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Integrated nutrient management (INM) on growth, yield and quality of papaya (*Carica papaya* L.) cv. CO-7

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ABSTRACT : An experiment was conducted during the year 2004-05 and 2005-06 at Main Experiment Station, Department of Horticulture, Narendra Deva University of Agriculture and Technology, Kumarganj, Faizabad (U.P.) to find out the effect of organic manures, inorganic fertilizers and biofertilizers on growth, yield and quality of papaya cv. CO-7. The maximum plant height (201.95 and 201.07 cm), circumference (30.88 and 32.04 cm) and number of leaves per plant (32.00 and 32.16) was recorded with T₁₀ (FYM + 100% NPK + *Azotobacter* + PSB) which was at par with T₁₁ (FYM + 100% NPK + *Azospirillum* + PSB), T₄ and T₅ and significantly superior as compared to control. However, minimum days to first flower appearance (142.94 and 144.14), height at which first flower appeared (58.58 and 58.56 cm) and minimum days of fruit maturity (159.50 and 157.41) was recorded in T₁₀ (FYM + 100% NPK + *Azotobacter* + PSB) closely followed by T₁₁ (FYM + 100% NPK + *Azospirillum* + PSB), T₄ and T₅. The maximum fruit length (19.75 and 19.63 cm), width (13.54 and 13.75 cm), weight per fruit (0.950 and 0.952 kg), number of fruit per plant (48.80 and 48.50), yield (46.07 and 48.18 kg/plant) and shelf life of fruit (7.66 and 8.00 days) was recorded with the application of T₁₀ (FYM + 100% NPK + *Azotobacter* + PSB) which was at par with T₁₁ (FYM + 100% NPK + *Azospirillum* + PSB), T₄ and T₅ and significantly superior as compared to control. However, chemical composition of fruit viz., maximum TSS (16.78 and 16.80%), ascorbic acid (63.77 and 63.73 mg/100g), reducing sugars (13.79 and 14.18%), non reducing sugar (1.62 and 1.66%), total sugars (15.39 and 15.84%) and minimum acidity (0.140 and 0.139%) were recorded with T₁₀ (FYM + 100% NPK + *Azotobacter* + PSB) closely followed by T₁₁ (FYM + 100% NPK + *Azospirillum* + PSB), T₄ and T₅. The maximum net return (ha⁻¹) was recorded Rs. 471551.25 and Rs. 472801.25 under T₁₀ (FYM + 100% NPK + *Azotobacter* + PSB) closely followed by T₄ (FYM + 50% NPK + *Azotobacter* + PSB). While, highest net profit per rupee invested (C: B ratio) was noted (1:5.25 and 1:5.29) in T₄ (FYM + 50% NPK + *Azotobacter* + PSB) closely followed by T₅ (FYM + 50% NPK + *Azospirillum* + PSB), T₁₀ and T₁₁ during both the year. The highest cost: benefit ratio obtained in T₄ was due to the higher fruit production and reduced cost of chemical fertilizers as compared to other treatment.

KEY WORDS : INM, Growth, Yield, Quality of papaya

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