

INTISARI

Ralstonia solanacearum merupakan patogen penyakit layu bakteri pada tanaman tomat yang menurunkan 30-60% produksinya. Kompos supresif merupakan bahan organik yang mengalami dekomposisi oleh mikroorganisme dan mengandung mikroba supresif yang mampu mengendalikan patogen tular tanah. Semakin tinggi populasi mikroba supresif diharapkan mampu meningkatkan supresifitas kompos tersebut terhadap patogen. Penelitian ini bertujuan untuk mengetahui efektivitas kompos diperkaya mikroba supresif dalam mengendalikan patogenisitas *R. solanacearum* dan mendukung pertanaman tomat. Penelitian dilakukan di rumah kaca Departemen Mikrobiologi Pertanian, Fakultas Pertanian, Universitas Gadjah Mada, Yogyakarta. Perlakuan berupa variasi media tanam tomat varietas Servo yakni tanpa kompos, ditambah kompos tidak diperkaya mikroba supresif, ditambah kompos diperkaya bakteri supresif, ditambah kompos diperkaya aktinomistes supresif, dan ditambah kompos diperkaya campuran bakteri dan aktinomisetes supresif. Parameter yang diamati adalah insidensi penyakit layu bakteri, intensitas penyakit, tinggi tanaman, berat kering tanaman, hasil buah tomat, dan populasi mikroba dalam media tanam. Hasil penelitian menunjukkan bahwa aplikasi kompos diperkaya mikroba supresif dapat mengendalikan secara signifikan patogenisitas *R. solanacearum*, mampu secara signifikan meningkatkan tinggi, berat kering, dan hasil tanaman tomat, serta populasi mikroba di rizosfir tanaman tomat dibandingkan dengan perlakuan tanpa kompos dan kompos tanpa diperkaya.

Kata Kunci: kompos diperkaya, mikroba supresif, *Ralstonia solanacearum*, pertanaman tomat

ABSTRACT

Ralstonia solanacearum is a pathogen that causes bacterial wilt in tomato plants, reducing production by 30-60%. Suppressive compost is organic material that has undergone decomposition by microorganisms and contains suppressive microbes capable of controlling soil-borne pathogens. The higher the population of suppressive microbes, would be the greater the compost's suppressiveness against pathogens. This study aims to determine the effectiveness of compost enriched with suppressive microbes in controlling the pathogenicity of *R. solanacearum* and supporting tomato plants. The research was conducted in the green house of the Department of Agricultural Microbiology, Faculty of Agriculture, Gadjah Mada University, Yogyakarta. The treatments consisted of variations in the planting media for tomatoes var. Servo including media without compost, compost without suppressive microbes, compost enriched with suppressive bacteria, compost enriched with suppressive actinomycetes, and compost enriched with a mixture of suppressive bacteria and actinomycetes. The parameters observed were the incidence of bacterial wilt, disease intensity, plant height, plant dry weight, tomato yield, and microbial population in the planting media. The results showed that the application of compost enriched with suppressive microbes significantly controlled the pathogenicity of *R. solanacearum*, significantly increased plant height, dry weight, tomato yield, and the microbial population in the rhizosphere of tomato plants compared to media without compost and unriched compost.

Keywords: enriched compost, suppressive microbes, *Ralstonia solanacearum*, tomato plant