

RESEARCH PAPER:

Potentiality screening of FYM and vermicompost in disease resistance of mulberry

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Asian Journal of Environmental Science, | December 2011 | Vol. 6 Issue 2 : 131 -135

Received:
September, 2011
Accepted :
October, 2011

SUMMARY

Root rot is one of the most serious diseases of mulberry and has been reported from almost all mulberry growing areas in South India. It is caused by a soil borne micro-organism. Addition of organic nutrients to the soil reduces the inoculum density of the pathogen through changes in the general microbial balance. Therefore, in this experiment different organic nutrients were tested against the root rot disease in mulberry crop. The present investigation was made to find out the efficiency of organic manure in the management of root rot disease. The study revealed that the farmyard manure (T₂) and vermicompost (T₁) exhibited better results in managing the disease than the other amendments like panchagavya, neem cake and biocompost. Better growth of plants, higher chlorophyll content, soluble protein, carbohydrate and total phenolics compounds were recorded in farmyard manure and vermicompost. This may be due to the fact that farmyard manure and vermicompost contain more amounts of organic nutrients essential for microbes, plant growth and resistance against fungal diseases.

How to cite this paper: Ranadive Ananth, G, Gunasekar, R., Arun, N., Sundaravel, K. and Ramachandran, R. (2011). Potentiality screening of FYM and vermicompost in disease resistance of mulberry. *Asian J. Environ. Sci.*, 6(2): 131-135.

Key Words :

Mulberry, Disease resistance, Organic amendments, Farmyard manure, Vermicompost, Root rot disease

The negligence on the use of organic sources of nutrients has not only caused the exhaustion of soil fertility and nutrient reserves, but also resulted in soil health problems. Moreover, soil organic matter plays vital role in enhancing soil fertility and productivity. In the absence of organic matter, the soil is a mixture of sand, silt and clay. Many chemical pesticides and fungicides are used to control the pest, which have unfavourable environmental impact and hence, there is a pressure for diseased reliance on such agents and greater regulatory control of their use.

Excessive use of chemical fertilizer and other agrochemicals creates depletion in soil fertility, pollution in surface water bodies, nutrient and increases the soil acidity with nitrification (Dhar, 1962).

Importance of organic manure in present agriculture is increasing day by day because of its utility not only in improving the physical, chemical and biological properties of soil but also in maintaining the soil health without pollution. Addition of organic manure in any

form helps in maintaining the organic matter and fertility level in soil (Swati *et al.*, 2005).

EXPERIMENTAL METHODOLOGY

Crop-Mulberry (*Morus alba*), T₁-Vermicompost, T₂-FYM, T₃-Neem cake, T₄-Panchagavya, T₅-Biocompost, T₆-Control.

Experiment details:

For this experiment, the pot mixture was prepared using sand, red earth, FYM in 1:2:1 ratio and filled in the pot. The root rot affected roots were mixed in pot mixture as a disease agent for mulberry plants. Then as per the treatment, the treatment materials were mixed in each pot. The single budded cuttings were planted after the above processes to study the effect of various organic amendments on the control of root rot in *Morus alba*.

Measurement of physical parameters:

Plant height (cm), size of leaves (cm²),

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