Strain Diversity and Host Range Variability of *Sclerotinia sclerotiorum*, the White Mould Pathogen of Cabbage

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ABSTRACT

White mould, caused by *Sclerotinia sclerotiorum*, is an emerging disease in cabbage growing areas of Sri Lanka. The aim of the study was to estimate the disease incidence in different locations, identify Mycelial Compatibility Groups (MCGs) among isolates and characterize each MCG according to host range variability, morphology and response to different fungicides. Twenty nine *S. sclerotiorum* isolates were collected from seven locations in Nuwara Eliya and laboratory studies were conducted using only one isolate from each location. Estimated damage percentage in each location revealed that disease incidence was high (41%) in Ambewela and Sita Eliya. Isolates collected from Meepilimana-2, Kandapola-1 and 2 and Sita Eliya belongs to MCGI. The isolates from Ambewela, Meepilimana and Kandapola-3, belongs to MCG II, MCG III and MCG IV, respectively. Mean number and mean weight of sclerotia produced by each MCG in artificial culture differed significantly, with the highest mean weight (0.21 g) in MCG III, and the lowest weight (0.13 g) in MCG II. Minimum number of sclerotia was produced by MCG IV with higher weight as their sclerotia were bigger in size. MCG I took one week to produce 22 sclerotia which were significantly lower than MCG III and significantly higher than MCG IV. MCG I and MCG III were highly pathogenic on beans, while those in MCG III and MCG IV showed the highest pathogenicity on potato. Carrot was the highly infected crop by MCGs. Crop loss of cabbage due to white mould varies with the locations and genetic diversity. All MCGs were more or less pathogenic on all tested vegetables and effectively controlled by tested fungicides, namely, (Hymexazole, Fluazinam, Thiophanate methyl + Thiram irrespective of the rates assessed in this study.

Key words: Cabbage, Mycelial compatibility groups, Pathogenicity, *Sclerotinia sclerotiorum*, White mould

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