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Research Article

Influence of row ratios and fertility levels on yield attributes and yield of pearlmillet – greengram intercropping system and nutrient status of the soil

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ABSTRACT : A field experiment was conducted at College Agronomy Farm, B.A. College of Agriculture, Anand Agricultural University, Anand during summer, 2011 comprising four intercropping treatments *i.e.* pearlmillet sole, pearlmillet+greengram, 1:1, pearlmillet+greengram, 2:1, pearlmillet+greengram, 1:2 and three fertility levels *viz.,* 50 per cent RDF, 75 per cent RDF and 100 per cent RDF. The grain and stover yields of pearlmillet were significantly higher under pearlmillet sole followed by pearlmillet+greengram 2:1. However, pearlmillet + greengram 1:2 gave maximum seed and stover yields of greengram and recorded significantly higher pearlmillet equivalent yield than other systems.Application of 100 per cent RDF recorded significantly the highest yield of pearlmillet and greengram and recorded significantly higher pearlmillet equivalent yield than other treatments.

KEY WORDS : Pearlmillet, Seed yield, Protein content

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INTRODUCTION

Pearlmillet, locally called as bajra is an important dual purpose crop as its grain is used for human consumption and its fodder as cattle feed. Shortage of pulses and oilseeds in the country have focused the attention on intercropping systems, which have also the capacity to improve the physical, biological and chemical properties of the soil. Intercropping of pearlmillet with legumes may increase the productivity per unit area and avoids the risk of failure of crops. Fertilizer management is one of the important cost effective factors known to augment the crop production. Hence, inclusion of legumes in any intercropping system has becomes imperative with the overall view of maintaining soil fertility and for economizing fertilizer use.

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EXPERIMENTAL METHODS

The field experiment was conducted during summer season of the year 2011 at B. A. College of Agriculture, Anand Agricultural University, Anand. The experimental soil was low in available nitrogen (198 kg ha^{-1}), medium in available phosphorus (40.3 kg ha^{-1}) and high in available potassium (341 kg ha^{-1}). The experiment was laid out in factorial randomized block design with 12 combinations comprising of four intercropping treatments (pearlmillet sole, pearlmillet + greengram 1:1, pearlmillet + greengram 2:1 and pearlmillet + greengram 1:2) and three fertility levels (50%, 75% and 100% of RDF) replicated four times. The pearlmillet variety GHB-558 and greengram variety Meha were used as a test varieties. Sole plating of pearlmillet was done at 45 x 10 cm. Fertilizer application