



Intisari

Trichoderma sp. merupakan salah satu organisme yang banyak dilaporkan sebagai agens pengendali hayati. Penelitian ini bertujuan untuk mengetahui kemampuan *Trichoderma* spp. sebagai *Plant Growth Promoting Fungi* (PGPF) dan sebagai agens pengendali hayati penyakit layu fusarium pada tanaman melon. Pengujian *Trichoderma* spp. sebagai PGPF dilakukan dengan aplikasi *Trichoderma* spp. pada tanaman melon yang dilihat dari parameter agronomis. Pengujian *Trichoderma* spp. sebagai agens pengendali hayati penyakit layu fusarium dilakukan pada tanaman melon yang ditanam pada tanah yang telah diinokulasi *Fusarium oxysporum* f. sp. *melonis*. Hasil penelitian menunjukkan ke-7 isolat *Trichoderma* spp. (PG-1, SWK-1, TH-R.1.2, TH-Prk, TH-JB, TH-LH, dan TH-UH) tidak mampu mempengaruhi pertumbuhan tanaman melon meliputi tinggi tanaman, jumlah daun, berat segar, dan berat kering, maupun panjang akar. Hasil uji pengendalian hayati penyakit layu fusarium menunjukkan *Trichoderma* spp. isolat TH-JB, SWK-1, dan TH-LH mampu menekan insidensi penyakit layu fusarium pada tanaman melon. Perlakuan *Trichoderma* spp. isolat TH-LH menunjukkan insidensi dan intensitas penyakit terendah yaitu sebesar 0,00% walaupun persentase tanaman melon terinfeksi mencapai 100%.

Kata kunci : layu fusarium, melon, PGPF, *Trichoderma*



Abstract

Trichoderma sp. is one of organisms that widely reported as a biological control agent. The aims of this study were to know the ability of *Trichoderma* spp. as Plant Growth Promoting Fungi (PGPF) and biological control agents towards fusarium wilt disease of melon. PGPF assay was done by applying *Trichoderma* spp. to melon seedlings and then the agronomical characters were observed. The ability of *Trichoderma* spp. as biological control was studied by applying *Trichoderma* spp. to melon seedlings planted in soil which had been inoculated with *Fusarium oxysporum* f. sp. *melonis*. The result showed that the 7 isolates of *Trichoderma* spp. (PG-1, SWK-1, TH-R.1.2, TH-Prk, TH-JB, TH-LH, dan TH-UH) did not affect melon growth, i. e plant height, number of leaf, root length, fresh and dry weight. However, *Trichoderma* spp. PG-1 isolate had ability to effect the root growth. The results of biological control study showed that *Trichoderma* spp. TH-JB, SWK-1, and TH-LH isolates were able to suppress the incidence of fusarium wilt of melon. The results showed that the application of *Trichoderma* spp. TH-LH isolate resulted the lowest percentage of disease incidence and severity (0,00 %) although the percentage of infected plant was high (100 %).

Keywords: fusarium wilt, melon, PGPF, *Trichoderma*