



Vol. 41, No. 3, pp 274-278, 2013  
Indian Journal of Soil Conservation  
Online URL: <http://indianjournals.com/ijor.aspx?target=ijor:ijsc&type=home>



## Vermicompost and biofertilizers for improved tomato productivity and soil properties in degraded soils of lower Himalayas

Pawan Sharma<sup>1</sup>, H.C. Sharma, P. Singh and R. Prasad

Central Soil & Water Conservation Research & Training Institute, Research Centre, Sector 27A, Madhya Marg, Chandigarh-160019, India.

<sup>1</sup>E-mail: [pawan.dr.sharma@gmail.com](mailto:pawan.dr.sharma@gmail.com); [psharma1956@yahoo.co.in](mailto:psharma1956@yahoo.co.in)

### ARTICLE INFO

#### Article history:

Received : January, 2012  
Revised : August, 2013  
Accepted : September, 2013

#### Key words:

*Azotobacter chroococcum*,  
*Piriformospora indica*,  
Soil phosphatase,  
Soil respiration:  
Tomato,  
Vermicompost

### ABSTRACT

In order to improve tomato productivity and restore soil health of degraded agriculture lands, different combinations of biofertilizers with vermicompost, Farm Yard Manure (FYM) or inorganic fertilizers were compared. Vermicompost was found better than FYM in available phosphorus, nitrogen, and presence of beneficial microbes like phosphorus solubilizing bacteria and *Azotobacter* spp. A tomato pot experiment was conducted with degraded soils under five nutrient sources i.e. inorganic fertilizers (urea and single super phosphate), vermicomposts, FYM, inorganic fertilizers and FYM (50:50) and absolute control (no fertilizer). Biofertilizers, *Azotobacter chroococcum* and *Piriformospora indica* were applied to all main treatments keeping un-inoculated controls. Tomato seed germination and growth of tomato nurseries were found to be the best under vermicompost treatments. Tomato yielded highest and almost double under vermicomposts as compared to all other treatments. Biofertilizers showed a significant effect on tomato yields in all the treatments except in vermicompost treatment, which showed higher yields even without biofertilizers due to better native microbial flora. Soil organic carbon, soil moisture, respiration rate and phosphatase activities were found significantly higher in organic treatments with maximum under vermicompost and biofertilizers. It was concluded that vermicompost not only improved tomato productivity but also improved certain soil properties of a degraded soil.

Downloaded From IP: 203.100.76.43 on dated 28-Feb-2017