

TSP - Biocontrol - Extension Folder - 04

# **CIARI - Bioconsortia**

for Plant Disease Management  
and Yield Enhancement in Protected Cultivation



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**2016**



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Andaman and Nicobar Islands



Vegetable production in Andaman and Nicobar islands is much lower than the requirement due to open field cultivation which faces the problem of heavy rain (3000 mm/year), pest and disease. Protected cultivation is one of the viable options to deal with the climatic constraints for year round production of high value vegetables especially tomato and capsicum. This technology uses less space and gives better yield. Vegetable yield increases by 2-3 times and superior quality vegetables are produced when grown under protected structures. Promotion of protected cultivation will definitely revolutionize vegetable cultivation in Andaman and Nicobar islands. At present, total area under protected cultivation is very less. Hence, there is ample scope to expand the area under protected cultivation.

But the plant diseases are of major concern even in protected cultivation which may cause severe losses in crop yield. Every year farmers are facing 10- 50% loss in total yield solely due to various plant diseases in the islands in major crops. Complete control of plant disease is difficult due to non availability of proper chemicals specific to each of the plant pathogen. Also the usage of chemical is not much advocated as it may pose serious threat to the human and animal health as well as terrestrial and marine bio-diversity of the islands.

Therefore, for the successful management of plant diseases, common methodology should be followed as prophylactic measures before the onset of disease. The biological control is one such method where the plant diseases are controlled by using native useful living microbes. CIARI- Bioconsortia is a talc based formulation which is very effective for management of major plant diseases in both field and protected cultivated conditions.



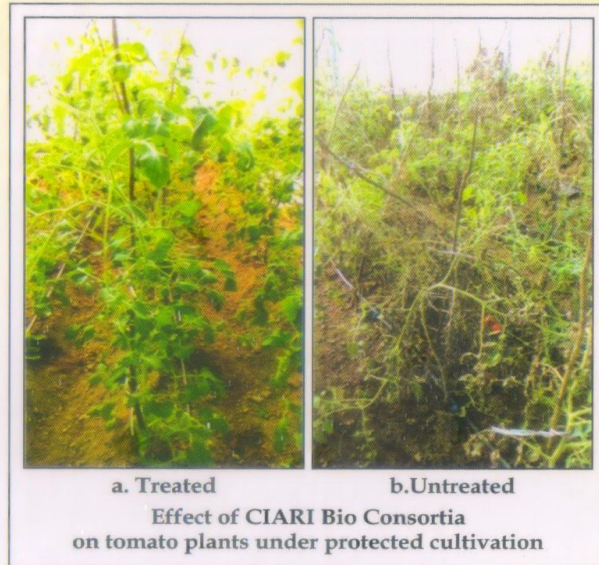
CIARI Bio Consortia

### Methods of application:

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 kg of the talc based bio-agents 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.
- The bio-enriched FYM can 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:

- Ten gram of talc based formulation can be prepared to suspension by mixing it with enough amount of water.
- Mix one Kilogram of seeds and keep for 30 minutes before sowing.

#### (iii) Seedling treatment:

- Five hundred gram of talc based formulation can be prepared to suspension by mixing it in five liters of water.
- Treat the seedlings by root dipping for 30 minutes before transplanting to main field from nursery.

**(iv) Foliar application:**

- Ten gram of talc based formulation should be mixed with one litre of water and the spraying can be done on leaves, flowers and fruits of standing crop.
- Spray can be done once in 10-15 days to avoid disease incidence.

**Advantages of CIARI Bio Consortia:**

- This formulation is less costlier than any other method of plant disease control
- It gives protection throughout the crop period
- Highly effective against most of fungal and bacterial plant pathogens
- Non toxic to plant, soil, environment and other useful organisms and thus useful for organic agriculture.
- It has also the potential to enhance the plant growth promotion through secretion of various useful compounds and to encourage other beneficial soil micro-flora.
- These can also be applied along with other bio-formulations available in market.



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