

INTISARI

Patogen tular tanah *Fusarium oxysporum* berpotensi menjadi kendala pada produksi tanaman cabai merah. Aplikasi kompos dapat meningkatkan aktivitas mikrobial kompos dan tanah, sehingga tanah menjadi supresif bagi patogen tular tanah dan dapat mendukung pertumbuhan tanaman. Penelitian ini bertujuan untuk mengetahui efektivitas kompos dalam mengendalikan patogenisitas *Fusarium oxysporum* dan perannya pada pertumbuhan tanaman cabai merah. Pengujian dilakukan pada media tanam yang berisi tanah regosol dengan perlakuan kompos steril dan tidak steril. Benih cabai merah varietas Lembang 1 ditanam langsung pada media tanam yang selanjutnya diberi perlakuan inokulasi dan tidak inokulasi *Fusarium oxysporum*. Tanaman cabai merah ditanam hingga berumur 58 hari setelah semai (HSS). Pengamatan selama masa inkubasi meliputi; kejadian penyakit, tinggi, dan berat kering tanaman. Hasil penelitian menunjukkan bahwa penerapan kompos tidak steril dan steril mampu menekan insidensi penyakit layu fusarium pada pertanaman cabai merah berturut-turut sebesar 45% dan 31%. Pemberian kompos tidak steril ke media tanam mampu meningkatkan tinggi tanaman 25-26% dan berat kering 94-115%. Sementara aplikasi kompos steril meningkatkan tinggi dan berat kering tanaman secara tidak signifikan. Berdasarkan hasil tersebut dapat disimpulkan bahwa kompos mampu mengendalikan patogenisitas *Fusarium oxysporum* dan memperbaiki pertumbuhan tanaman cabai merah.

Kata kunci : kompos, *Fusarium oxysporum*, tanah supresif, cabai merah

ABSTRACT

The soil-borne pathogen *Fusarium oxysporum* potentially become a limitation to red chili production. The application of compost can increase the activity of compost and soil microbes, making the soil suppressive to soil-borne pathogens and supporting plant growth. This study aims to determine the effectiveness of compost in controlling the pathogenicity of *Fusarium oxysporum* and its role in the growth of red chili plants. Bioassay was carried out on a planting medium containing regosol soil supplemented with sterile and non-sterile composts. Red chili seeds var. Lembang 1 were sown directly into the planting medium, which was then subjected to *Fusarium oxysporum* inoculation and non-inoculation. The red chili plants were grown until 58 days after sowing (DAS). Observations during the incubation period included disease incidence, plant height, and plant dry weight. The research results showed that both non-sterile and sterile compost applications were able to reduce the incidence of fusarium wilt disease in red chili plants by 45% and 31%, respectively. The addition of non-sterile compost to the planting medium was able to increase plant height by 25-26% and dry weight by 94-115%. Meanwhile, the application of sterile compost increased insignificantly plant height and dry weight. Based on these results, it can be concluded that compost can control the pathogenicity of *Fusarium oxysporum* and improve the growth of red chili plants.

Keyword : compost, *Fusarium oxysporum*, suppressive soil, red chili.