Effect of sowing dates on growth and yield of French bean 
(*Phaseolus vulgaris* L.) varieties during *Kharif* season

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**ABSTRACT**

An experiment was conducted during *Kharif* season at Department of Agronomy, Marathwada Agricultural university, Parbhani to study the effect of sowing dates on growth and yield of French bean (*Phaseolus vulgaris* L.). The experiment was conducted in split plot design with 3 replications. Each replication consisted of 16(sixteen) treatment combinations comprising 04(four)sowing dates i.e. 10 days interval after first sowing on onset of monsoon and four varieties i.e. Varun, Waghya, Arka komal and Contender. Sowing date treatment were allotted to the main blocks randomly and varieties were allotted randomly in each sub-block. Results showed, sowing date M₁(onset of monsoon) and M₂(10 days after first sowing) were at par with each other and both sowing dates recorded significantly higher seed yield (kg/ha) over M₃(20 days after first sowing) and M₄(30 days after first sowing). Sowing date M₁(20 days after first sowing) was significantly superior over M₄(30 days after first sowing) which recorded, significantly lowest seed yield (kg/ha). Variety V₁(Varun) recorded significantly higher grain yield (820kg/ha) over remaining three varieties. However varieties V₃(Arka komal) and V₄(Waghya) were at par with each other. Variety V₂(Varun) recorded significantly lowest seed yield (365kg/ha).

**KEY WORDS:** Sowing dates, Varieties, Yield attributes, Yield, French bean

French bean (*Phaseolus vulgaris* L.) is an important pulse vegetative crop of the world. Brazil, China and United States are the important countries which are producing more than half of the world’s supply (Anonymous, 1995). It is probably a native of Southern and central America (Parthasarthy, 1986). But in India it can be grown during *Rabi* season. Time of sowing is a non-monetary input which influence grain yield to a great extent. Optimum time of sowing may vary with the location. Variety may also vary in growth and maturity and thus influence grain yield. Further more, the optimum time of sowing may vary with different varieties of French bean. Therefore, field experiments were conducted to study the performance of varieties of French bean under different dates of sowing.

**RESEARCH PROCEDURE**

A field experiments was conducted at Department of Agronomy, Marathwada Agricultural university Parbhani, to study the effects of sowing dates on growth and yield of French bean varieties during *Kharif* season of 2005-06. The soil of the experimental field was clayey, fairly rich in available potassium, low in available nitrogen and medium in phosphorus.

The experiment was laid out in split plot design with three replication. Each replication consisted of 16 treatment combinations comprising 4 sowing dates i.e. M₁−onset of monsoon, M₂−10 days after first sowing, M₃−20 days after first sowing, M₄−30 days after first sowing and four varieties i.e. V₁−Varun, V₂−Waghya, V₃−Arka komal and V₄−contender. Each replication was divided into four main block and each block was divided into sub-blocks. The gross and net plot size was 4.5m x 3.6m and 3.6m x 2.7m, respectively. Sowing date treatments were allotted to the main blocks randomly and varieties were allotted randomly in each sub block.

**RESEARCH ANALYSIS AND REASONING**

The results obtained from the present investigation have been discussed below:

**Sowing dates:**

It was observed from the Table 1 that the sowing date M₁ was significantly superior over sowing date M₃,
The highest grain yield (722kg/ha) was recorded in sowing date $M_1$, which was at par with sowing date $M_2$. The sowing date $M_4$ recorded significantly lowest seed yield (242kg/ha) with delayed sowing; grain yield of French bean was decreased considerably. Teteny and Szejtli (1980) reported similar results.

The sowing of French bean at sowing date ($M_1$) showed highest plant height, branch/plant, pods/plant, seeds/pod, 100 seed weight (g) and biological yield over all other sowing dates i.e. $M_2$, $M_3$ and $M_4$. Under delayed sowings, there was reduction in number of pods/plant, 100 seed weight, grain yield, biological yield which was responsible for lower yields.

Varieties:

Variety $V_1$ (Varun) produced maximum grain yield, biological yield over remaining three varieties. However varieties $V_4$ (Contender), $V_3$ (Arka komal) and $V_2$ (Waghya) were at par with each other. Variety $V_2$ (Waghya) recorded significantly lowest seed yield (Ghodake et al., 2004). Reduction in number of pods/plants, seeds/pod, and 100 seed weight and delay in flowering and maturity resulted in low grain yield in other three varieties. Contender was the tallest whereas varun was the shortest in height. Varun was large seeded whereas Contender, Waghya, Arka komal were small seeded. Varieties do differ in plants height, pods/plant and 100 seed weight (Singh and Faroda, 1982). Variety $V_1$ (Varun) was earlier in flowering as well as maturity than the other varieties under different dates of sowing. This shows that, this variety not only produced higher grain yield over other varieties but was also of short duration during Kharif season.

It was concluded that in Marathawada region, sowing of French bean during $M_1$ (onset of monsoon) and $M_2$ (10 days after first sowing) produced maximum seed yield (kg/ha) during Kharif season and variety varun $V_1$ produced highest seed yield as compared to other three varieties. As the yield level of French bean during Kharif season was found low, the result are not encouraging for cultivation of French bean during Kharif season.

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LITERATURE CITED


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