

# Phytochemical Screening of *Justina Gendarussa* Burm F. (Panhault) Leaf Extract

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## ABSTRACT

This study was conducted to determine the secondary metabolites present in the leaf extract of *Justina gendarussa* Burm. F. locally known as Panhault. These metabolites include alkaloids, anthraquinones, leucoanthocyanin, phenolic compound, saponin, steroid, tannin, and terpenoids. Results of the study showed that there was a 30% of extract yielded for every 100 grams of plant leaf. Physical properties of the extract of Panhault leaves showed that it has a 103.30°C boiling point, brown color and a pleasant odor, its density was 1.02g/mL and a neutral pH. Further physical test showed it is miscible in methanol and water, and immiscible in chloroform and dichloromethane which signifies that the Panhault leaves extracts has a polar components. Finally phytochemical tests of the Panhault extract showed the confirmed positive results in alkaloid and saponin only, other secondary metabolites mentioned here in this study were deemed negative.

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**Keywords:** Panhault, *Justina gendarussa* Burm F., phytochemical screening

## INTRODUCTION

Here in our country, and in our environment, we can see various kinds of plants. We see trees that bear fruits, shrubs that are ornamentals, vines that can be a source of food and herbs that helps create new medicines and remedies to people's health problems. Most of the plants that grow on our surroundings are ignored especially to those that are not well planted or wild. But what we do not know is that, some of these unnoticed plants are herbs or shrubs, that is can be used to cure or prevent certain kinds of diseases such as the *Justina gendarussa* Burm. F. Commonly known to us Waraynons as "Panhault" or "Kapanitulot" in Tagalog.

## METHODOLOGY

### Preparation of Panhault Leaf Extracts

*Justina gendarussa* Burm. F. (Panhault) leaf extracts were gathered by locating places where Panhault plants are present. Then, by using a scissor it was trimmed from its stem to separate the leaves. Young leaves were used.

After gathering of the leaves, the plants were soaked in hexane for 3 days. The extracted juice from the leaves was distilled to eliminate the hexane solvent. The collected distill and extract was put into a clean bottle, ready for experiment.

### Test for the presence of alkaloid

In this test the Dragendorff's reagent and Mayer's reagent was used to test the presence of alkaloid in leaf extract. From cold extract it was separated and took 5ml of leaf extract and was separated in evaporating dish. It was evaporated over a steam bath and added 5 ml of 2 M HCl, heated while stirring for 5 minutes and let was cooled. Then added about 0.5 g NaCl stir and filtered, washed the residue with enough 2 M HCl to bring the filtrate to a volume of the leaves filtrate and treated with mayer's reagent. The result was recorded. A positive result indicated by orange precipitate with dragendorff's reagent and white precipitate with the Mayer's reagent.

### Test for the presence of anthraquinones

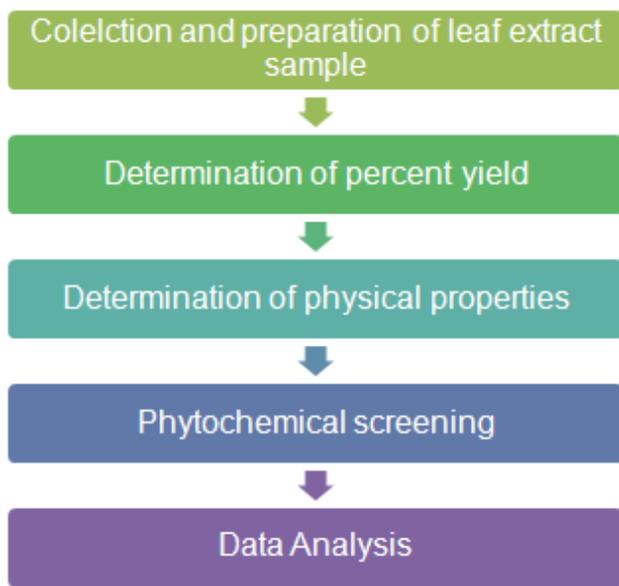
Test for the presence of anthraquinone was done using the procedure provided by Guevarra 2005. The modified Bontragers test was used in determining the presence of Anthraquinone. A pink color indicated a positive of Anthraquinone.

Equivalent of 1g extract was evaporated to incident dryness over a steam both, then 10ml 0.5M potassium hydroxide and 1ml of 1% (H<sub>2</sub>O<sub>2</sub>) were added and stirred. The resulting mixture was heated over a steam bath for 10 minutes. The residue was filtered and discarded. The filtrate was acidified with glacial acetic acid. The aqueous filtrate was extracted twice in 5ml portions of benzene (caution: carcinogenic!). Combining the benzene extracts and divided the extracts into 2 portions as the control and the other portion was treated with ammonia solutions. The tube was shaken and compared with the control tubes.

### Test for the presence of saponin

The capillary test was used to determine the presence of saponin if the level of the plant extract in capillary tube is half in the other tube containing water, the presence of saponin may be inferred. A capillary tube was loaded with the plant extract by immersing the tube to a height 10mm in

the plant. Likewise load another capillary tube was loaded with distilled water, the lift capillary tubes and keep both in a vertical position to allow the liquid inside to flow out freely after sometimes the height of the liquid in the two tubes was compared.



**RESULTS AND DISCUSSION**

**Summary of Physical Properties**

From the observed physical properties it is further generalized that the Panhault leaf extract has a 103.3°C boiling point, a brown color and pleasant odor, 1.02 g/mL of density, a neutral pH of 7 and is a polar substance in H<sub>2</sub>O and CH<sub>3</sub>OH, but non polar in CHCl<sub>3</sub>. These properties can be further viewed in the table below:

**Table1.** Summary of the Physical Properties of Panhault Leaf Extract

PHYSICAL PROPERTIES	OBSERVED RESULTS
Boiling Point	103.3°C
Color	Brown
Odor	Pleasant Odor
Density	1.02 g/ml
Ph	7 (Neutral)
Solubility	Miscible (in Water)
	Miscible (in Methanol)
	Immiscible (in Chloroform)

The two present secondary metabolites were the most important ones because alkaloid when characterized can be a source of antimicrobial and antiviral compounds which can be further improved to make medicines. Also goes the same with saponin, it can be used to make potent insecticides and an ingredient in antibacterial soaps and external products.

**Table2.** Summary of the Phytochemical Screening of Panhault Leaf Extract are shown below

Secondary Metabolites Tested	Results of the Tests
Alkaloid	Positive
Anthraquinone	Negative
Leucoanthocyanin	Negative
Phenolic compounds	Negative
Saponin	Positive
Steroid	Negative
Tannin	Negative
Terpenoid	Negative

**CONCLUSIONS**

Based on the findings of this study, the following conclusions were drawn by the researcher: Panhault leaf extract has a high boiling point than water, a neutral pH of 7, and is polar in its chemical constituent. The panhault leaf extract has a percent yield of 30% per 100g leaves. The leaf extract of panhault has the presence of alkaloid and saponin. The leaf extract of panhault has no tannin, phenolic compounds, terpenoids, steroids, anthraquinone and leucoanthocyanin metabolites.

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