A COMPARATIVE STUDY OF *Phaleria macrocarpa* (Scheff.) Boerl FRUITS AND LEAVES WITH RELEVANCE TO PHYTOCHEMICAL CONSTITUENTS AND ANTIBACTERIAL ACTIVITY

LIZAWATI SARAN BARU @ PETER

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ABSTRACT

A COMPARATIVE STUDY OF *Phaleria macrocarpa* (Scheff.) Boerl FRUITS AND LEAVES WITH RELEVANCE TO PHYTOCHEMICAL CONSTITUENTS AND ANTIBACTERIAL ACTIVITY

Increased bacterial resistance and adverse synthetic drug side effects cause researchers to turn to plants as an alternative because plants have smaller side effects. *Phaleria macrocarpa* has been traditionally used as medication in Malaysia and Indonesia for decades. It is important to acquire information on the phytochemical and antibacterial activity of *P. macrocarpa* in Sabah as less study has been reported. Maceration method was used to extract the phytochemical content of the plant by using methanol and ethanol as a solvent. Whereas, standard phytochemical test was used to identify the presence of phytochemicals in the extract. The phytochemical study showed fruit extracts contained alkaloid, phenols, tannins, flavonoids, terpenoids, protein and coumarins, while leaves extracts contained phenols, tannins and coumarins. This shows that, dried fruits have more phytochemicals constituents than fresh fruits; fresh leaves extract and dried leaves have the same number of phytochemicals; ethanolic fruits and leaves extract possessed more phytochemical than methanolic fruit and leaves extract. For antibacterial activity, *Salmonella enterica* (ATTC 14028) is resistance to all the fruits and leaves extracts; fruits extracts does not have antibacterial activity except for methanolic dried fruits extract, which has weak antibacterial activity against *Escherichia coli* (ATCC 11229) and *Staphylococcus aureus* (ATCC 43300); *Escherichia.coli* (ATCC 11229) and *Staphylococcus aureus* (ATCC 4330) are resistance to leaves extract; ethanolic leaves extract have weak antibacterial activity toward *Bacillus subtilis* (ATTC 6633); methanolic leaves extract have weak antibacterial activity toward *Bacillus subtilis* (ATCC 6633), *Escherichia coli* (ATCC 11229) and *Staphylococcus aureus* (ATCC 4330). Based on the antibacterial activity, methanolic extracts have more antibacterial activity than ethanolic extracts; dried extracts have more antibacterial activity than fresh extracts; leaves extracts have more antibacterial activity compared to fruits extracts; fruits and leaves extracts have prominent antibacterial activity toward gram-positive than gram-negative bacteria. This study suggest that *P. macrocarpa's* fruits and leaves have the potential to be used as medication. More studies should be done to obtain more information on this plant, especially in Sabah.