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Isolation and Mating Type Determination of *Phytophthora Capsici* and Possibilities of its Biological and Chemical Control

NAZMUL HOQUE¹, WOLFGANG FRIEDT²

¹*Justus-Liebig University Giessen, Rural Sociology and Extension, Germany*

²*Justus Liebig University, Plant Breeding,*

Abstract

Phytophthora capsici was found to be pathogenic in seedlings of brinjal, tomato, cucumber, white gourd, water melon, ribbed gourd, snake gourd, khira and bangi. Collar and root rot diseases caused by *P. capsici* are very common diseases in chilli (*Capsicum annum*) throughout the world including Bangladesh. An investigation was conducted at the laboratory of the Department of Plant Pathology, Bangladesh Agricultural University (BAU), Mymensingh during the period from January to May 2009 to isolate *Phytophthora capsici* from the field soils affected with collar and root rot of chilli and its *in vitro* control using fungicides and plant extracts. Soil and plant samples were collected from affected chilli fields in horticulture centre, Bangladesh Agricultural University, Brahmaputra river side and villages near BAU campus where 42.86 % tissue and 14.26 % soil samples from horticulture centre, BAU; 50 % tissue and 25 % soil samples from Brahmaputra river sides; and 16.66 % samples in both cases (tissue and soil) from villages near BAU campus were involved. All the sides showed positive result for *P. capsici*. The isolated *P. capsici* was found to be heterothallic. The efficacy of four fungicides i.e. Ridomil, Acrobat MZ, Macuprax and Dithane M 45 each with 2 different concentrations (0.1 % and 0.2 %) and plant extracts viz. Alamanda and Garlic with 3 different dilutions of 1:2, 1:3 and 1:4 were evaluated for control of mycelial growth of the organism *Phytophthora capsici* *in vitro* condition. All the different concentrations of fungicides and all the dilutions of plant extracts significantly controlled the mycelial growth of *P. capsici*.

Keywords: Biological, chemical control, collar rot, isolation, mating type, phytophthora, root rot