



## **Phytochemical Profile of *Saribus rotundifolius* (Anahaw) Crude Extract Found in the University of Eastern Philippines**

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### **Authors' contributions**

This work was carried out in collaboration among all authors. Authors FMD, KML and MCV designed the study, performed the statistical analysis and wrote the protocol. Authors FMD, FMT, JLB, RAA and TJC managed the analyses of the study and wrote the first draft of the manuscript. Authors MCA, MJS and AUF managed the literature searches. All authors read and approved the final manuscript.

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### **ABSTRACT**

Phytochemical profiling focuses on the determination of the secondary metabolite present on a sample.

**Aims:** In this research, a phytochemical profiling was done in *Saribus rotundifolius* (Anahaw) leaves and fruit crude extracts.

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**Methodology:** This study determines the secondary metabolites; alkaloid, tannin, flavonoid, cardiac glycoside, saponin, and terpenoid. The samples were cut into pieces and was submerged in an ethanol solution for the extract of crude extract and undergo a rotary evaporator for the separation of the ethanol solvent.

**Results:** The finding showed that the anahaw leaves and fruit crude extract contains secondary metabolites present in both leaves and fruit crude extracts, that can be used in pharmaceutical and drug development, this includes an anti-microbial potential.

**Keywords:** *Saribus rotundifolius*; crude extract; phytochemical profile; tannin; cardiac glycoside; saponin; terpenoid.

## 1. INTRODUCTION

Anahaw is a non- timber forest species with great economic potentials. The palm grows widely throughout the Philippines. Anahaw grows in a wide range of climate but prefers humid and moist conditions. As a tropical palm, it requires warm temperature and prefers clay and clay-loam soils. Its orbicular, fan-shaped leaves or fronds and pleated leaf blades are good roofing and fan-making materials while its trunks are preferred for constructing low- cost houses, particularly in rural areas [1]. It is considered as an ornamental and medicinal plant and its nuts are eaten when young and green [2].

Evidence suggests that compounds, especially from natural sources are capable of providing protection against free radicals [3]. The study concluded that natural resources, such as plant samples, contain active components – antioxidants and antimicrobial – that can be use in the development of drugs or its coating.

*Livistonia chinensis*, *A. catechu* and *Saribus rotundifolius* palm nuts contain high number of polyphenols and demonstrated notable antioxidant activity in the studied four models and broad spectrum antibacterial and antifungal activities against selected human isolates [2].

The phytochemical screening indicated varying number of alkaloids, saponins, cardiac glycosides, terpenes, deoxy sugars, anthraquinones, phenols, flavonoids and phlobatannins in the palm extracts. The terpenes and saponins content were relatively high in *Saribus rotundifolius* and *Livistonia chinensis* respectively; tannins in all three samples. Reducing sugars were not detected in the nut extracts. Currently, several compounds have been isolated and characterized from *A. catechu*, such as alkaloids, tannins, flavones, triterpenes, steroids and fatty acids [4].

In this research, anahaw leaves and fruit crude extracts were subjected to phytochemical profiling to determine the secondary metabolites that can be used in pharmaceutical and drug development.

## 2. METHODOLOGY

The researchers collected the anahaw sample in the vicinity of the University of Eastern Philippines, Catarman, Northern Samar during the months of September to November where the plant sample is abundant and yielded its fruits. The researchers collected the young leaves and young fruits of the sample. After it was washed it was air-dried in an ambient room for five (5) days to remove the excess water. After it was dried, it was grinded into smaller pieces and was soaked in an ethanol solution (95%) for three (3) days in an ambient room temperature. A rotary evaporator with a temperature of 45°C±5 was used to isolate the crude extracts from the parts of the plant. It was then subjected for a phytochemical profiling to know if the plant sample contains alkaloids, tannin, flavonoid, cardiac glycoside, saponin, and terpenoids [5].

## 3. RESULTS AND DISCUSSION

The following data revealed the secondary metabolites present in the anahaw plant sample. In the six phytochemical profile tests done with anahaw, four (4) phytochemical profile yielded a positive result.

Tannins are water-soluble polyphenols that are present in many plants. They are responsible for the decreases in feed intake, growth rate, feed efficiency, net metabolizable energy, and protein digestibility [6]. Cardiac glycoside has been used to treat cardiovascular disorders for they possess anticancer activities [7]. Saponin possess anti-tumorigenic effect that can be used in combating the spread of tumor [8]. Terpenes or terpenoid are considered to have a wide range of medicinal uses among are antiplasmodial activity, antiviral property, anticancer, and antidiabetic reagents [9].

**Table 1. Phytochemical test of *Saribus rotundifolius* (Anahaw) leaves and fruit crude extracts**

Samples	Test conducted	Leaf crude extract	Fruit crude extract
Alkaloid	Dragendorff's reagent and Mayer's reagent	negative	negative
Tannin	Gelatin Test	positive	positive
Flavonoid	Shinoda's Test	negative	negative
Cardiac glycoside	Keller-Killani test	positive	positive
Saponin	Foam Test	positive	positive
Terpenoid	Salkowski test	positive	positive

The presence of tannin, cardiac glycoside, saponin, and terpenoid is in consonance with the study of Essien et al. [2]. The presence of these secondary metabolites indicate that there is an active component within the *S. rotundifolius* (Anahaw) leaves and fruit crude extracts that needs to be explored and elucidated with the use of H- and C-NMR. The presence of terpenes indicates a strong amount of antioxidant present on the plant sample.

#### 4. CONCLUSION

Anahaw, a round-leaf fountain palm contains secondary metabolites that can be used in pharmaceutical or drug development. The leaves and fruit sample tested positive for tannin, cardiac glycoside, saponin, and terpenoid. The positive indication of these secondary metabolites suggests that anahaw has a promising properties that could be developed and research further. It is suggested that a robust profiling must be done to the plant sample to quantify the active components present on it through the elucidation in H- and C-NMR and also the nutraceutical profile of the plant sample.

#### CONSENT

It is not applicable.

#### ETHICAL APPROVAL

It is not applicable.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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