# KEMAMPUAN AKTINOBAKTERI MENEKAN KEPARAHAN PENYAKIT HAWAR DAUN BAKTERI PADA TANAMAN PADI

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## ABSTRAK

Aktinobakteri termasuk Plant Growth Promoting Rhizobacteria (PGPR) yang hidup di daerah rizosfir tanaman. Interaksi Aktinobakteria dengan tanaman dapat memberi manfaat bagi tanaman diantaranya meningkatkan pertumbuhan dan menekan perkembangan penyakit tanaman baik secara langsung maupun tidak langsung. Tujuan dari penelitian ini yaitu untuk memperoleh isolat Aktinobakteri yang berpotensi menekan keparahan penyakit Hawar Daun Bakteri (HDB) dan meningkatkan pertumbuhan tanaman padi. Penelitian ini menggunakan dilakukan menggunakan metode eksperimen dalam Rancangan Acak Lengkap (RAL). Penelitian terdiri atas 17 perlakuan dan 3 ulangan yang terdiri atas 15 isolat Aktinobakteri, kontrol negatif (tanpa Aktinobakteri + patogen), dan kontrol positif (tanpa Aktinobakteri dan tanpa patogen). Aplikasi Aktinobakteri ($10^{-6}$sel/ml) pada padi dilakukan 2 kali, yaitu melalui perendaman benih sebelum semai dan perendaman akar sebelum bibit dipindah tanam. Inokulasi patogen *Xanthomonas oryzae* pv. o*ryzae* dilakukan pada saat tanaman berumur 45 hari setelah tanam. Variabel yang diamati adalah yaitu masa inkubasi penyakit, kejadian dan keparahan penyakit serta *Area Under Disease Progress Curve* (AUDPC) penyakit HDB, serta pertumbuhan tanaman padi. Hasil penelitian diperoleh perlakuan isolat Aktinobakteri Act-SK2 berpotensi menekan keparahan penyakit HDB sebesar 86,322% dan AUDPC sebesar 43,610. Isolat Aktinobakteri tidak berpengaruh terhadap pertumbuhan tanaman padi.



Kata kunci : **Aktinobakteri, padi, Penyakit HDB, *Xanthomonas oryzae* pv. *Oryzae***

# ABILITY OF ACTINOBACTERIA TO REDUCE THE SEVERITY OF BACTERIAL LEAF BLIGHT IN RICE


## ABSTRACT

Actinobacteria include Plant Growth Promoting Rhizobacteria (PGPR), which live in the rhizosphere of plants. Actinobacteria interactions with plants can benefit plants, including increasing growth and suppressing the development of plant diseases, both directly and indirectly. This study aimed to obtain actinobacterial isolates that have the potential to reduce the severity of Bacterial Leaf Blight (BLB) and increase the growth of rice plants. This research was carried out using the experimental method in a completely randomized design (CRD). The study consisted of 17 treatments and three replications consisting of 15 isolates of actinobacteria; negative controls (without actinobacteria + pathogen), and positive controls (without actinobacteria and pathogens). Actinobacteria ($10^{-6}$ cells/ml) were applied to rice twice, namely by soaking the seeds before sowing and soaking the roots before transplanting the seedlings. Inoculation of the pathogen *Xanthomonas oryzae* pv. *oryzae* was carried out when the plants were 45 days after planting. The variables observed were the disease's incubation period, the incidence and severity of the disease and the Area Under the Disease Progress Curve (AUDPC) of BLB disease, and the growth of rice plants. The results showed that Actinobacterial isolate treatment Act-SK2 could reduce the severity of BLB by 86,322% and AUDPC by 43,610. Actinobacteria isolates did not affect the growth of rice plants.



Key words: **Actinobacteria, rice, BLB disease, *Xanthomonas oryzae* pv. *oryzae***