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Biocontrol Strategies for Management of Anthracnose in Chilli

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Biocontrol strategy for disease management is a sustainable approach required for restoring the lost homeostasis of the environment. The decline in chilli production worldwide has been recognized due to the diseases associated with crop like anthracnose or fruit rot causing a major loss. Induction of defense response in host plants by the biocontrol agents (BCA) like *Trichoderma* spp. has been of keen interest. The present study deals with the mechanisms adopted by *Trichoderma* isolates, obtained from phyllosphere and rhizosphere, to reframe the defense response of chilli plant challenged by *Colletotrichum truncatum*. BCA treated plants exhibit significant accumulation of phenols under pathogenic challenge, which creates a mechanical barrier in form of enhanced lignification. *Trichoderma* adopts different mechanisms which differ and depend on their origin and site of application of the BCA. While, the phyllospheric *Trichoderma* isolate employs the SAR pathway, the rhizospheric *Trichoderma* strain uses the ISR pathway for eliciting the defense response in the host plant under *C. truncatum* challenge. The study signifies, how BCAs judiciously reprogram the defense network of the host plant to provide robust protection against phytopathogen. The BCAs at the phyllosphere were also found to be more tolerant to fungicides and hence can be advocated for the integrated management strategy involving them for the control on the spread of the disease more efficiently.

Biography:

Richa Raghuwanshi completed her graduation in 1995 from Banaras Hindu University (BHU), India. She was appointed as an Assistant Professor in Department of Botany, MMV, BHU in 2005. Presently she is working as an Associate Professor and pursuing teaching and research in the area of plant-microbe interactions. Her research group has been working on the tripartite association between the soil, microbes and plants to screen potential biocontrol agents and plant growth promoting rhizobacteria to meet the goals of sustainable agriculture. They have also isolated and characterized the bioactive compounds from the biocontrol agents and have done *in silico* studies to find the potential targets of these compounds. She has published 50 research papers, 32 book chapters and has edited 1 book. She has completed 2 projects funded by DBT and DST, Govt. of India and has received 5 awards in conferences for best poster and research article. She has organized 7 conferences at BHU and has also worked at various administrative levels in the University.