

**ANTIMICROBIAL ACTIVITY OF *Manihot esculenta*'s
(TAPIOCA) SEDIMENTS**

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ABSTRACT

ANTIMICROBIAL ACTIVITY OF *Manihot esculenta*'s (TAPIOCA) SEDIMENTS

The ability to find new and improved antimicrobial agents deriving from natural sources is deemed worthy in the recent years to combat the increasing number of pathogenic microbial infections. The production of *Manihot esculenta* into food products bares a significant amount of wastage in the industry which leads to pollution from the sediments produced. Hence, sediments of *Manihot esculenta* from productions can be utilized to identify its antimicrobial properties for waste reduction purposes. A research was conducted on *Manihot esculenta* sediments retrieved from a chips factory at Felda Jelai 3, Gemas in Negeri Sembilan by determining the antimicrobial activity against *Escherichia coli*, *Salmonella*, *Staphylococcus aureus*, *Candida albicans* and *Aspergillus*. From this research, a wider knowledge on *Manihot esculenta*'s sediments' antimicrobial properties could be obtained. Objectively, identification and comparisons of the sediments' antimicrobial activity against the five previously stated microorganisms were conducted. Three methods were carried out to analyse the antimicrobial activity from the sediment extract which are disc diffusion, minimum inhibition concentration (MIC) and time kill study. Findings from disc diffusion implied the greatest zone of inhibition recorded was *C. albicans* at 19 ± 0.66 mm, followed by *S. aureus* at 14 ± 0.00 mm while *Salmonella* being the least at 12 ± 0.95 mm. However, both *Escherichia coli* and *Aspergillus* did not exhibit any inhibition zones. These highest portrayals of inhibition zones were then brought to MIC, and the least concentration to show less turbidity was at 25 mg/ml for both. As for time kill study, the amount of time required to inhibit microbial growth was found to be at 4 hours for both cases. The results obtained are evidences that the antimicrobial properties from extract of *Manihot esculenta*'s sediments could be further exploited as a source of antimicrobial drug to be utilized for the benefits of future medicinal purposes.