Short Communication

Rapid Mass Culturing Method of Wheat (*Triticum* species) Powdery Mildew Pathogen [*Blumeria graminis* (DC) Speer f.sp. *tritici* Marchal] under Controlled Conditions at Wellington, The Nilgiris, India

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Key words: Wheat, culturing methods, mass production, powdery mildew, seedlings

Citation: Nallathambi P, Uma Maheswari C, Singh DP, Santosh Watpade, Kashyap PL, Aarthy B, Priya Ravikumar, Anju Sharma and Rishav Kumar. 2019. Rapid mass culturing method of wheat (*Triticum* species) powdery mildew pathogen [*Blumeria graminis* (DC) Speer f.sp. *tritici* Marchal] under controlled conditions at Wellington, The Nilgiris, India. *J Mycol Pl Pathol* 49(2): 211-216.

Powdery mildew incited by *Blumeria graminis* f. sp. *tritici* emerged as major disease and significant constraint for wheat cultivation in India (Rana et al 2006; Sharma, 2012). This is one of the top four major diseases of wheat worldwide (Braun et al 1997). The respective biotrophic fungal pathogen (*Bgt*)-*Blumeria graminis* f.sp. *tritici* (DC) Speer (Syn *Erysiphe graminins* DC f.sp. *tritici*) can infect any parts of susceptible wheat species. Infected seedlings succumbed to death at early stage. Mehta (1930) and Singh et al (2009) reported that the wheat cultivation is affected by this disease in North Western plains zone and hills of Southern and Northern region. Mostly, semi-dwarf susceptible varieties favour high incidence of powdery mildew (Bennett 1984, Cunfer 2002). We recorded combined infections of both rusts and powdery mildew pathogens on most of the susceptible genotypes at Wellington (Nallathambi et al 2013; 2018a and 2018b). Effective management could be achieved by spraying fungicides (Upasana Rani et al 2005) but field application is not feasible to cover larger area. Therefore, resistant varieties could contain proliferation of mildew pathogen's population. Hulbet et al (2001) reported that resistant cultivars are effective and environmentally safe method for controlling powdery mildew pathogen. Conversely, identification of resistant varieties becomes cumbersome under field conditions. Artificial inoculations are mandatory to ensure infection while identifying durable resistant varieties against obligate parasites. It is challenging to culture pure inoculum of *B. graminis* f.sp. *tritici* (*Bgt*). Therefore, present investigations were strategically planned to find out a rapid and simple method for recurrent isolation, purification and maintenance of pure colonies of wheat powdery mildew pathogen (*Bgt*). We used the specific and compatible host plants at very early stage of seedling for culturing the pathogen and comprehensive results with practical utility are discussed.

Two types of media (soil and agar) were tested by three methods for growth and development of disease-free seedlings for the purpose of inoculation, purification and multiplication of test pathogen (*Bgt*). In first medium, garden soil (pH 6.5-7.0) along with well decomposed farm yard manure (FYM) were mixed (3:1) and consecutively sterilized at 15 psi for 120 min. in an autoclave for three times. Sterilized soil mixture was filled in mini pots (200 ml paper cups). Seeds (WL 711) were surface sterilized in 70 per cent ethyl alcohol and repeatedly rinsed in sterile distilled water aseptically. Excess moisture was absorbed by using sterilized blotter paper towels and air dried against filtered air blowing out from laminar air flow chamber. In each mini pot, five seeds were sown in