MORPHOLOGICAL VARIATION AND MOLECULAR CHARACTERIZATION OF *Magnaporthe oryzae* AND SCREENING RICE GERMPLASMS AGAINST RICE BLAST

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Abstract

Experiments were conducted at Mycology Laboratory, Department of Plant Pathology, Sher-e-Bangla Agricultural University, Dhaka from July 2018 to June 2021 to study morphological and molecular characterization of rice blast pathogen *Magnaporthe oryzae* (Mo) that has become a major factor limiting rice yield throughout the world. Initially survey was done in twenty (20) rice growing districts of Bangladesh and rice blast samples (infected leaf, neck and node) were collected. Five different media including Water Agar (WA), Potato Dextrose Agar (PDA), Potato Sucrose Agar (PSA), Rice flour Yeast Agar (RfYA) and Oat Meal Agar (OMA) were used to compare growth of Mo. Colony characters like growth character, color, surface structure and shape of 100 Mo isolates were recorded in OMA. Isolates were pathogenic to US2 and BRRI Dhan 28. In molecular identification (ITS rDNA gene) PCR using primer pairs ITS1/ITS4 yielded approximately 600 bp band of amplification product for representative isolates of *Magnaporthe.* Among the five different growth media highest mycelia growth rate was observed in OMA and lowest in WA. Colony color of all the isolates was whitish, greenish, brownish, white gray, light brown etc. Six (6) resistant germplasms were screened against Mo and would be useful in future rice blast resistant variety development program.

Keywords: variation, *Magnaporthe oryzae oryzae*, screening, rice genotype, resistant, blast