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Effect of IKF-309 180SC against powdery mildew of chilli vis-à-vis impact of weather factors on disease progression in field

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Statement of the Problem: Chilli is one major vegetable crops of the world with India being one of the important producers. Most of the commercial varieties grown in the state were found susceptible to powdery mildew and chemical control has been the most effective method adopted by farmers to protect their crops. But continuous use of same fungicide has developed resistance against powdery mildew pathogen (*Leveillula taurica*), reduced the appeal of chemicals and has led to the search of new fungicides. The study was conducted to evaluate a new fungicide to control the disease. Efficacy of different dosages of IKF-309 180SC was tested in the field condition along with Azoxystrobin 23% SC and Tebuconazole 25% WG.

Methodology: Field experiment was carried out to evaluate the performance of new fungicide IKF-309 180SC and compare with two other fungicides against powdery mildew disease at University Instructional Farm, West Bengal, during winter season. The four different dosages of fungicide IKF-309 180SC (@72g ai, 90g ai, 108g ai and 126 g ai/ha), Azoxystrobin 23% SC (@125g ai/ha) and Tebuconazole 25% WG (@ 187.5g ai/ha) were sprayed over the crop against this disease, three sprays of each chemical with desired concentrations were applied starting from the first appearance of the disease at ten days interval.

Findings: The results showed that IKF-309 180SC @ 126 g ai/ha and IKF-309 180SC @108 g ai/ha significantly reduced the disease and also increased the yield in comparison to other fungicides and untreated control. Among the six meteorological factors temperature (Maximum Minimum) relative humidity (Maximum Minimum) and rainfall were significantly co-related with disease progression.

Conclusion & Significance: In West Bengal condition the powdery mildew could be controlled by three sprayings of IKF-309 180SC @108 g ai/ha. Temperature, relative humidity and rainfall correlated on disease progression but no effect could be found on sunshine hours.

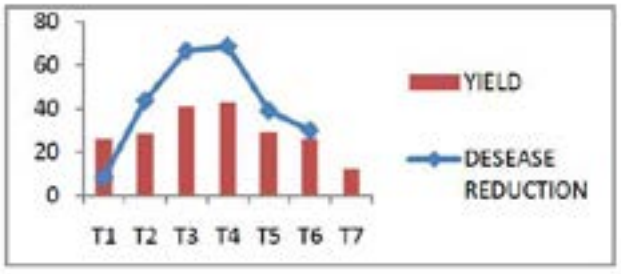

Figure 1 Effect of fungicide on disease severity and yield against powdery mildew of chilli

Recent Publications

1. Anand T et al. (2010) Integrated control of fruit rot and powdery mildew of chilli using the biocontrol agent *Pseudomonas fluorescens* and a chemical fungicide. Biol. Control. 52(1):1-7.

2. Gomez K A and Gomez A A (1984) Statistical Procedures for Agricultural Research. Second Edition. John Wiley & Sons. Pages:1-680.
3. Kumara A et al. (2010) Fungicidal management of early blight of tomato. Indian Phytopathol 63(1):96–97
4. Saxena Amrita, Sarma Birinchi Kumar and Singh Harikesh Bahadur (2016) Effect of azoxystrobin based fungicides in management of chilli and tomato diseases Proc. Natl. Acad. Sci. India Sect: B Biol. Sci. 86(2):283-289
5. Smith R F et al. (1993) Several fungicides control powdery mildew in peppers. Calif. Agric. 53(6):40-43.

Biography

Partha Sarathi Nath pursued his MSc and PhD Degree in Plant Pathology from Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, Nadia West Bengal, India. He is currently a Professor in the Department of Plant Pathology at the same university and has been teaching Plant Pathology to undergraduate and post graduate students for more than thirty two years. He has guided 7 PhD students and 15 MSc students regarding epidemiology and management plant diseases and IDM research. He has so far published 75 papers in national and international journals, 1 book chapter and has published one monograph on plant virus. He served as an Academic Administrator like Head of the Department and Officer In Charge AIC Vegetable Improvement Project. He is a Fellow of the Society of Association for Advancement in Plant Protection.

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