

Row spacing and spatial arrangements effect on pulses mono-cropping in rainfed condition in arid zone of western Rajasthan

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ABSTRACT

Response of three *kharif* pulses viz. greengram, mothbean and clusterbean to different row spacings (22.5, 30 and 60 cm) under normal and paired row arrangements (30/90 and 60/120 cm) was studied at Bikaner during 1987 and 1988 under rainfed condition. Number of branches per plant and dry matter production under low and erratic rainfall condition was higher under wider row spacings whereas under paired row arrangement it was at par during subnormal rainfall year. All the crops attained maximum plant height under narrow spacings with lower number of branches per plant.

INTRODUCTION

In arid region of western Rajasthan, the yields obtained from rainfed lands are low and highly variable due to inadequate and unreliable rainfall pattern. To optimise the production under good rainfall years and stabilize the production during deficit and erratic rainfall years, scientific management of the crop plays an important role. The pulses are more drought resistant than cereals, due to their better root development.

Plant population simply defines the number of plants per unit area, which in turn defines the area available for individual plant. The plant population in field is governed by plants or row spacings. Spatial arrangement can be explained as the pattern of distribution of plant over the ground ; this determines the configuration of the area available to the individual plant (Rao *et al.*, 1977). The plant population and spatial arrangement factors

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