**Penghambatan *Rhizoctonia solani* Kühn pada Tanaman Kacang Hijau (*Vigna radiata* (L.) R. Wilczek) dengan Ekstrak Daun Salam (*Syzygium polyanthum* (Wight) Walp.) dan Batang Serai (*Cymbopogon citratus* (DC.) Stapf)**.

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# INTISARI

Penyakit busuk akar akibat infeksi jamur *Rhizoctonia solani* dapat menyerang tanaman kacang hijau. Pencegahan penyakit tersebut dapat dilakukan menggunakan fungisida kimia sintesis, namun dapat menimbulkan pencemaran lingkungan. Penelitian ini bertujuan untuk mengetahui potensi ekstrak daun salam dan batang serai dalam konsentrasi 15% sebagai agen biokontrol penyakit busuk akar tanaman kacang hijau. Tahap penelitian ini meliputi isolasi dan identifikasi *R. solani*, uji patogenisitas, pembuatan ekstrak daun salam dan batang serai, uji skrining fitokimia daun salam dan batang serai, uji perlakuan terhadap kacang hijau secara in vitro dan in vivo, serta analisis data. Isolat jamur yang diperoleh teridentifikasi sebagai *R. solani* berdasarkan karakteristik secara makroskopis dan mikroskopis. Ekstrak daun salam dan batang serai mengandung senyawa antifungi saponin, terpenoid, steroid, flavonoid, alkaloid, fenol, dan tanin. Berdasarkan uji in vitro terhadap pertumbuhan *R. solani*, daya hambat ekstrak daun salam sebesar 2-21% dan ekstrak batang serai sebesar 3-34%. Sehingga secara in vitro ekstrak batang serai lebih baik dalam menghambat pertumbuhan *R. solani*. Berdasarkan uji in vivo terhadap kacang hijau, intensitas serangan *R. solani* pada perlakuan pemberian ekstrak batang serai sebesar 14% dan perlakuan tidak diberi ekstrak sebesar yaitu 20%. Ekstrak batang serai mampu menghambat pertumbuhan *R. solani* pada tanaman kacang hijau lebih efektif 6%.

Kata kunci : Biokontrol, *Rhizoctonia solani*, kacang hijau, daun salam, batang serai

# Inhibition of *Rhizoctonia solani* Kühn on Mung Bean (*Vigna radiata* (L.) R. Wilczek) with Extracts of Bay Leaves (*Syzygium polyanthum* (Wight) Walp.) and Stems of Lemongrass (*Cymbopogon citratus* (DC.) Stapf).

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## ABSTRACT

Root rot disease caused by *Rhizoctonia solani* fungus infection can attack mung bean plants. Prevention of this disease can be done using synthetic chemical fungicides, but this can cause environmental pollution. This research aimed to determine the potential of bay leaf and lemongrass stem extracts in a concentration of 15% as a biokontrol agent for mung bean root rot disease. This research stage includes isolation and identification of *R. solani*, pathogenicity tests, making extracts of bay leaves and lemongrass stems, phytochemical screening tests of bay leaves and lemongrass stems, in vitro and in vivo treatment tests on mung bean, as well as data analysis. The fungal isolate obtained was identified as *R. solani* based on macroscopic and microscopic characteristics. Bay leaf and lemongrass stem extracts contained the antifungal compounds saponins, terpenoids, steroids, flavonoids, alkaloids, phenols and tannins. Based on an in vitro test of the growth of R. solani, the inhibitory power of bay leaf extract was 2-21%, and that of lemongrass stem extract was 3-34%. So, in vitro, lemongrass stem extract is better at inhibiting the growth of *R. solani*. Based on in vivo tests on green beans, the intensity of R. solani attacks in the treatment given lemongrass stem extract was 14% and in the treatment those not given the extract given the extract was 20%. Lemongrass stem extract was able to inhibit the growth of R. solani on green bean plants more effectively by 6%.

Keywords: Biocontrol, *Rhizoctonia solani*, mung bean, bay leaves, lemon grass