

ABSTRAK

MARTHA AULIA WARDIANI, 2021. ISOLASI BAKTERI-BAKTERI ENDOFIT PADA DAUN TANAMAN SUKUN (*Artocarpus altilis*) YANG BERPOTENSI MENGHAMBAT PERTUMBUHAN *Streptococcus mutans* ATCC 25175, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI SURAKARTA. Dibimbing apt. Vivin Nopiyanti, M.Sc. dan Desi Purwaningsih, M.Si.

Bakteri endofit adalah bakteri yang hidup dalam jaringan tanaman, bersifat tidak patogen. Bakteri endofit menghasilkan senyawa bioaktif yang karakternya mirip inangnya. Senyawa bioaktif diperoleh dengan cara mengisolasi dari bakteri endofit. Daun tanaman sukun memiliki khasiat sebagai antibakteri. Penelitian bertujuan untuk memperoleh isolat-isolat bakteri endofit dari daun tanaman sukun yang menunjukkan kemampuan antibakteri terhadap *Streptococcus mutans*.

Penelitian dilakukan dengan mengisolasi bakteri endofit kelompok A dari daun muda, masih segar, tidak layu dan bebas hama penyakit; kelompok B dari daun yang cukup tua, yang segar, tidak layu, bebas hama penyakit. Isolate difermentasikan selama 74 jam. Pemisahan antara supernatan dan biomassa menggunakan sentrifuge 5.000 rpm selama 40 menit. Supernatan yang dihasilkan dilakukan uji aktivitas antibakteri dengan metode difusi cakram, kontrol negatif berupa cakram yang direndam dalam BHI steril dan kontrol positif menggunakan amoxicillin. Area jernih mengindikasikan adanya hambatan pertumbuhan mikroorganisme oleh agen antimikroba pada permukaan media agar.

Hasil penelitian menunjukkan daun tanaman sukun (*Artocarpus altilis*) dapat diisolasi bakteri endofit dan isolate bakteri endofit yang diperoleh memiliki potensi menghambat pertumbuhan *Streptococcus mutans* ATCC 25175. Kelompok A memiliki diameter rerata sebesar 8,74 mm kekuatan daya antibakteri dalam kategori sedang dan kelompok B memiliki diameter rerata sebesar 11,04 mm kekuatan daya antibakteri dalam katagori kuat.

Kata Kunci : Mikroba endofit, *Artocarpus altilis*, *Streptococcus mutans*, antibakteri.

ABSTRACT

MARTHA AULIA WARDIANI, 2021. ISOLATION OF ENDOPHYTE BACTERIA ON BREADFRUIT (*Artocarpus altilis*) LEAVES THAT POTENTIALLY INHIBITED THE GROWTH OF *Streptococcus mutans* ATCC 25175, SKRIPSI, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA. Dibimbing apt. Vivin Nopiyanti, M.Sc. dan Desi Purwaningsih, M.Si.

Endophytic bacteria are bacteria that live in plant tissues and are non-pathogenic. Endophytic bacteria produce bioactive compounds whose characteristics are similar to their host. The bioactive compounds were obtained by isolating them from endophytic bacteria. Breadfruit leaves have antibacterial properties. The aim of the study was to obtain isolates of endophytic bacteria from breadfruit leaves which showed antibacterial activity against *Streptococcus mutans*.

The research was conducted by isolating group A endophytic bacteria from young leaves, still fresh, not wilted and free of pests and diseases; group B from leaves that are quite old, fresh, not wilted, free of pests and diseases. The isolate was fermented for 74 hours. The separation between the supernatant and biomass using a 5,000 rpm centrifuge for 40 minutes. The resulting supernatant was tested for antibacterial activity using the disc diffusion method, negative control in the form of discs immersed in sterile BHI and positive control using amoxicillin. The clear area indicates the inhibition of the growth of microorganisms by antimicrobial agents on the surface of the agar medium.

The results showed that the leaves of the breadfruit plant (*Artocarpus altilis*) could be isolated from endophytic bacteria and the isolates obtained had the potential to inhibit the growth of *Streptococcus mutans* ATCC 25175. Group A had an average diameter of 8.74 mm, the antibacterial power was in the medium category and group B had a diameter of 8.74 mm. an average of 11.04 mm antibacterial power in the strong category.

Keywords : Endophytic microbes, breadfruit plant leaves, *Streptococcus mutans*, antibacterial.