The Phytochemical Analysis of Sahlot (*Litsea glutinosa*) Lour. Rob.

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Abstract

Sablot (Litsea glutionosa) Lour. Rob is an important tree belonging to the family Lauraceae. Its leaves are used for varied purposes ranging from households and medicinals to industry.

Leaves of sablot were collected from Proc A Bassit, Vigan City, Ilocos Sur. They were subjected to phytochemical analyses. These quantitative tests manifested the presence of alkaloids, tannins, flavonoids, and sterols. Alkaloids indicated yellowish precipitates and tannins showed heavy precipitates both in moderate amounts while flavonoids and sterols showed red color formations and blue color production in trace amounts, respectively. Glycosides, saponins, and triterpenes gave negative results.

Introduction

Background of the Study

Sablot (*Litsea ghutinosa*) Lour. Rob. is locally growing in the Heritage City of Vigan and its environs. In nearby municipalities as far as Sto. Domingo, Ilocos Sur in the north and Narvacan, Ilocos Sur in the south, one can see a standing sablot tree with big diameter trunks and robust crowns full of branches and leaves. But their occurrences is visible because of their sole presence in the area. One could possibly ask why such trees are on scarce appearance. This is accounted to the over utilization of the species which is believed to be in extinction. They are fast disappearing

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due to their utilization in the plastering industry particularly in the old Ciudad Fernandina, now Vigan City.

There is a need to bring back the sablot in the locality. This requires sufficient knowledge pertaining to its botany, distribution, folkloric importance, and its chemistry in order to give emphasis and disseminate to the people its versatile uses which an ordinary person may not know.

While its leaves were used as ingredients in the making of plasters for walls in the construction industry way back in the 1800s, one would ask where the remaining branches and splinters go. A full utilization of all the parts is now the concern of research so as to maximize the potentials of sablot by the time the UNESCO will come to its full implementation of its requirements for the Heritage City to replenish the deteriorating century houses originally built with organic plasters like lime, sand, sablot, molasses, and many others that made such structures sturdy to appear as they were constructed 100 years back . It is now the objective of this study to determine the phytochemical analysis of sablot leaves to have an initial information on its essential components.

Review of Literature

Sablot *(Litsea glutinosa)* is a tree belonging to the family Lauraceae widely distributed throughout the Philippines in secondary forests at low and medium altitudes. It is also known as *Sebifera glutinosa,* a dicot of the laurel family. Its common names in other countries include balongai, methaluang, thang-buan, malek, malih, lanica, Indian laurel, boi loin hot, huru tangkalak, wuru Jilin, mimen, and purikit. It is synonymous to *Litsea chinensis Lamk., Litsea geminata Blume., Litsea glabraria A.L. Juss., Litsea tetranthera* (Willd.) Pers., *Sebifera glutinosa, Litsea tersa and Litsea sebifera* **Pers.** The common local names of the plant include *puso-puso* and *batikuling* in Tagalog , *sablot* and *lamlamuyot* in Iluko. Its leaves are elliptical to oblong-elliptical, 9 to 20 cm long, broadly pointed at the base and tapering to a pointed tip. Flowers are small, yellowish, crowded in umbels in the axis of the opposite leaves. Fruits are rounded, 8 mm in diameter.

Sablot seeds contain 49% slightly aromatic tallowlike oil broken down as laurostearin and olein in 85% and 15%, respectively. The oil is used in China in the making of white soap . Other parts of the tree are also used as medicine in varied forms - the decoction of the roots as emmenagogue while its poultice utilizing the roots and leaves is for sprains and bruises. Decoctions of the bark are used for intestinal

conditions while poultice of freshly grounded bark arc best remedies for wounds. Its seeds arc perfect in eliminating boils.

Methodology

The experimental research design in actual laboratory set up was utilized in the studv. Fresh leaves of sablot were collected and air dried. They were finely cut and soaked in ethyl alcohol overnight. The solvent and sample were filtered and the filtrate was concentrated in a rotary evaporator removing completely the solvent used. The concentrated sample was kept in a refrigerator.

The sample was subjected to phytochcmical analysis which determined the presence of glycosides, alkaloids, tannins, saponins, flavonoids, triterpencs, and sterols. The methods and procedures were based on the ITDI Phamacology Manual of the DOST, Bicutan, Tagig, Metro Manila.

I. Alkaloidal Test Using the Leaves. Ten mL of the leaf extract was evaporated to a symp consistency on an evaporating dish over a water bath. Five ml of the HCJ solution was added to the concentrated extract while heating. The solution was stirred for about five minutes and then cooled to room temperature. About 0.5 grams of NaCl powder was added to this solution. It was stirred. Enough HCl solution was added to wash and bring the filtrate to a final volume of 3 ml.

2. Test for Glycosidcs (Fehling's Test). Ten ml of leaf extract was dissolved in hot water and filtered. The filtrate was used for the test. Two (2) mL of each sample was placed in two test tubes. One ml diluted in HCl was added to sample one. To sample two, nothing was added. Then the two test tubes were placed in a boiling water bath for 5 minutes. The test tubes were cooled. Both were neutralized with anhydrous sodium carbonate until no more effervescence was produced. Fehling's solution was added to the two test tubes which were heated over a water bath for two minutes. An increase in the amount of brick red precipitate in the hydrolyzed sample as compared to the other sample indicated the presence of glycosides.

3. Test for Tannins (Gelatin test). Ten ml of the ethanol extract of the leaves was evaporated to dryness over a water bath and then cooled. The residue was extracted with 20 mL of hot distilled water, cooled, then to it, five drops of 10% sodium chloride solution was added to salt out undesirable constituents and then the residue was filtered.

The filtrate was divided into two test tubes - A & **B.** Test tube A was kept as the control. Three drops of 1% gelatin solution was added to test tube B. The formation of precipitation suggested the presence of tannins.

4. Test for Saponins {Froth Test). Ten (IO) mL of the leaf extract was dissolved in hot water. The aqueous extract was shaken vigorously for about 30 scconds and was allowed to stand and was observed over a period of 30 minutes. The formation of honeycomb froths at a height of 3 cm indicated positive results.

5. Test for Flavonoids (Color Test). Two mL of the leaf extract was treated with 2 mL 10% HCI and Mg turnings. Formation of red color indicated a positive result.

6. Test for Triterpenes and Sterols (Libermann-Buchard Test) Two mL of leaf extract was dissolved in acetic anhydride. The soluble portion was decanted and to this, 1-2 drops of concentrated H2SO4 were added. A pink to red color was indicative of triterpenes, while a pink to blue color was indicative of sterols.

Results and Discussion

Sablot *(Lifsea glutinosa)* leaves were subjected to phytochemical analysis. This process includes the quantitative tests to determine the presence of alkaloids, glycosides, tannins, saponins, flavonoids, triterpencs and stcrols in *sablot* (Table I).

Table I. Phytochemical analysis of *sablot (Litsea glutinosa)* Lour. Rob. leaves.

Components	Occurrences		Indications
Alkaloids	Moderate amounts	++	Yellowish precipitate
Glycosides	Negative		
Tannins	Moderate amounts	++	Heavy precipitate
Saponins	Negative		
Flavonoids	Traces	+	Red color formation
Sterols	Traces	+	Blue color production
Triterpenes	Negative		

Alkaloids. A yellowish precipitate for Mayer's Test and reddish precipitate for Wagner's Test indicated a positive result. They are alkaline and contain nitrogen. Most alkaloids are related chemically to pyrole, pyridine, quinoline or isoquinoline. They are also antihypertensive, antineoplastic agents, and they demonstrate encolytic property. They are used to relieve nasal congestion, stop hemorrhage, stimulate muscles, combat malaria, and dilate the pupil of the eye.

Tannins. A heavy precipitate in the mixture upon the addition of gelatin solution was observed. This indicates the presence of tannins in the sablot leaves.

The chief component of tannins is gallotannins or pentadigalloylglucose. Tannin, also called tannic acid, is a yellowish-white to light brown amorphous powder with glistening scales and spongy masses usually odorless but with astringent taste. They could be used in the treatment of diarrhea and extensive burns and are for the relief of various rectal and excretory disorders. They can also be used in the treatment of sore throat and stomatitis *(Anderson, 1985)*.

Sterols. A production of blue color in the Liebermann-Buchard Test indicated the presence of sterols. The term *sterol* is applied to the members of a group of compound having in common the cyclopentanoperhydrophenandrene nucleus. Members of the sterols are cholesterol, dehydrocholesterol and ergosterol. In the blood, the sterol plays an important role in transporting fatty acids in the form of cholesterol esters. Dehydrocholesterol has a similar structure to cholesterol and differs only in having another double bond 7 and 8 carbon position. Ergosterol has the same nucleus as dehydrocholesterol only with a slight difference at the side chain. Thus sablot could also be a good source of medicine in the treatment of menstrual disorders and rickets and could be a good source of Vitamin D.

Flavonoids. The color test for flavonoids yielded positive results in trace amounts. There is a formation of red color when the ethanol extract was treated with hydrochloric acid (HCl) and magnesium. Flavonoids are antifungal, anti-inflammatory and have cytotoxic activities. Sablot *(Litsea glutinosa)* could be a potential cure for such diseases.

The sablot leaves showed negative results in the test for the presence of saponins, glycosides and triterpenes.

Conclusions

Sablot *(Litsea glutinosa)* leaves contain moderate amounts of alkaloids and tannins. They have also trace amounts of sterols and flavonoids. They can also be used as antihypertensive, antineoplastic, cytotoxic substance, and a potential mordant in dyeing. They can be good sources of Vitamin D and can be used as antiseptic.

Recommendations

A further study on the phytochemical analysis of the bark of sablot should be conducted in order to trace the presence of such chemicals in the leaves. The leaves of the tree can be used as antiseptic. An antimicrobial assay should also be conducted in order to verify its effectiveness against different microorganisms before they are subjected to clinical trials.

There is a need to conduct an isolation and characterization processes in order to identify the active principle present in both the leaves and barks.

Further, there is a need to determine their potentials as isolated substances and as a whole in order to determine if there is synergism manifested by the phytochemicals which can be used in the treatment of the abovementioned diseases.

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