

EFFECT OF SELECTION FOR LOWER
EAR HEIGHT ON YIELD IN SYNTHETIC
POPULATIONS OF MAIZE

A Thesis

Submitted to the Faculty

of

Purdue University

by

Gustavo A. Vera

In Partial Fulfillment of the

Requirements for the Degree

of

Master of Science

June 1969

ABSTRACT

Vera, Gustavo A. M.S., Purdue University, June 1969. The effect of selection for lower ear height on yield in synthetic populations of maize. Major professor: Paul L. Crane.

Two populations of maize [Antigua 2D x (B10 x B14)]_{F5} and [Eto x CBC]_{F5} were used in a selection experiment conducted in Lafayette, Ind. in order to determine the effectiveness of 50% selection pressure in lowering the ear height. These two populations were subjected to two cycles of selection, each followed by a generation of random intermating. The selection was practiced within each day's silking to avoid confounding with maturity.

The evaluations, made in three locations in 1968, were with the populations per se and the top crosses of these populations with five testers. The characters studied were: yield, per cent moisture, per cent lodging and ear height, to determine the effect of selection on each of them.

The results showed that this system of selection was effective in lowering the ear height 4.5% per cycle. There was no effect on per cent moisture. Yield decreased slightly probably due to nursery procedures. There was a reduction in per cent lodging due to selection.