**ABSTRACT**

This study was conducted to determine the secondary metabolites present in the leaf extract of Justina gendarussa Burm. F. locally known as Panhauli. 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 Panhauli leaves showed that it has a 103.3°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 Panhauli leaves extracts has a polar components. Finally phytochemical tests of the Panhauli extract showed the confirmed positive results in alkaloid and saponin only, other secondary metabolites mentioned here in this study were deemed negative.

**Keywords:** Panhauli, 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 “Panhauli” or “Kapanitulot” in Tagalog.

**METHODOLOGY**

**Preparation of Panhauil Leaf Extracts**

*Justina gendarussa* Burm. F. (Panhauli) leaf extracts were gathered by locating places where Panhauli 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% (H₂O₂) 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 compared with the control tubes. The plant extract by immersing the tube to a height 10mm in...
RESULTS AND DISCUSSION

Summary of Physical Properties

From the observed physical properties it is further generalized that the Panhauli 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 H₂O and CH₃OH, but non polar in CHCl₃. These properties can be further viewed in the table below:

| 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.

Table 2. Summary of the Phytochemical Screening of Panhauli 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: Panhauli leaf extract has a high boiling point than water, a neutral pH of 7, and is polar in its chemical constituent. The panhauli leaf extract has a percent yield of 30% per 100g leaves. The leaf extract of panhauli has the presence of alkaloid and saponin. The leaf extract of panhauli has no tannin, phenolic compounds, terpenoids, steroids, anthraquinone and leucoanthocyanin metabolites.

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