

**UJI ANTAGONIS ISOLAT BAKTERI ENDOFIT TERHADAP
PERTUMBUHAN JAMUR PATOGEN *Curvularia lunata* PENYEBAB
PENYAKIT BULIR HITAM PADA TANAMAN PADI**

SKRIPSI

OLEH

AMELIA PUTRI

1510211084



**PROGRAM STUDI AGROTEKNOLOGI
FAKULTAS PERTANIAN
UNIVERSITAS ANDALAS
PADANG
2021**

**UJI ANTAGONIS ISOLAT BAKTERI ENDOFIT TERHADAP
PERTUMBUHAN JAMUR PATOGEN *Curvularia lunata* PENYEBAB
PENYAKIT BULIR HITAM PADA TANAMAN PADI**

ABSTRAK

Bakteri endofit merupakan organisme yang hidup dan mengkolonisasi jaringan tanaman, tanpa menimbulkan kerusakan pada tanaman. Bakteri endofit memberi manfaat kepada tanaman inang dalam meningkatkan laju pertumbuhan serta menekan perkembangan patogen penyebab penyakit tanaman. Penelitian ini bertujuan untuk mendapatkan isolat bakteri endofit non indigenous dan indigenous yang berpotensi dalam menekan pertumbuhan jamur *Curvularia lunata* penyebab penyakit bulir hitam pada padi. Penelitian terdiri dari 2 tahap: 1) Seleksi kemampuan isolat bakteri endofit yang berasal dari tanaman padi, kakao dan jagung terhadap jamur *C. lunata*. Isolat yang digunakan yaitu sebanyak 52 isolat. 2) Uji antibiosis isolat bakteri endofit dan supernatan hasil seleksi tahap pertama menggunakan Rancangan Acak Lengkap (RAL) dengan 22 perlakuan dan 4 ulangan. Hasil penelitian menunjukkan bahwa pada Tahap 1 diperoleh sebanyak 22 isolat bakteri endofit yang berasal dari tanaman padi yang mampu menghambat pertumbuhan jamur *C. lunata*, tidak satupun isolat dari tanaman jagung dan kakao yang mampu menekan pertumbuhan *C. lunata*. Hasil pengujian tahap 2 menunjukkan bahwa isolat bakteri endofit LMA 5 memiliki kemampuan antibiosis paling tinggi dengan nilai persentase daya hambat sebesar 60.52%. Senyawa bioaktif dari supernatan isolat LMA 5 berpotensi menghambat pertumbuhan *C. lunata* dengan nilai efektifitas berat basah sebesar 55.49% dan nilai efektifitas berat kering sebesar 91.80% dibandingkan kontrol.

Kata kunci : Antibiosis, bakteri endofit, *Curvularia lunata*, supernatan



ANTAGONISTIC OF ENDOPHYTIC BACTERIA AGAINST THE PATHOGENIC FUNGI OF *Curvularia lunata* CAUSES OF BLACK GRAIN DISEASE IN RICE PLANTS

ABSTRACT

Endophytic bacteria are organisms that live and colonize plant tissue without causing damage to plants. Endophytic bacteria provide benefits in increasing plant growth and suppressing the development of plant pathogens. This study aims to obtain non-indigenous and indigenous endophytic bacterial isolates that experience the growth of the fungus *Curvularia lunata*, which causes black grain disease in rice. This study aims to bring non-indigenous and indigenous endophytic bacterial isolates that have the potential to suppress the growth of the fungus *C. lunata*, which causes black grain disease in rice. The study consisted of 2 stages: 1) Selection of the ability of 52 endophytic bacterial isolates from rice, cocoa and corn plants against *C. lunata*. 2) Antibiosis test for endophytic bacterial isolates and supernatants from the first stage of selection. Experiments were carried out using a completely randomized design (CRD) with 22 treatments and four replications. The results showed that in stage 1, there were 22 isolations of endophytic bacteria from rice plants that were able to inhibit the growth of *C. lunata*. None of the isolates from corn and cocoa were able to suppress the growth of *C. lunata*. The results of stage 2 showed that the LMA 5 endophytic bacterial isolate had the highest antibiotic ability with an inhibitory value of 60.52%. Bioactive compounds from supernatant LMA 5 isolates inhibited the growth of *C. lunata* with a wet weight effectiveness value of 55.49% and an effective dry weight of 91.80% compared to control.

Keyword : Antibiosis, endophyte bacteria, *Curvularia lunata*, supernatant

