

## Uji Aktivitas Antibakteri Isolat *Streptomyces* yang Berasosiasi dengan Rizosfer Rumput Teki (*Cyperus Rotundus*) dari Dataran Tinggi Cemoro Sewu

### Antibacterial Activity of *Streptomyces* Isolates Associated with Rhizosphere of Purple Nut Sedge (*Cyperus rotundus*) from Cemoro Sewu Plateau

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**Abstract:** *Streptomyces* is known as one of the member of Actinomycetes, many members of them found in the rhizosphere and they are the largest genus of antibiotic producers. The aim of this research was to know the antibacterial activity of *Streptomyces* isolates associated with Purple Nut Sedge (*Cyperus rotundus*) from the Cemoro Sewu plateau. This research was explorative. The soil sample taken from rhizosphere of Purple Nut Sedge in the Cemoro Sewu plateau. The research steps include: 1). Isolation of *Streptomyces* on RHA and SCA media, 2). Purification of the isolates, 3). Gram-stain procedure and 4). Isolates were screened for the ability to produce antibiotic by using agar-block method, with two test bacteria, *Staphylococcus aureus* and *Esherichia coli*. The result of the research showed that among 58 *Streptomyces* isolates which inhibited the test bacteria, 21 isolates (36.31%) could inhibit the growth of *Staphylococcus aureus* with diameter of inhibition zone ranging from 8 to 26 mm and only one isolate (1.72%) which is able to inhibit the growth of *Esherichia coli*, namely CRC 24 with diameter of inhibition zone 8 mm. Based on the results of Gram-stain procedure toward 20 isolates that can inhibit the test bacteria showed that they are the members of *Streptomyces*, with special character branching stems, gram positive and purple. Conclusions can be drawn from this research that as much as one isolate from 21 isolates that could inhibit the growth of *Staphylococcus aureus* is included in the strong inhibition category, namely CRC 32 with diameter of the inhibition zone 26 mm. A total of 8 isolates were in moderate category of inhibition, with diameter of inhibition zone between 16 to 25 mm. And 12 isolates in weak category of inhibition, with diameter of inhibition zone about 7-15 mm.

**Keywords:** *Streptomyces*, Antibakteria, *S. aureus*, *E. coli*, Cemoro Sewu plateau

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