

Combined Application of Indigenous *Pseudomonas fluorescens* and the AM Fungi as the Potential Biocontrol Agents of Banana *Fusarium* wilt

Authors : Eri Sulyanti, Trimurti Habazar, Eti Farda Husen, Abdi Dharma, Nasril Nasir

Abstract : In this study, combination of some biocontrol agents with different mechanisms was an alternative to improve the effectiveness of the biological control agents. Single and combined applications of indigenous *Pseudomonas fluorescens* and Arbuscular Mycorrhizae Fungi (AM Fungi) isolates were tested to induce the resistance on susceptible Cavendish banana against *F.oxysporum* f. sp. cubense race 4 under greenhouse conditions. These isolates originally isolated from healthy banana rhizosphere at endemic *Fusarium* wilt areas in the centre of production banana in West Sumatra. These researches were conducted with Randomized Block Design with 16 treatments and 10 replications. The treatments were three indigenous isolates of *Pseudomonas fluorescens* (Par1-Cv, Par4-Rj1, Par2-Jt1) and 3 isolates of AM Fungi (G11BuA4, G12BuA6, and G11KeP3). The biocontrol agents were applied as single agents and combination two of them. This study demonstrated that the application of combination biocontrol organisms *Pseudomonas fluorescens* and AM Fungi provided were more effective than single application. The combination of Par1-Cv and G11BuA4 isolates was the most effective to control *Fusarium* wilt and followed by the combination of Par1-Cv and G12BuA6 and Par2-Jt1 and G11P3.

Keywords : pseudomonad *fluorescens* (Pf), arbuscular mycorrhizae fungi (AM Fungi) indigenous isolates, *fusarium oxysporum* f. sp. cubense, soil rhizosphere

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