Isolation and Identification of *Trichoderma* Species From the Rhizosphere of Jakfruit (*Artocarpus heterophyllus*)

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ABSTRACT

The anamorphic fungal genus *Trichoderma* (Hypocreales, Ascomycota) is a cosmopolitan soil-borne fungus which is frequently found on decaying wood. It is a filamentous mycoparasitic fungus which can effectively act against many soil-borne plant pathogens. This species can be extensively used for the control of postharvest diseases. It has been used successfully against various pathogenic fungi belonging to various genera such as *Fusarium, Rigidoporus, Phytopthora* and *Sclerotium*. Their antagonist actions may operate according to more than one mechanism of action, such as competition, antibiosis, mycoparasitism, hyphal interactions and enzyme secretion. Apart from being biocontrol agent of soilborne diseases, *Trichoderma* species promotes the plant growth by solubilizing phosphates and micronutrients. They induce plant disease resistance via chemical elicitors, and can be used in creation of transgenic plants. Furthermore, *Trichoderma* strains play an important role in the bioremediation of soil that are contaminated with pesticides and herbicides. The objective of this study was to isolate indigenous *Trichoderma* species as antagonistic microorganisms.

For isolation of *Trichoderma* from rhizospheric soil, the technique reported by Rifai (1969) was used in this study. Decayed root samples were surface sterilized, humidified and mycelia parts were inoculated in to Potato Dextrose Agar medium and purified. Once they were isolated, molecular identification was done using ITS1 and TTS4 universal primers. Sequencing data was blasted using computer based software NCBI. The study resulted in identification of most important *Trichoderma* species and they were *Trichoderma hamatum, Trichoderma harzianum, Trichoderma erinaceum, Trichoderma gamsii, Trichoderma koningiopsis* and *Trichoderma viride.*

Key words: Antagonistic microorganisms, Biological control agents, *Trichoderma* species

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