ABSTRAK

KEBERHASILAN TUMBUH BIBIT VANILI DARI PENYAKIT BUSUK BATANG PADA BERBAGAI MEDIA TANAM DAN APLIKASI ASAP CAIR

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Vanili merupakan salah satu bahan minyak atsiri bernilai ekonomi tinggi, namun sangat rentan terhadap Penyakit busuk batang yang disebabkan oleh *Fusarium oxysporum*. Penggunaan asap cair tempurung kelapa sebagai bahan alami antimikroba dan media tanam alternatif seperti *cocopeat* dan arang sekam berpotensi menjadi solusi dalam menekan patogen sekaligus mendukung pertumbuhan bibit. Penelitian ini bertujuan untuk mengetahui pengaruh jenis media tanam terhadap pertumbuhan bibit vanili dan infeksi patogen. Penelitian ini dilaksanakan pada Maret-Juni 2025 di Laboratorium Penyakit Tanaman dan Laboratorium Lapang Terpadu, Fakultas Pertanian, Universitas Lampung. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) faktorial 3x4 dengan 3 ulangan. Faktor pertama yaitu media tanam (M): M_0 (tanah dan kotoran hewan kambing), M_1 (*cocopeat*). dan M_2 (arang sekam). Faktor kedua yaitu konsentrasi asap cair (A): A_0 (tanpa asap cair), A_1 (asap cair 7,5%), A_2 (asap cair 12,5%), dan A_3 (asap cair 17,5%). Homogenitas data diuji dengan uji Barlett, sedangkan aditifitas diuji dengan uji Tukey. Selanjutnya dilakukan analisis ragam dan uji lanjut berupa uji DMRT (*Duncan Multiple Range Test*) taraf 5%. Hasil penelitian pengamatan secara *in vivo* menunjukkan bahwa tidak terdapat perbedaan nyata baik dari media tanam, konsentrasi asap cair, maupun interaksinya terhadap pertumbuhan bibit dan perkembangan penyakit. Pengamatan secara *in vitro* menunjukkan bahwa perlakuan asap cair 7,5% menjadi perlakuan terbaik dalam menghambat pertumbuhan koloni *Fusarium oxysporum*.

Kata Kunci: Media Tanam, Busuk Batang, *Fusarium oxysporum*, Asap Cair, Vanili

ABSTRACT

GROWTH SUCCESS OF VANILLA SEEDLINGS FROM STEM ROT DISEASE ON VARIOUS GROWING MEDIA AND LIQUID SMOKE APLICATION

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Vanilla (Vanilla planifolia Andrews) *is an essential oil with high economic value, but is very susceptible to stem rot disease caused by Fusarium oxysporum. The use of coconut shell liquid smoke as a natural antimicrobial agent and alternative growing media such as cocopeat and rice husk charcoal has the potential to suppress pathogen attacks while supporting seedling growth. This study aimed to determine the effect of growing media types on vanilla seedling growth and pathogen infection. The research was conducted from March to June 2025 at the Plant Disease Laboratory and Integrated Field Laboratory, Faculty of Agriculture, University of Lampung. This study employed a 3x4 factorial Randomized Complete Design (RCD) with three replications. The first factor was the growing media (M): M0 (soil and goat manure), M1 (cocopeat), and M2 (rice husk charcoal). The second factor was the liquid smoke concentration (A): A0 (without liquid smoke), A1 (7.5% liquid smoke), A2 (12.5% liquid smoke), and A3 (17.5% liquid smoke). Data homogeneity was tested using the Bartlett test, while additivity was tested using the Tukey test. Subsequently, analysis of variance and further testing with the DMRT (Duncan Multiple Range Test) at a 5% significance level were performed. In vivo results showed no significant differences in seedling growth or disease development due to growing media, liquid smoke concentration, or their interaction. However, in vitro results indicated that the 7.5% liquid smoke treatment was the most effective in inhibiting the growth of Fusarium oxysporum colonies.*

Keywords: Growing Media, System Rot, Fusarium oxysporum, Smoke Liquid, Vanili