

ABSTRAK

ANASTASYA CINDI SIHITE, NIM 4183220050 (2022). Isolasi dan Identifikasi Bakteri Endofit Berpotensi Sebagai Penghasil Enzim Protease dari Daun Tanaman Sintrong (*Crassocephalum crepidioides* (Benth.) S. Moore)

Isolasi bakteri endofit dari daun tanaman sintrong (*Crassocephalum crepidioides* (Benth.) S. Moore) yang diambil dari perkebunan di Desa Batukarang, Kecamatan Payung, Kabupaten Karo. Bakteri endofit merupakan organisme hidup yang berukuran mikroskopis yang hidup di dalam jaringan tanaman, akar, daun, batang, dan buah selama periode tertentu dari siklus hidupnya tanpa memberikan efek negatif pada inangnya. Penelitian ini bertujuan untuk mengetahui jenis - jenis bakteri endofit yang terdapat pada daun tanaman sintrong (*Crassocephalum crepidioides* (Benth.) S. Moore) dan potensi bakteri endofit sebagai penghasil enzim protease. Isolasi bakteri endofit dari daun tanaman sintrong menggunakan metode *plant piece* dan sterilisasi permukaan menggunakan perendaman sampel. Koloni tunggal yang didapatkan diidentifikasi morfologi koloninya, pewarnaan gram, dan uji biokimia. Hasil penelitian menunjukkan bahwa terdapat empat isolat tunggal endofit dari daun tanaman sintrong dengan identifikasi mikroskopis isolat bakteri A1 berbentuk basil dan bergram positif, isolat bakteri A2 berbentuk coccus dan bergram positif, isolat bakteri A3 berbentuk basil dan bergram positif, dan isolat bakteri A4 berbentuk coccus dan bergram positif. Dari keempat isolat terdapat dua isolat bakteri memiliki aktivitas enzim protease yang ditandai dengan adanya zona bening disekitar koloni bakteri.

Kata Kunci: *Bakteri endofit, daun tanaman sintrong, enzim protease.*

ABSTRACT

ANASTASYA CINDI SIHITE, NIM 4183220050 (2022).
**Isolation and Identification of Potential Endophytic Bacteria as Producing
Protease Enzymes from Leaves of Sintrong Plant (*Crassocephalum
crepidioides* (Benth.) S. Moore)**

Isolation of endophytic bacteria from the leaves of the sintrong plant (*Crassocephalum crepidioides* (Benth.) S. Moore) taken from plantations in Batukarang Village, Payung District, Karo Regency. Endophytic bacteria are living organisms of microscopic size that live in plant tissues, roots, leaves, stems and fruits during certain periods of their life cycle without negatively affecting their hosts. This study aims to determine the types of endophytic bacteria found in the leaves of the sintrong plant (*Crassocephalum crepidioides* (Benth.) S. Moore) and the potential of endophytic bacteria as producers of protease enzymes. Isolation of endophytic bacteria from leaves of sintronic plants using the plant *piece method* and surface sterilization using sample immersion. The single colonies obtained were identified for colony morphology, gram staining, and biochemical tests. The results showed that there were four endophytic single isolates from the leaves of the sintrong plant with microscopic identification of the bacilli-shaped and gram-positive bacterial isolate A1, bacterial isolate A2 was coccus shaped and gram positive, bacterial isolate A3 was in the form of bacilli and was gram positive, and bacterial isolate A4 was in the form of coccus and gram positive. Of the four isolates, two bacterial isolates had protease enzyme activity as indicated by the presence of a clear zone around the bacterial colony.

Keywords: *Endophytic bacteria, leaves of sintrong plant, protease enzyme.*

