



## RESEARCH PAPER

# Productivity and economics of potato grown with organics fertilization in comparison to inorganic fertilizers

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**Abstract :** A field experiment was conducted on potato (*Solanum tuberosum* L.) at Vegetable Research Station Kalyanpur, Kanpur (U.P.) during 2010-11, 2011-12 and 2012-13 in sandy loam soil. Six different treatments of organic fertilization were tested against the control treatment of recommended inorganic NPK fertilizers. Organic treatments consisted crop residue incorporation, its management, biofertilizers (*Azotobacter* and phosphobacteria), vermicompost @ 5 t ha<sup>-1</sup> or FYM @ 20 t ha<sup>-1</sup> and recommended N based FYM application alone. Based on pooled data over years, treatment of recommended NPK fertilizers (180 kg N + 80 kg P<sub>2</sub>O<sub>5</sub> + 100 kg K<sub>2</sub>O ha<sup>-1</sup>) produced highest potato tuber yield of 35.04 t ha<sup>-1</sup> and earned maximum of Rs. 125177 ha<sup>-1</sup> net return. It was followed by N based FYM application with 32.66 t ha<sup>-1</sup> yield and Rs.109814 ha<sup>-1</sup> net return. The treatment of crop residue management + biofertilizers + vermicompost @ 5 t ha<sup>-1</sup> also produced considerable potato yield of 30.26 t ha<sup>-1</sup> with Rs. 100543 ha<sup>-1</sup> net return. Therefore, these two organics practices may serve as alternative of NPK inorganic fertilizers without much reduction in yield and net return and fear of pollution hazards.

**Key Words :** Potato, Organics, Biofertilizers, Inorganic fertilizers, Production, Economics

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