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Research Article

Effect of pear millet -based pulses intercropping in rained conditions

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ABSTRACT : A field experiment was conducted during the rainy season of 2007 at Agronomy Instructional Farm, C.P. College of Agriculture, S.D. Agricultural University, Sardar Krushinagar, Gujarat, to study the effect of pear millet - based pulses intercropping in rained conditions. Based on the results, it was concluded that intercropping of pearl millet with green gram at 2:2 pair row ratio was distinctly superior over sole pearl millet and found most profitable by realizing the highest net return and LER.

KEY WORDS : Pearl millet, Pulses, Intercropping, LER

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INTRODUCTION

Abnormal occurrence of monsoon is one of the important factors for crop production under rain fed conditions. The principle rainy season crops, grown as sole crop at times are found to be rather risky due to delayed monsoon accompanied with prolonged intermittent dry spells. A strategy for stabilizing production of dry-land crops through commonly recognized practice of intercropping of compatible crops is considered viable to overcome the situation. The system aimed at increasing productivity per unit area and it guarantee insurance against total crop failure, particularly aberrant weather conditions. Patil and Patil (1989) reported beneficial effects of intercropping principal rainy season legumes with pearl millet and gives additional yield also. Therefore, an experiment pearl millet based on intercropping of pulses.

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EXPERIMENTAL METHODS

A field experiment was conducted at Agronomy Instructional Farm, C.P. College of Agriculture, S.D. Agricultural University, Sardar Krushinagar, Gujarat, during rainy season of 2007. The soil of the experimental field was loamy sand in texture, low in organic carbon (0.35 %), and available nitrogen (173 kg ha^{-1}) medium in available phosphorous (44 kg ha^{-1}) and available potassium (250 kg ha^{-1}) with slightly alkaline reaction (pH 7.4). Total annual rainfall of 574.31 mm in 26 rainy days was received during crop growth period of July to August. The experiment was comprised of 10 intercropping system with sole pearl millet, *viz.*, T_1 (Sole pearl millet), T_2 (Sole green gram), T_3 (Sole cluster bean), T_4 (Sole moth bean), T_5 [Pearl millet + green gram (1:2)], T_6 [Pearl millet + cluster bean (1:2)], T_7 [Pearl millet + moth bean (1:2)], T_8 [Pearl millet pair + green gram pair (2:2)], T_9[Pearl millet pair + cluster bean pair (2:2)] and T_{10} [Pearl millet pair + moth bean pair (2:2)]. The experimental was laid out in randomized block design with four replications, the pearl millet variety GHB-558, was sown with green gram (Gujarat gram-4), guar (Gujarat guar-2), moth bean (Gujarat moth bean-2) pulses crops. Pearl millet was sown at 45 cm row spacing in