

Research Article

DOI : 10.15740/HAS/AJSS/13.1/40-44

# Soil health management under vermicompost based integrated nutrient management in wheat

■ Deo Kumar, Ashok Kumar, Sanjeev Kumar Gupta, Sunil Kumar and S. K. Choudhary

Received : 20.02.2018; Revised : 05.05.2018; Accepted : 19.05.2018

MEMBERS OF RESEARCH FORUM:

**Corresponding author :**  
**Sanjeev Kumar Gupta**, Bihar Agricultural University, Sabour, **Bhagalpur (Bihar) India**  
Email: [sanjeevgupta1979@rediffmail.com](mailto:sanjeevgupta1979@rediffmail.com)

**Co-authors :**  
**Deo Kumar**, Banda University of Agriculture and Technology, **Banda (U.P.) India**

**Ashok Kumar**, Sardar Vallabh Bhai Patel University of Agriculture and Technology, **Meerut (U.P.) India**

**Sunil Kumar and S. K. Choudhary**, Bihar Agricultural University, Sabour, **Bhagalpur (Bihar) India**

## Summary

The yield of wheat ranged from 29.16 to 45.14 and 29.56 to 49.14 q ha<sup>-1</sup> during 2005-06 and 2006-07, respectively was influenced significantly by different treatments. During 2005-06 maximum grain yield (45.14 q ha<sup>-1</sup>) was recorded in case of treatment T<sub>10</sub> (3 tonnes vermicompost + 100% NPK of RDF), where 100% NPK with vermicompost @ 3.0 t ha<sup>-1</sup> was applied, was found statistically at par with treatment T<sub>7</sub> (3 tonnes vermicompost + 75% NPK of RDF), where vermicompost @ 3.0 t ha<sup>-1</sup> was applied with 75% NPK and significantly higher than the rest of the treatment. Similar trend of treatments effect on grain yield was also obtained during second year *i.e.* 2006-07. With exception of T<sub>2</sub> (one tonne vermicompost + 50% NPK of RDF), grain yield recorded in T<sub>1</sub> (150: 60: 40: as NPK, recommended dose of fertilizers), where 100% NPK was supplemented through inorganic source was found significantly lower than the rest of the treatments. Graded does of vermicompost with similar does of NPK influenced the grain yield of wheat significantly during both the years with exception of T<sub>8</sub> (one tonnes vermicompost + 100% NPK of RDF) and T<sub>9</sub> (two tonnes vermicompost + 100% NPK of RDF). Results revealed that 50% NPK can be substituted by the application of @ 1.0 t ha<sup>-1</sup> vermicompost as the grain yield recorded in T<sub>1</sub> (150: 60: 40: as NPK, recommended dose of fertilizers) and T<sub>2</sub> (one tonne vermicompost + 50% NPK of RDF), was statistically similar while grain yield increased significantly due to application of vermicompost @ 2.0 t ha<sup>-1</sup> with 50% NPK. Application of different does of vermicompost with 75% NPK yielded significantly higher than the T<sub>1</sub> (150: 60: 40: as NPK, recommended dose of fertilizers), where only 100% NPK was applied during both the years. No significantly variation in grain yield of wheat was found between the treatments having application of 1 t ha<sup>-1</sup> vermicompost with either 50% or 75% NPK but yield varied significantly between treatments having the application of 1 t ha<sup>-1</sup> vermicompost with 50% or 100% NPK. Similarly no variation was also found between T<sub>3</sub> (two tonne vermicompost + 50% NPK of RDF) and T<sub>6</sub> (two tonne vermicompost + 75% NPK of RDF) and T<sub>4</sub> (three tonne vermicompost + 50% NPK of RDF) and T<sub>7</sub> (three tonnes vermicompost + 75% NPK of RDF), while T<sub>4</sub> (three tonne vermicompost + 50% NPK of RDF) and T<sub>10</sub> (three tonnes vermicompost + 100% NPK of RDF), varied significantly during both the years. This implies that application of 3.0 t ha<sup>-1</sup> of vermicompost along with 75% NPK is a better combination for optimum crop yield. This combination also enhanced the physical, chemical properties of soil by improving the availability of different nutrients.

**Key words :** Earthworms, Vermicompost, Chemical fertilizers, Soil fertility, Plant productivity

**How to cite this article :** Kumar, Deo, Kumar, Ashok, Gupta, Sanjeev Kumar, Kumar, Sunil and Choudhary, S. K. (2018). Soil health management under vermicompost based integrated nutrient management in wheat. *Asian J. Soil Sci.*, 13 (1) : 40-44 : DOI : 10.15740/HAS/AJSS/13.1/40-44. Copyright@ 2018: Hind Agri-Horticultural Society.