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EFFECT OF TILLAGE AND NUTRIENTS ON YIELD, SOIL PROPERTIES AND ENERGY USAGE IN RAINFED PEARL MILLET

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Abstract

An investigation was undertaken to evaluate the effect of tillage practices and nutrient management in pearl millet and their effect on yield, economics, soil properties and energy utilization for two consecutive years during *Kharif* seasons (2020 and 2021) at CCS HAU, Regional Research Station, Bawal under rainfed condition. Pooled data (2020 and 2021) reveal that among the tillage practices Two harrow + one cultivator and planking + two inter culture operations by kasola at 15-20 and 30-35 days after sowing (CT_1) recorded highest grain yield (30.29 q/ha) which was significantly higher over One harrow + one cultivator and planking + one inter culture operation by kasola between 21-28 DAS (26.59 q/ha) (MT_2). Among the nutrient treatments 100 % RDF (30.95 q/ha) recorded significantly higher grain yield over 100 % N through FYM (26.60 q/ha). Net return (Rs. (₹) 48027/ha) and B: C ratio (2.60) was recorded highest under conventional tillage with one inter culture operation. Among nutrient treatments the highest net return (₹ 52357/ha) and B: C ratio (2.72) was recorded under 100 % RDF treatment. Highest rain water use efficiency was recorded under CT_1, whereas among various nutrient treatments it was highest (13.91 kg/ha mm) under 100 % RDF. NPK concentration and uptake in grain and stover were significantly higher in CT_1 over rest of the treatments. Lowest input energy and highest energy productivity was recorded under MT_2. Application of 100 % N through FYM recorded lowest input energy (4.68 MJ/ha) and highest energy productivity (1.96 Kg/MJ/ha).

Key words: energy, nutrient, pearl millet, tillage methods, yield

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