4. Comparative grain yields of random and selected inbreds.

Among a group of inbreds produced in the absence of artificial selection, 20 were selected in the S_6 generation which on the basis of their phenotype appeared to merit testing for combining ability (a type of visual selection similar to that commonly practiced in corn breeding). At the same time an equal number of lines from the same population were selected at random. Top cross yields (using a composite as a tester) of the two groups were compared in tests grown in six locations of two replications each. Mean grain yields of the two groups were as follows:

Selected lines	86.66 Bu/A
Unselected lines	86.64 Bu/A

The top yielding line in the test was a selected one which produced 5.8 Bu/A more than the best unselected line, although the difference was not significant statistically. Among the twelve top yielding lines, seven were unselected and five selected; the twelve lowest yielding lines consisted also of seven unselected and five selected.

William L. Brown