

GENOTYPIC VARIABILITY AND CORRELATIONS COEFFICIENTS
OF SOME QUANTITATIVE CHARACTERS IN FIELD BEANS
(Vicia faba L.)

By

A.A. El-Hosary, M.K. Mohamed and M.A. El-Gyar
Faculty of Agric. at Moshtohor, Zagazig University
and Desert Institute, Cairo, Egypt.

ABSTRACT

During the season of 1982-83, a collection of sixteen local and introduced field bean varieties were assessed in two locations to evaluate the genotypic and phenotypic variability, genetic coefficient of variation, heritability, genetic advance under selection, genotypic and phenotypic correlations.

Significant location mean squares were detected for all traits. Mean squares due to genotype and genotype X location were highly significant for flowering date, number of branches, number of pods per plant, 100-seed weight and seed yield per plant. For other traits, however, mean square due to genotypes was highly significant along with insignificant genotypes X locations interaction.

High relatively associated values of G.C.V. %, heritability and $\Delta g\%$ were obtained for all traits, except number of seeds per pod, first flowering node, and flowering date, indicating that selection for these traits could be effective in improving field bean varieties.

Genotypic correlation coefficients in most cases were comparatively higher than their corresponding phenotypic coefficients. Highly significant and positive correlations were obtained between seed yield per plant and each of seed weight, plant height, first fruiting and flowering node. Also, highly significant positive correlations were detected between seed weight and each of number of seeds per pod, plant height, first fruiting and flowering node. Hence, the four traits viz. 100-seed weight, plant height, first fruiting and flowering node could be effective aids to improve seed yield in field bean.

INTRODUCTION

Breeders give a great deal of interest to the genotype X environment interaction in that breeders are interested in distinct variability in breeding stocks in order to improve the agronomic characters of the new varieties. In field beans Vicia faba L. information obtained from the genotype X environment interaction can help in suggesting efficient program for breeding outstanding varieties. Because yield is a very complex