

## INTISARI

Kompos merupakan bahan pembenah tanah dan memiliki sifat supresif terhadap berbagai patogen tular tanah. Supresifitas ini sangat ditentukan oleh aktivitas antagonistik mikroorganisme kompos. Penelitian ini bertujuan untuk menguji efektivitas kompos dalam mengendalikan patogen tular tanah *Ralstonia solanacearum* dan mempengaruhi pertumbuhan tanaman tomat. Pengujian dilakukan pada percobaan pot yang berisi tanah Regosol yang diperlakukan dengan kompos steril dan tidak steril. Benih tomat var. Moneymaker ditanam langsung pada media tersebut, kemudian pertanaman tomat diinfeksi dan tidak diinfeksi patogen *R. solanacearum*. Parameter utama meliputi insidensi penyakit, tinggi tanaman, dan berat tanaman tomat diamati selama inkubasi 56 hari setelah tanam (HST). Insidensi penyakit diukur dengan menghitung persentase (%) daun layu terhadap total daun tanaman. Tinggi tanaman diamati pada trubus yakni dari permukaan tanah sampai dengan ujung tanaman. Berat tanaman diukur sebagai berat kering trubus dan akar tanaman. Hasil penelitian menunjukkan bahwa aplikasi kompos tidak steril dan steril mampu menekan insidensi penyakit layu *R. solanacearum* pada pertanaman tomat secara signifikan berturut-turut sebesar 67 dan 29%. Penerapan kompos tidak steril meningkatkan tinggi dan berat tanaman tomat secara signifikan, masing-masing berkisar antara 29-34 dan 53-66%. Sementara aplikasi kompos steril dapat meningkatkan baik tinggi maupun berat tanaman tomat secara tidak signifikan.

Kata kunci: Kompos, supresif, *Ralstonia solanacearum*, tomat

### ABSTRACT

Composts are organic soil amendments with known suppressive properties against various soil-borne pathogens. Suppressiveness is usually attributed to the antagonistic activities of compost's microorganisms. This study aimed to examine the effectiveness of compost in controlling soil-borne pathogen, *Ralstonia solanacearum* and the impact on tomato plant growth. Tomato seeds were sown directly into polybag containing soil mixed with sterile and non-sterile composts. The tomato plant was then infected and not infected with the pathogen, *R. solanacearum*. The main parameters including disease incidence, plant height and plant biomass were observed during 56 DAP (days after planting). The incidence of disease was measured by calculating the percentage (%) of wilted leaves to the total leaves. Plant height was observed on shoot from the soil surface to the top of the plant. Plant biomass was measured as dry weight of shoot and root. The results showed that the application of non-sterile and sterile compost was able to reduce significantly the incidence of wilt disease in tomato by 67 and 29%, respectively. The application of non-sterile compost was able to significantly increase the height and weight of tomato, ranging from 29-34 and 53-66%, respectively. Meanwhile, the use of sterile compost could not significantly increase both the height and weight of tomato.

Keywords: Compost, suppressive, *Ralstonia solanacearum*, tomato.