

ABSTRACT

Aira Fathimah Az Zahra, 24020221140056. **Antibacterial Activity Test of Endophytic Fungal Culture Extract of Akar Kuning (*Arcangelisia flava* L. Merr) Against *Escherichia coli* dan *Staphylococcus aureus*.** Under the guidance of Sri Pujiyanto and Andria Agusta.

Bacterial resistance to antibiotics has become an urgent global health problem, prompting the search for new antibacterial sources from natural organisms. This study aims to determine the potential antibacterial activity of endophytic fungal culture extracts from yellow root (*Arcangelisia flava* L. Merr). Endophytic fungal isolates from roots, stems, and leaves were cultivated in GYP media for 21 days, then extracted by liquid-liquid method using ethyl acetate. Analysis was carried out qualitatively and descriptively, including thin layer chromatography (TLC) bioautography and microdilution method for determining Minimum Inhibitory Concentration (MIC). The results showed that of the ten isolates tested, isolate 10TBt-1 (*Phomopsis* sp.) had the strongest antibacterial activity against *Escherichia coli* and *Staphylococcus aureus* with an MIC value of 8 µg/mL (strong category), capable of inhibiting gram-positive and gram-negative bacteria so that it is classified as a broad spectrum. Isolate 10TDn-3 (*Aspergillus* sect. *Terrei*) showed moderate activity (MIC 256 µg/mL), while other isolates showed weak activity (MIC >256 µg/mL). Differences in antibacterial strength were influenced by genetic variation between isolates, differences in the type and amount of secondary metabolites produced, and the distribution of compounds in the media and biomass. TLC bioautography analysis confirmed inhibition zones for certain compounds. This study proves the potential of endophytic fungi *A. flava*, especially *Phomopsis* sp., as a new antibacterial source to overcome bacterial resistance.

Keywords: *Arcangelisia flava*, antibacterial, TLC bioautography, Minimum Inhibitory Concentration, endophytic fungi, *Phomopsis* sp.