

Response of frenchbean (*Phaseolus vulgaris* L.) to land configurations and fertility levels during *kharif* season

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ABSTRACT

A field experiment was carried out during *kharif* season of 2005-06 at Department of Agronomy farm, Marthwada Agricultural University, Parbhani to investigate Response of frenchbean (*Phaseolus vulgaris* L.) to land configurations and fertility levels during *kharif* season. All growth and yield contributing characters viz., plant height, functional leaves, branches, number of pods per plant, number of seeds per pod, seed yield per plant and seed yield (kg.ha⁻¹) were found not significant for all land configurations while L₁-sowing on flat bed with no opening of furrow and L₃-sowing in paired row (30+60) x10 cm with opening of furrow after last interculture found significantly superior over L₂-Sowing on flat bed and opening of furrow at last interculture in respect to pod and total dry matter. Fertility level F₂-120:60:60 NPK kg.ha⁻¹ recorded significant response in relation to plant height, functional leaves, branches, total dry matter, number of pods per plant and 100 seed weight while yield parameters were found not significant at all fertility levels (F₁-100:50:50, F₂-120:60:60, F₃-140:70:70 NPK kg.ha⁻¹).

Key words : French bean, Land configurations, Yield and fertility levels, Seed yield.

INTRODUCTION

Pulses constitute an integral part of Indian vegetarian diet and meet major share of protein requirement of predominantly vegetarian population of India. Credit of green revolution recorded in sixties has been very much shared by cereals while productivity of pulses remained unchanged. Besides, with increase in population, there has been growing demand of pulses, however, due to various constraints their production improvement almost remains stagnant which resulted in almost limiting protein availability to majority of vegetarian population. French bean is specially characterized by the lack in nodulation owing to the absence of NOD gene regulation though it is a legume crop (Pathak and Khurana, 1993). Though it is a leguminous and short duration crop, due to its low productivity, it does not become popular among the cultivators of Maharashtra and the Marathwada as well. For increasing the per hectare production of this crop, one has to choose high yielding varieties with different agro-techniques like sowing, nutrient, water and weed management, etc. However, little work has been done in the past on this crop in the Maharashtra state and particularly in Marathwada region. Generally, this crop is grown during *rabi* season, however, due to very short span of cold and followed by higher temperature, growth of this crop is stunted resulting thereby low productivity. Looking to this, it is necessary to test this crop during *kharif* season. However, drainage is the important criteria

for vertisols and hence, studies on different land configuration combined with nutrient doses are tested. Hence, the present investigation entitled "Response of Frenchbean (*Phaseolus vulgaris* L.) to land configurations and fertilizer levels during *kharif* season" was carried out.

MATERIALS AND METHODS

The experiment was conducted during *kharif* season of 2005-2006 at the Agriculture College Farm, Marathwada Agricultural University, Parbhani. The topography of the experimental plot was fairly leveled. The soil was medium dark gray in colour and about 100 cm deep clayey loam in texture and moderately fertile being low in organic carbon (0.56 %), high in phosphorus (18.23kg.ha⁻¹) and very high in potassium (365.76 kg.ha⁻¹). The field experiment was laid out in Split Plot Design (SPD) with four replications. Each replication consisted of nine treatment combinations of three land configuration *i.e.* Sowing on flat bed (45 cm x 10 cm) and no opening of furrows, sowing on flat bed and opening of furrow after last interculture and sowing in paired row (30 + 60) x 10 cm and opening of furrow after last interculture and three fertilizer levels *i.e.* 100:50:50 kg NPK/ha, 120:60:60 kg NPK/ha and 140:70:70 kg NPK/ha. Land configurations were allocated to the main blocks randomly in each replication and fertilizer levels were allotted randomly in each block. The crop was fertilized as per

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