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Variability in *Alternaria solani* causing frequent outbreak of early blight disease being a major constraint in potato production in the plains of West Bengal

Amitava Basu and N. Surmina Devi
Bidhan Chandra Krishi Viswavidyalaya, India

The *in vivo* and *in vitro* studies were conducted on potato early blight disease caused by *Alternaria solani* with special emphasis on morphological, cultural, pathogenecity and biochemical aspects. Sensitivity of *A. solani* towards different fungicides and botanical oils was also assessed. Out of ten *A. solani* isolates, AS_2 (Kalyani Incheck Farm, Nadia), AS_4 (Arambagh, Hooghly), AS_8 (Memary, Burdwan) and AS_9 (Garbeta, West Midnapore) were selected as representative isolates on basis of their pathogenecity for this study. The pathogen preferred non synthetic media for its growth than synthetic media. Maximum cultural growth was obtained on PDA, CAM, CMA, OMA, PAM and PCAM. Sporulation was noticed in all the isolates on six tested media except V8JA and NA media. Glucose became the best carbon source for all isolates. Threonine was best nitrogen source for AS_2 and AS_9 isolate whereas, Asparagine for AS_4 and AS_8 isolate. The protein content was significantly enhanced as well as carbohydrate and phenol content was remarkably depleted in infected plants. PAGE analysis for isozyme assay among *A. solani* isolates distinguished themselves on the basis of variation at genetic level. Under *in vitro* condition, Garlic oil (@0.15%) significantly inhibited the mycelial growth and spore germination and under field condition significant disease suppression (15% PDI) and yield increase (260q/ha) were noticed due to application of garlic oil @ 0.15%. Cabrio (Pyraclostrobiun + Mertiram), Antracol (Propineb), Indofil M 45 (Mancozeb) with Tilt (Propiconazole) exhibited maximum inhibition of mycelial growth of *A. solani*. Out of ten fungicides, the field evaluation with Indofil M 45 (Mancozeb) and Cabrio (Pyraclostrobin + Metiram) became most effective in reducing the severity of the disease (10.8% PDI and 17.5% PDI respectively) as well as increasing the total tuber yield (307 q/ha and 287.2 q/ha respectively).

Biography

Amitava Basu joined as Lecturer in the Faculty of Agriculture of Bidhan Chandra Krishi Viswavidyalaya, West Bengal, India in January, 1990, after completion of Ph.D. in Plant Pathology. He Served as Plant Pathology Scientist in All India Co-ordinated Research Project on Potato (I.C.A.R.) from 1997 to 2006. Since January, 2007 he has been associated in the Department of Plant Pathology as full time Professor to teach at undergraduate, Post graduate and Ph.D. level. He has written three books and authored 60 research papers published in the reputed National and International journals. He has attended 15 symposium in India and 4 International symposium in abroad (Mar del Plata, Argentina for oral lecture at Latin American Potato Congress, 2008), France (for oral lecture at International symposium at INRA, 2012), Katmandu, Nepal (for oral lecture at the International Symposium on Climate Change and Livelihood, 2010), Bangkok, Thailand (for oral lecture at International Go-Organic symposium, 2009). He has guided 4 Ph.D. students and 7 M.Sc. students. He is a fellow of the ISMPP, Udaipur, India and Society of Plant Protection Sciences, IARI, PUSA, New Delhi. He has served in the Administrative position as Secretary, UG & PG council of Agriculture faculty, BCKV, as acting Head, Department of Plant Pathology, BCKV. He has also acted as external examiner of SAUs and Viswa Bharati University, Santiniketan, West Bengal. He has expertise in the field of mycology, epidemiology, plant pathology, plant disease management, ecology, sustainable agriculture, host parasitic interaction, diagnostics of plant diseases. He has experience as Principal Investigator of 10 ad hoc research projects funded by MNCs.

mtvbasu@rediffmail.com