INFLUENCE OF ORGANIC AND INORGANIC FERTILIZERS ON GROWTH, YIELD AND ECONOMICS OF POTATO CROPS UNDER CHHATTISGARH PLAINS

Eshu Sahu, D.A. Sarnaik, P.K. Joshi, Pravin Kumar Sharma and Smita Bala Barik

Department of Horticulture, Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.) Email: eshusao@gmail.com

Abstract: The field experiment was conducted at the All India Coordinated Research Project on Potato , Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh during *Rabi* 2013-2014 in factorial randomized block design with fifteen treatment combinations consisting of different levels of RDF as (75%, 100% and 150% NPK) and different organic fertilizers as (FYM, PSB and *Azotobacter*) were replicated three times. Among the inorganic fertilizer treatments 150% RDF performed better over other treatments, while in case of organic fertilizer treatments PSB + *Azotobacter* was found superior than others. The interaction between organic and inorganic fertilizers was found differ non significantly. The results indicated that the highest gross return (Rs 271480 ha⁻¹), net return (Rs 192827.52 ha⁻¹) and benefit: cost ratio (Rs 2.45) was obtained under 150% RDF with PSB + *Azotobacter*.

Keywords: Potato, fertilizers, biofertilizers, yield

REFERENCES

Al-Moshileh, A.M., Errebhi, M.A. and Motawei M.I. (2005). Effect of various potassium and nitrogen rates and splitting methods on potato under sandy soil and arid environmental conditions.*Emir. J. Agric. Sci.***17**(1): 01-09.

Alam, M.N., Jahan, M.S., Ali, M.K., Ashraf, M.A. and Islam, M.K. (2007). Effect of Vermicompost and Chemical Fertilizers on Growth, Yield and YieldComponents of Potato in Barind Soils of Bangladesh. *Journal of Applied Sciences Research*, 3(12): 1879-1888.

Baishya, L.K., Gupta, V. K., Lal, S. S., Das, B.K. and Kumar, M. (2013). Effect of biofertilizers on growth and yield of potato in north eastern hills of india. *Potato J.* **32**: 3-4.

Banafar, R.N.S. Billore, M. and Kushwah, S. S. (2005). Integrated plant nutrition approaches for potato. *Potato J.* **32**: 3-4.

Densilin D.M., Srinivasan S., Manju P. and Sudha S. (2010). Effect of Individual and Combined Application of Biofertilizers, Inorganic Fertilizer and Vermicompost on the Biochemical Constituents of Chilli. *Journal Biofertilezers & Biopesticides* 2:104.

Nag, G.P., Sarnaik, D.A., Verma, Satish K. and Tamrakar S.K. (2008). Integrated nutrient management in potato for Chhattisgarh plains. *The Orissa J. of Horticulture*, Vol. 36 (2): 158-161. Najm A.A., Haj Seyed Hadi M.R., Fazeli F., Taghi Darzi M. and Shamorady R. (2010). Effect of Utilization of Organic and Inorganic Nitrogen Source on the Potato Shoots Dry Matter, Leaf Area Index and Plant Height, During Middle Stage of Growth. *International Journal of Agricultural and Biological Sciences* 1:1.

Patel, C.K., Chaudhari, P.P., Patel, R.N. and Patel, N.H. (2010). Integrated nutrients management in potato based cropping system in North Gujrat. *Poatao J.* **37**(1-2): 68-70.

Singh,V., Chaurasia, S.P.R. and Sharma, J.S. (2002). An economic analysis of farm income distribution on potato Specialized farms in Agra district of Uttar Pradesh. *India J. of Agri.* Eco. **57**(4): 741-750.

Singh, K.P., Singh, R.K., Singh, S.N., and Singh V.K. (2007). Effect of fertilizer level, seed rate and seed size on yield of potato in acidic soils of Manipur. *Potato J.* **34**(1-2): 93-94.

Verma, Satish, K., Asati B.S., Tamrakar, S.K., Nanda, H.C. and Gupta, C.R. (2011). Effect of organic components on growth, yield and economic returns in potato. *Potato J.* **38** (1):51-55.

Yadu D. (2011). Effect of varying levels of NPK fertilizers and size of seed tubers on growth and yield of potato (*Solanum tuberosum* L.) in Alfisol. *M. Sc.* (*Ag.*) *IGKVV Raipur*.