

Paper 152 – Sciences

PHYTOCHEMICAL COMPOSITION AND ANTIMICROBIAL EFFICACY OF ACHYRANTHES ASPERA STEM AND ROOT EXTRACTS: AN IN VITRO STUDY

Devann Ross Abayon, Jopert Rey De la Cruz, Danielis Hutabarat, Milrose Parulan, Jolly Balila, Angel Grace Bingcang, Ardie M. Tayongtong and Narcar Hernandez

Adventist University of the Philippines

MIL_ILY@yahoo.com

ABSTRACT

The aim of this study was to investigate the antimicrobial efficacy of *Achyranthes aspera* (Prickly Chaff) and to study their effectiveness against the test microorganisms. *Escherichia coli*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa* were selected as test microorganisms. The *Achyranthes aspera* (Prickly Chaff) plants were gathered by the researchers at the Adventist University of the Philippines campus. The roots and stem of *Achyranthes aspera* were dried using a multi-commodity heat pump dryer. The dried powdered roots and stem were sent to the Chemical and Testing Division of the Department of Science and Technology (DOST) for extraction. The generated root and stem extracts were tested for phytochemical analysis and antimicrobial activity. The antimicrobial testing conducted to test the inhibitory activity of the *Achyranthes Aspera* roots and stem extract on the three microorganisms using the Disc agar diffusion method or Kirby – Bauer Test. Levofloxacin and Clindamycin 2 ug/ml were used as positive control of standard drugs. The results of the phytochemical test showed the following plant constituents: flavonoids and triterpenes which are the most abundant, followed by saponins and glycosides which showed the moderate amount and lastly, sterols, tannins, and alkaloids which revealed traces in *Achyranthes Aspera* (Prickly Chaff) roots and stem extract. For the antimicrobial activity test, the results revealed that the *Achyranthes Aspera* (Prickly Chaff) roots and stem extract produced a zone inhibition of 10 mm and complete inhibitory activity with mild reactivity against *Escherichia coli* and *Pseudomonas aeruginosa*. However, it produced no inhibitory activity with no reactivity against *Staphylococcus aureus*.

Keywords: Phytochemical Composition, Antimicrobial Efficacy, *Achyranthes Aspera*

