



Research Article

On-farm evaluation of integrated nutrient management in potato (*Solanum tuberosum* L.) under south-western semi-arid zone of U.P.

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Farm yard manure, INM, Nadep compost, Potato, Vermicompost **SUMMARY :** On-farm trials were conducted at 3 locations of 3 villages in Firozabad district during *Rabi* season of 2006-07 and 2007-08 under farmer's own management to evaluate the best combination of chemical fertilizers with organic sources for sustainable productivity and economic viability of potato crop. The 100% NPK through chemical fertilizers and 50 and 75 % NPK through chemical fertilizers with vermicompost @ 5 t/ha, Nadep compost @ 20 t/ha and farm yard manure @ 20 t/ha were applied and tested. Application of 75% NPK through chemical fertilizers along with 5 t/ha vermicompost gave highest tuber yield of 336 q/ha with 41.17 per cent higher yield as compared to farmer's practice followed by 75% NPK through chemical fertilizers along with 20 t/ha nadep compost and FYM. Among different integrated nutrient management treatments of organic sources along with 75 % NPK through chemical fertilizers, vermicompost was found best compared to nadep compost and FYM. However, the maximum net return of Rs. 60,990/- and highest B:C ratio of 1:2.6 were recorded from application of 75% NPK through chemical fertilizers + 20 t/ha nadep compost. The minimum net return of Rs. 34,227/- and lowest B:C ratio of 1:1.7 were noted in farmer's practice. These results indicate that application of 75 % NPK through chemical fertilizers along with vermicompost @ 5 t/ha or nadep compost @ 20 t/ha or FYM @ 20 t/ha saved 25 % NPK and maintained the soil health for sustainable production.

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