

2. Full-sib family selection for yield of ear corn in four populations.

A study was conducted in 1959 to compare the progress due to selection in four populations. The test included each cycle of selection (when available) of two varieties, Jarvis and Indian Chief, and two hybrid populations, (NC7 x CI21) F₂ and (NC34 x NC45) F₂. The results are given in Table 1 and show that selection seems to be more effective in the varieties than in the populations derived from crossing inbred lines. It is also apparent that the variety response is much closer to expectation than is the response of the hybrid populations. Since the test was conducted in only one location and year, the results are subject to errors due to genotype x environmental interaction. This material will be studied further over a wider range of environments, and results of additional cycles of selection will be included as they become available.

Table 1. Yield in pounds per plant for each cycle available for test.

Population	Cycle of Selection					Gain per cycle in percent of mean	
	0	1	2	3	4	observed	predicted
Jarvis	.396	.369	.460	.469	---	6.1	6.7
Indian Chief	.399	---	.458	---	---	7.4	5.5
(NC7 x CI21)F ₂	.362	---	.386	.400	.398	2.5	9.3
(NC34 x NC45)F ₂	.267	---	---	.279	---	1.5	11.5

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1. Investigations on induced polygenic mutability in maize.

The experiments which were briefly described in Maize Genetics Cooperation News Letter 34 (p. 99-101) and which were intended to study the possibility of increasing through irradiation the genetic variability for quantitative traits in corn have been continued. Subject of this note are the measurements obtained on the R₃ generation grown in summer 1960 at the Agricultural Experiment Station in S. Angelo Lodigiano, in the Po Valley.