

## **Comparative bioefficacy evaluation of *Paecilomyces lilacinus* and *Trichoderma harzianum* against *Meloidogyne incognita* (Kofoid and White) Chitwood on Tomato**

**Gobinda Roy<sup>1</sup>, Nripendra Laskar<sup>1</sup>, Anirudha Pramanik<sup>2</sup> and Kusal Roy<sup>2</sup>**

Received January 27, 2016 and Accepted May 28, 2016

**ABSTRACT :** Tomato is an important source of minerals and vitamins. This plant was attacked by several nematodes and these nematodes cause severe losses as quantitatively and qualitatively. Therefore, a study was undertaken to compare the bio-efficacy of fungal bio-control agent such as *Paecilomyces lilacinus*, *Trichoderma harzianum*, Carbofuran and Farm yard manure for the control of *Meloidogyne incognita* on tomato. The experiment was carried out in 2012-13 in an established sick plot infested with *M. incognita*, at Central Research Farm of Bidhan Chandra Krishi Viswavidyalaya, Gayeshpur, Nadia, West Bengal. Pooled analysis of data in 2 years (2011-12 and 2012-13) showed that highest weight of 25 seedlings is 162.88g in treatment of *P. lilacinus* @ 50g/m<sup>2</sup> in nursery bed (T<sub>1</sub>). In case of gall formation in treatment of *P. lilacinus* @ 50g/m<sup>2</sup> in nursery bed + *P. lilacinus* @ 5kg along with 2.5 tons of FYM/ha (T<sub>5</sub>) were found most effective for reducing the gall (9.75) in tomato seedlings among all treatments. At 45 DAT and the harvesting stage the highest (34.72 cm and 110.82 cm) growth of the plant was achieved in treatment of T<sub>5</sub> and T<sub>7</sub>. The fresh and dry weight was noticed in the same treatment of T<sub>7</sub> 653.75g and 113.13g/plant. At 45 DAT and harvesting stage, the *M. incognita* population can be observed at lowest number of 198.25 j<sub>2</sub>/200 c.c. of soil and 242.75 j<sub>2</sub>/200 c.c soils was recorded in T<sub>5</sub>. And ultimately the yield of tomato fruits highest (179.67 q/ha) was noticed in T<sub>5</sub> by the pooled analysis of two years data. Considering the above all observation it may be concluded that application of *P. lilacinus* and *T. harzianum* is a good proposition as bio-control agent compare to chemical pesticide for the management of *Meloidogyne incognita* in tomato.

**Key Words :** Biocontrol, bio-efficacy, *Paecilomyces lilacinus*, *Trichoderma harzianum*, *Meloidogyne incognita*, tomato.