

ABSTRAK

KAJIAN TANAMAN CASSAVA HASIL *INDUCED RESISTANCE* MENGUNAKAN ASAM SALISILAT TERHADAP PENYAKIT LAYU FUSARIUM BERDASARKAN KARAKTER AGRONOMIS DAN FISIOLOGIS

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Cassava (*Manihot esculenta* Crantz) sebagai salah satu tanaman yang banyak dibutuhkan dalam beberapa bidang industri. Produksi cassava sering mengalami penurunan akibat penyakit tanaman salah satu penyakitnya layu fusarium. Asam salisilat pada konsentrasi yang optimal dapat mempengaruhi proses agronomis dan fisiologis tanaman seperti luas daun, berat basah, berat kering, jumlah akar serta kandungan klorofil a, b dan total sehingga dapat meningkatkan laju pertumbuhan dan fotosintesis pada tanaman. Pengendalian penyakit layu fusarium dengan pengimbasan atau *induced resistance* merupakan salah satu pengendalian yang lebih ramah lingkungan dibandingkan dengan pengendalian secara kimia menggunakan fungisida. Tujuan penelitian ini untuk menganalisis karakter agronomis berupa luas daun, jumlah akar, berat segar dan berat kering tanaman hasil *induced resistance* menggunakan asam salisilat yang diinduksi jamur *Fusarium oxysporum* dan menganalisis karakter fisiologis berupa kandungan klorofil a, b dan total hasil *induced resistance* menggunakan asam salisilat yang diinduksi jamur *Fusarium oxysporum*. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) dengan satu faktor, yaitu penambahan asam salisilat dengan konsentrasi 0 ppm, 80 ppm, 100 ppm, 120 ppm dan 140 ppm. Parameter yang diamati meliputi, luas daun, jumlah akar, berat segar, berat kering dan kandungan klorofil a, b dan total. Data yang dihasilkan kemudian dianalisis menggunakan *Analysis of Variance* (ANOVA) dan dilakukan uji lanjut dengan uji Beda Nyata Jujur (BNJ) pada taraf 5%. Hasil penelitian menunjukkan bahwa karakter agronomis tanaman cassava hasil *induced resistance* menggunakan asam salisilat yang diinduksi jamur *Fusarium oxysporum* berupa luas daun, jumlah akar, berat segar dan berat kering yang terbaik pada konsentrasi 100 ppm serta karakter fisiologis tanaman cassava hasil *induced resistance* menggunakan asam salisilat yang diinduksi jamur *Fusarium oxysporum* berupa kandungan klorofil a, klorofil b dan klorofil total yang terbaik pada konsentrasi 100 ppm.

Kata kunci: Cassava, asam salisilat, *fusarium oxysporum*, *induced resistance*.

ABSTRAC

STUDY OF CASSAVA PLANTS RESULTING FROM *INDUCED RESISTANCE* USING SALICYLIC ACID AGAINST FUSARIUM WILT DISEASE BASED ON AGRONOMICAL AND PHYSIOLOGICAL CHARACTER

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Cassava (*Manihot esculenta* Crantz) is a plant that is much needed in several industrial fields. Cassava production often declines due to plant diseases, one of which is fusarium wilt. Salicylic acid at optimal concentrations can influence agronomic and physiological processes in plants such as leaf area, wet weight, dry weight, number of roots and chlorophyll a, b and total content so that it can increase the rate of growth and photosynthesis in plants. Controlling fusarium wilt using *induced resistance* is a type of control that is more environmentally friendly compared to chemical control using fungicides. The aim of this research is to analyze agronomic characters in the form of leaf area, number of roots, fresh weight and dry weight of plants resulting from *induced resistance* using salicylic acid induced by the fungus *Fusarium oxysporum* and analyze physiological characters in the form of chlorophyll a, b content and total induced yield. resistance using salicylic acid induced by the fungus *Fusarium oxysporum*. This research used a Completely Randomized Design (CRD) with one factor, namely the addition of salicylic acid with concentrations of 0 ppm, 80 ppm, 100 ppm, 120 ppm and 140 ppm. Parameters observed included leaf area, number of roots, fresh weight, dry weight and chlorophyll a, b and total content. The resulting data was then analyzed using *Analysis of Variance* (ANOVA) and further tested using the Honestly Significant Difference (BNJ) test at the 5% level. The results of the research showed that the agronomic characters of cassava plants resulting from *induced resistance* using salicylic acid induced by the fungus *Fusarium oxysporum* in the form of leaf area, number of roots, fresh weight and dry weight were the best at a concentration of 100 ppm and physiological characters of induced cassava plants resistance using salicylic acid induced by the *Fusarium oxysporum* fungus in the form of the best chlorophyll a, chlorophyll b and total chlorophyll content at a concentration of 100 ppm.

Key words: Cassava, salicylic acid, *fusarium oxysporum*, *induced resistance*.