ABSTRACT

Adriano Gunawan. NIM.24020122120030. Identification of phytopathogens community (Fungi and Oomycota) on potato plants center in Central Java Province. Ecology and Biosystematics Laboratory, Undergraduate Biology Program, Faculty Science and Mathematics, Diponegoro University. Under the supervisions of Susiana Purwantisari and Ni Kadek Dita Cahyani.

The decline in potato production in Central Java Province caused by phytopathogens during 2023 period is an emerging concern. Molecular approaches, especially DNA metabarcoding, provides a profile of the phytopathogens community through High-Throughput Sequencing (HTS) method. This preliminary study aimed to identify phytopathogens potato plants by targeting Internal Transcribed Spacer 2 (ITS2) as a genetic marker using ITS3-2024F and ITS4-2409R primer pair for kingdom Fungi and phylum Oomycota. This research was conducted in Kejajar District, Wonosobo Regency, Central Java Province which consisted of two samples, diseased and healthy potato leaves. DNA metabarcoding results identify two phytopathogen taxa potato plants that are only found on diseased potato leaves at the genus level, there are genera Aspergillus that caused blight disease and Colletotrichum caused black spot disease Furthermore, this study highlighted the implementation of DNA metabarcoding for management strategies to control phytopathogens potato plants in Central Java Province.

Keywords: DNA metabarcoding; phytopathogens; potatoes