# Genetic Analysis Of Growth And Development Characters In Lablab Bean (*Lablab Purpureus* (L.) Sweet)

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**ABSTRACT**

In present study, 5 lines and 3 testers of lablab bean were crossed in line × tester fashion. The 15 $F_1$ hybrids along with 8 parents were grown to estimate GCA and SCA for eleven growth and developmental characters. Among the female lines ACCW-116 was found to be promising. Other lines ACCW-113, ACCW-166 and Konkan wal-2 also exhibited significant effect for GCA for most of the characters. Among testers, Arka Vijay expressed highest GCA effect for most of the characters. The hybrid, ACCW-116x. Hebbal-3 was best specific combination for days to overall maturity and leaf area plant$^{-1}$.

**Key words :** Lablab bean, combining ability, growth, developmental characters

## INTRODUCTION

Lablab bean is one of the important pulse crops of Konkan region of Maharashtra locally known as *Wal*. It is the staple food of the people and a major source of vegetable protein. The crop is characterized for its extra ordinary tolerance to drought and therefore, it is grown on residual moisture conditions during *rabi* season as it thrives well under water stress. The crop is best suited in rotations, strip crossing and intercropping. Lablab bean (*Lablab purpureus* (L.) Sweet) is one of the important arid legume of Konkan region. However, being the crop is localized, farmers are growing low yielding, late maturity, viny and bushy types of lablab bean. Therefore, it is necessary to identify and develop high yielding, early maturing, and determinate erect genotypes with longer roots to tolerate relatively more drought. With a view to know the magnitude of gene action and to access General Combining Ability (GCA) of parents and Specific Combining Ability (SCA) of hybrids, the present experiment was under taken study the combining ability effects of genotypes and hybrids for growth and developmental characters in lablab bean.

## MATERIALS AND METHODS

The experimental material consisted of five diverse lines, ACCW-166 (Kelshi wal), ACCW-116 (Palgad local), ACCW-113 (Golangaon local) and Konkan wal-2 which were used as females and the testers Konkan Bhushan, Arka Vijay and Hebbal-3 were used as male. ACCW denotes the different accessions of *wal* maintained at the research farm and places in parenthesis indicate the location of local germplasm collection. Twenty three entries

consisting of the five lines, three testers and fifteen $F_1$, hybrids were grown in randomized block design with three replications during *Rabi* 1995-96. The experiment was conducted at the Research Farm, Department of Botany, College of Agriculture, Dapoli (Maharashtra). The seeds were dibbled at the distance of 45 cm between rows and 45 cm within a row. Biofertilizer (Rhizobium culture) @ of was applied to seeds before sowing. Fertilizers were applied @ 20 kg N and 40 kg $P_2O_5$ hectare$^{-1}$ as a basal dose at a time of sowing. Other agronomic cultural practices were carried out as per the recommendations. Observations were recorded on randomly selected five plants for five growth characters *viz.*, Plant height, primary branches and length of root/plant$^{-1}$, No. of leaves/ plant$^{-1}$, leaf area and six developmental characters *viz.*, days to bud appearance, days to flower appearance, days to first pod appearance, days to first pod maturity, days to overall maturity and flowering span in lablab bean. The analysis of variance was computed as suggested by Panse and Sukhatme (1976). The combining ability analysis was carried out as the Kempthorne (1957).

## RESULTS AND DISCUSSION

*Mean performance of parents and hybrids*

The mean performance of lines, testers and hybrids are presented in Table 1.

The results revealed significant differences for all growth and developmental characters. In general, the lines were taller, bushy and with more branches than testers. Lines had much higher mean for plant height (94.13 cm)

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