellow dent have been shown to differ in the expression of root rot. The evaluation of the importance of root rot and other morphological characteristics was estimated from a series of multiple measurements involving the roots of corn