TSP - Biocontrol - Extension Folder - 02

CIARI-Bioconsortia

for the control of bacterial wilt of solanaceous vegetables in A & N Islands

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2016

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Introduction

Solanaceous vegetables like brinjal, tomato and a chilli occupy a sizeable area in vegetable cultivation in Andaman and Nicobar islands. But the bacterial wilt disease caused by *Ralstonia solanacearum* is the severe constraint for growing solanaceous vegetables. Farmers are facing yield losses upto 50% in these crops every year solely due to this disease. The climate of A & N Islands with more than 3000mm rainfall and 80% relative humidity is also highly conducive for the development of this bacterial plant pathogen all round the year.

Symptoms of Bacterial wilt:

- Sudden wilting of affected plants which is characterized by drooping of young leaves and shoots.
- The infected regions of the stem or root show brown discoloration in the vascular region and bacterial ooze can be seen in the form of milky white stream when immersed in clean water.
- The symptoms can be seen at all the stages of plant growth.

Tomato Chillies Brinjal

Methods of application of CIARI-Bioconsortia:

These bio-agents have to be applied right from preparation of field to harvesting stage of crop for better plant disease management and for obtaining higher yield. The four methods of application are as follows.

(i) ***Soil application:***

- One Kilogram of Bio-consortia should be mixed thoroughly with 50 kg well rotten farm yard manure (FYM) or *Gobar khad*.
- Keep in shaded area for 4-5 days. Thorough mixing can be given once in two days along with little spray of water.
- This 50 Kg bio-enriched FYM can be spread to one acre of land uniformly before ploughing and transplanting.
- Soil treatment can be continued in standing crop once in 10 days for better disease resistance.

(ii) ***Seed treatment:***

- For seed treatment, solution can be prepared by mixing 10 gram of Bio-consortia with 1 litre of water.
- This solution is enough to treat 1 Kilogram of seeds. Seed treatment time is for 30 minutes before sowing.

(iii) ***Seedling treatment:***

- For seedling treatment, solution can be prepared by mixing 500 gram of Bio-consortia in 5 litres of water.
- Treat the seedlings in prepared solution by root dipping for 30 minutes before transplanting in the main field.

(iv) ***Foliar application:***

- For foliar spray, solution can be prepared by mixing 100 gram of Bio-consortia in 10 litres of water and the spraying can be done on leaves, flowers and fruits in the standing crop.
- Spray should be repeated once in 10-15 days to avoid disease incidence.

Advantages of Bio-consortia

- Biological control of bacterial wilt of solanaceous vegetables using Bio-consortia is less costlier than any other method of disease control
- It gives protection throughout the crop period and is beneficial in organic cultivation.

- This is also effective against other fungal and bacterial plant pathogens
- Non toxic to plants, soil and other useful organisms.
- It also enhances the plant growth promotion through secretion of various useful compounds and also encourages other beneficial soil microflora
- It is easy to handle and safer to the person unlike chemicals.
- It could also be applied along with other bioformulations available in market.

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For source of Bio-consortia and more information, please contact:

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Design & Print by: M/s. Bala Graphics, Mohanpura
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