

APPLICATION OF BIO-FORMULATION AND A NATURAL PRODUCT BASED INSECTICIDE FOR THE MANAGEMENT OF CHILLI LEAF CURL VIRUS DISEASE

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PROBLEM AND RESEARCH GAP

Chilli (*Capsicum* spp.) is an important commercial spice and vegetable crop. Insect pest and diseases are the major constraints in chilli production. Chilli leaf curl virus (ChiLCV) disease is the most serious among the diseases and is responsible for severe yield loss. The disease spreads very rapidly and is transmitted by many species of whitefly which makes the management difficult. Most of the ChiLCV disease management practices are based on vector control through pesticides. Indiscriminate and non-judicious use of pesticides often lead to development of resistant vectors, environment pollution and pesticide residue in the produce. These problems have necessitated the search for safer and effective methods of controlling the ChiLCV disease.



ChiLCV infected plant



Whiteflies on the chilli crop

TECHNOLOGY DEVELOPED

Studies on seed treatment and six sprays with a plant growth promoting antagonistic bacterial bio-formulation (Goa Bio-2) @ 1.0%, spinosad (a natural product based insecticide) @ 0.03%, insecticide (imidacloprid @ 0.03%) and other biological components was conducted. Two years of field evaluation indicated that seed treatment and spray of Goa Bio-2, spinosad recorded reduced ChiLCV disease incidence compared to control throughout the crop period. Green chilli yield of 34 to 40t/ha was recorded in Goa Bio-2, spinosad treatments which is 32 to 52 % increase compared to control.

TECHNOLOGY DEMONSTRATION

This technology was demonstrated in a larger scale under NABARD project in the state of Goa. More than 250 farmers were provided the inputs for demonstration for two consecutive years (2019 to 2021). Based on the field evaluation and considering the ease of application, soil application of Goa Bio-2 @ 1.25g/plant and four sprays of spinosad (15, 30, 45 and 60 DAP) @ 0.03% was taken up. Disease incidence and dry chilli yield were recorded from about 50 demonstrations in each year. Results of two years demonstrations indicated that 33% reduction in ChiLCV disease incidence and 40% increase in dry chilli yield in the fields where soil application of Goa Bio-2 and spinosad spray treatment compared to control. Other benefits of this technology include lesser incidence of thrips, whiteflies, aphids and other diseases the demonstration plots.



Spraying of Spinosad



Demonstration field



Chilli fruiting in the treated plot



Harvested dry chilli