



**ORIGINAL ARTICLE**

## **Studies on the Presence of Different Mating Types of *Phytophthora infestans* in Nuwara Eliya Sri Lanka**

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### **Abstract**

Late blight, caused by *Phytophthora infestans* is one of the most devastating diseases in potato cultivation. It results in direct crop losses but also causes a considerable amount of cost for disease management. The primary objective of this study was to investigate *P. infestans* mating types in selected areas in Sri Lanka and evaluate the risks associated with mating types. In this experiment potato leaves from a range of late blight severity levels were sampled from infected farmer fields. The pathogen was isolated by leaf culture method and confirmed by microscopic observations. The mating types of each isolate were studied by a Metalaxyl sensitivity test. Mating type A1 has been previously reported in Sri Lanka, but mating type A2 was not reported since 2013. Results of this study reveal that mating type A1 was more prominent than A2 (75% and 50% respectively). A2 was reported only from two fields. These observations prove the presence and emergence of mating type A2 in Sri Lankan potato fields. Gradual increase of detectable A2 mating types suggests a high possibility of pathogen inoculum movement between the locations over time. The presence of both mating types raises the possibility of sexual reproduction and generation of oospores. The ratio of A1: A2: (A1+A2) in the current study was 2:1:1. This could permit genetic recombination with the biological evolution of fungicide-resistant types of *P. infestans* species. This study emphasizes the importance of investigations on the mating types to manage late blight disease in Sri Lankan potato fields.

**Keywords:** Fungicide resistance, Mating type, Oospores, *Phytophthora infestans*, Potato Late blight