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Research Article

Influence of long term fertilizer application on root biomass and nutrient addition of finger millet

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The long term field experiment was conducted during 2010-2011 at ZARS, GKVK, Bangalore to study the long term effect of fertilizer doses on finger millet root biomass and nutrient addition. The experiment was laidout in CRBD replicated three times with eleven fixed treatments. The experiment results revealed that the root biomass addition and root length through fingermillet was higher (11.15 q ha⁻¹ and 20.56 cm) in treatment received 150 % NPK compared to imbalanced fertilizer applied treatments. Balanced application of NPK along with FYM + lime showed a profound effect on the root biomass and root length in finger millet crop.The total N P and K content in roots of finger millet was significantly higher at 150 % of NPK application and also fertilizers were applied with FYM + lime. The application of lime along with FYM and inorganic fertilizer treatment increased the calcium(0.58 per cent) and magnesium (0.32 per cent) content were recorded in 100 % NPK +FYM + lime followed by 100 % NPK+lime in finger millet roots compared to all other treatments.Sulphur content of roots of finger millet ranged from 0.06 to 0.15 per cent. In treatments where ever single superphosophate, FYM and lime were applied there was higher sulphur content compared to no sulphur applied plots (100 % NPK-S free).Similarly the higher concentrations of micro nutrients (Fe, Mn, Cu, and Zn) were recorded in balanced, 150 per cent fertilizers and FYM applied plots compared to other treatments. The uptake of all major, secondary and micro nutrients differed significantly in accordance with content of nutrients content and root biomass yield.

Key words : Root biomass, Root length, Nutrient contents, Nutrient uptake

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