

## INTISARI

Rekayasa mengubah tanah menjadi bersifat supresif bagi patogen tular tanah dapat dilakukan dengan penambahan kompos. Kompos yang supresif ditentukan oleh adanya aktivitas antagonistik dari mikroorganisme kompos. Penelitian ini bertujuan untuk mengetahui efektivitas kompos dalam mengendalikan patogenisitas *F. oxysporum* f. sp. *lycopersici* dan perannya dalam pertumbuhan tanaman tomat. Pengujian dilakukan dengan percobaan pot yang berisi tanah regosol dengan perlakuan kompos steril dan tidak steril. Benih tomat varietas Moneymaker ditanam langsung di media tanam, selanjutnya diberi perlakuan inokulasi dan tidak diinokulasi *F. oxysporum* f. sp. *lycopersici*. Sebagai kontrol, perlakuan tanpa inokulasi juga ditanami tanaman tomat varietas sama. Tanaman tomat ditanam hingga berumur 56 hari. Pengamatan parameter utama selama inkubasi mencakup: kejadian penyakit, tinggi, dan berat kering tanaman tomat. Kejadian penyakit diukur dengan menghitung persentase (%) daun sakit terhadap total daun tanaman. Tinggi tanaman diukur dari permukaan tanah sampai ujung tanaman. Berat kering tanaman ditimbang sebagai berat kering trubus dan akar tanaman. Hasil penelitian menunjukkan bahwa aplikasi kompos tidak steril dan steril mampu menekan kejadian penyakit layu *Fusarium* secara signifikan berturut-turut sebesar 60% dan 41%. Pemberian kompos tidak steril ke media tanam secara signifikan mampu meningkatkan tinggi tanaman tomat hingga 26% dan berat kering sebesar 41%. Penerapan kompos steril memberi efek peningkatan pada tinggi dan berat kering tanaman secara tidak signifikan.

Kata Kunci: *F. oxysporum* f. sp. *lycopersici*, kompos, supresif, tomat.

## ***ABSTRACT***

Soil modification to improve its properties to become a suppressive soil may be conducted by adding a compost to reduce the potential the development of soil-borne disease. Compost with suppressive properties against soil-borne diseases may be attributed to the presence of indigenous microorganisms with antagonistic activities against pathogens. This work was aimed at determining the potential of the compost in controlling pathogenicity of *F. oxysporum* f. sp. *lycopersici* and the influence on tomato plant growth. This study was conducted by using regosol soil in polybags, supplemented with sterile and non-sterile compost. Moneymaker tomato plant variety was directly planted into the polybag, followed by inoculation with *F. oxysporum* f. sp. *lycopersici*. As a control treatment, un-inoculated soil was also used to cultivate tomato plant of the same variety. Tomato plant was cultivated up to 56 days. Main parameters observed during the incubation were: disease incidence, plant height, and dry weight of tomato plants. Disease incidence was calculated by calculating the ratio of infected leaves to all plant leaves. Plant height was measured from the top-soil surface up to the plant tip. Plant dry weight was calculated by combined dry weight of its shoots and roots. The results of this study demonstrated that the use of non-sterile and sterile compost considerably decreased the occurrence of *Fusarium* wilt disease by 60% and 41%, respectively. It was also observed that tomato plant height and dry weight were both significantly increased by the addition of unsterilized compost by 26% and 41%, respectively. In addition, it was noted that sterile compost did not increase plant height and dry weight significantly.

Keyword: compost, *F. oxysporum* f. sp. *lycopersici*, suppressive, tomato.