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Yield, quality and soil fertility of cluster bean (*Cyamopsis tetragonoloba* L.) as influenced by various row spacing and levels of phosphorus

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ABSTRACT : A field experiment was conducted at Sardarkrushinagar Dantiwada Agricultural University, Sardarkrushinagar during *Kharif* season of 2010 on loamy sand soil. The treatments comprised of three levels of row spacing ($S_1 = 30 \text{ cm} \times 15 \text{ cm}$, $S_2 = 45 \text{ cm} \times 15 \text{ cm}$ and $S_3 = 60 \text{ cm} \times 15 \text{ cm}$) and four levels of phosphorus ($P_1 = 0 \text{ kg P}_2\text{O}_5/\text{ha}$, $P_2 = 20 \text{ kg P}_2\text{O}_5/\text{ha}$, $P_3 = 40 \text{ kg P}_2\text{O}_5/\text{ha}$ and $P_4 = 60 \text{ kg P}_2\text{O}_5/\text{ha}$). The results under the study showed that the row spacing significantly influenced and wider spacing ($60 \text{ cm} \times 15 \text{ cm}$) produced maximum available nitrogen and available phosphorus in the soil after harvest whereas, maximum green pod yield and dry fodder yield was recorded in narrowest row spacing ($30 \text{ cm} \times 15 \text{ cm}$). The application of phosphorus significantly influenced the various yield and quality parameters and higher dose of phosphorus ($60 \text{ kg P}_2\text{O}_5/\text{ha}$) was found superior in yield and quality characters under study. The $60 \text{ kg P}_2\text{O}_5/\text{ha}$ recorded maximum pod yield and dry fodder yield.

Key Words : Spacing, Phosphorus, Soil fertility, Cluster bean

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