

Induced Defense enzymes in Chilli against *Chilli Veinal Mottle Mosaic Virus* by application of three selected plant extracts

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Abstract

Plants have their own defense activity against pathogen infection. This can be induced by application of both biotic and abiotic inducers. Antiviral compounds present in some plants act as inducers of defense enzymes in plants against pathogens. The study was carried out to determine the induced defense enzymes by application of plant extracts in chilli against *Chilli Veinal Mottle Mosaic virus* (CVMMV). A pot trial was carried out to find the induced defense enzymes. Leaves of *Bougainvillea spectabilis*, *Datura metal*, and *Mirabilis jalapa* were used for this study. Three methods of application viz, seed treatment, foliar spraying, and seed treatment with foliar spraying were used. Peroxidase, polyphenol oxidase, and phenol contents were determined after the treatment. The highest peroxidase and polyphenol oxidase enzyme activity was recorded in the application of *Bougainvillea spectabilis* in all application methods. Application of *Datura metal* showed the highest phenol content. Seed treatment with foliar spraying showed higher polyphenol oxidase enzyme activity than the other two method of applications in all plant extracts tested. Higher phenol content was observed in the foliar spraying application method. Application of all plant extracts tested induced the defense enzyme activity of chilli against CVMMV.

Keywords: Defense enzyme, Peroxidase, Phenol, Plant extract, Polyphenol oxidase

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