



Utilization of *Salacia korthalsiana* Miq (Polipog) of Mamanwa Tribe in Las Navas, Northern Samar

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Authors' contributions

This work was carried out in collaboration among all authors. Author ROB designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors FPM and MCGV managed the analyses of the study and the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

This study was conducted to document the *Salacia korthalsiana* Miq which is locally known as Polipog for the treatment of various ailments among the Mamanwa tribe in the barangay San Isidro, Las Navas, Northern Samar. The plant part used and the mode of preparation and treatment are also included in the documentation. Medicinal uses of *Salacia korthalsiana* Miq (Polipog) was gathered through interviews using semi-structured questionnaire. The tribe's chieftain, elders and faith healers (also known as albularyos) were involved in providing information on the *Salacia korthalsiana* Miq (Polipog) documentation as medicinal plants and utilized by the Mamanwa tribe to treat different kinds of diseases and ailments. The most frequently used plant part was the leaves, roots and stems. The methods applied in the preparations of the plant were decoction, pounding, cutting, chopping into smaller pieces, extracting the juice and applied directly to the affected area. The most common health problems treated by the plants were menstrual problems, itchininess, wounds, anti-inflammatory, lowering of fever, cough and colds, hypertension, and asthma. Mode of treatment were administered orally and externally. Documentation of the claimed medicinal plants by local communities will not only provide a baseline data but also unlock opportunities for the discovery and development of new and less expensive plant-based medicines.

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1. INTRODUCTION

Traditional uses of plants by local communities for the treatment of various ailments are valuable in the development of present day medicines. In fact, most plant-based medicines that were developed by pharmaceutical companies have their beginnings in ethno-medicine. The Philippines is a nation blessed with a number of different ethnic groups. One of the 110 indigenous tribes scattered throughout the country [1] are members of the Mamanwa community which can be found in Agusan del Norte, Surigao del Norte, Surigao del Sur, Panaoan Island, and in the mountains of Southern Leyte. Mostly of the Mamanwas are food gatherers who move from one place to another depending upon the supply of food found in the place. Lately, they have moved into Las Navas, Northern Samar. Due to hardship, the Mamanwa community tend to used herbal medicine for their health and medicinal needs, especially for child care. Most of the herbal medicines are often used for the cure of stomach-ache, bloody diarrhea, wounds, scabies, insect bites, itchiness, burns, scalds, eyesores, fever, headache, skin diseases, asthma, sore throat, cough, colds, incontinence, kidney stones, constipation, snake bite, dyspepsia, mouth ulcers, tongue blisters and inflammation [2].

Mamanwa is one of the oldest tribe [3], who bear a striking physical resemblance to the Negritos [4]. They are genetically related to the Denisovans [5] and they are known by several names such as Conking, Mamaw, Amamanusa, Manmanua, Mamaua, Mamanwa Negritos, Kongking, Tagajias, Tagamanganlo [6] and are believed to be descendants of the original settlers of the Philippines.

One of the herbal plant utilized by the Mamanwa community for their health and medicinal needs is the *Salacia korthalsiana* Miq, locally known as Polipog. Taxonomically, this plant belongs to the plant family Celastraceae being a climbing shrub with woody stems that twine into the surrounding vegetation and can be up to 18 meters long. There are two types of Polipog; the tree from which large branches and grows abundantly in deep forest. Its roots are big. The other one is a vine from with deciduous green leaves and small branches. This type of polipog can grow in a roadside and backyard. The plant is harvested by the Mamanwa people from the wild for local use as food and medicine.

Decoction from the roots is drunk as a treatment against cracked lips. It is also used by newly delivered mothers to aid in getting back the vigor and health of their body. Also, some say that it can be used to cure certain illnesses such as fever, stomachache, coughs and even cancer just by drinking its decoction [7].

Several studies have been done investigating the therapeutic potential of the plants. Phytochemical screening of polipog decoction [7]; histochemistry and phytochemical profile of the leaves, stem and roots of *Salacia korthalsiana* Miq. (Polipog); Nutraceutical and Nutritional Content of *Salacia korthalsiana* Mig. (Polipog); Analgesic efficacy of leaf and root decoction of *Salacia korthalsiana* Miq. (Polipog) [8]; Analgesic efficacy of the leaf extract of *Ligustrum* sp. (Polipog) [9]; analgesic Activity of *Salacia korthalsiana* Miq [10]; Nutraceutical and Nutritional Content of *Salacia korthalsiana* [11]; Histochemistry and phytochemical profile of the leaves, stem and roots of *Salacia korthalsiana* Miq. (Polipog) [12]; and antibacterial activity of *Salacia korthalsiana* Miq. (Tonog and Ambida, 2020). However, not many studies have been done on this plant with regards on the utilization of the Mamanwa tribe.

2. METHODOLOGY

2.1 The Study Area

San Isidro is one of 53 barangays in Las Navas, a municipality Northern Samar Province. Las Navas is situated in the heart of Samar Island, lying along the Las Navas River (formerly Catubig River). It comprises a wide lowland between hills now known as the Catubig Valley. The Las Navas river is wide and big enough that small tonnage or motored vessels can easily sail to the source of the river. It is bounded on the north by Catubig, on the east by Jipapad, Eastern Samar, on the west by Silvino Lubos, and on the south by the municipality of Matuguinao and San Jose de Buan, Western Samar (PSGC, 2016).

The municipality has a total land area of 28,261 hectares (69,830 acres). Most of this land is devoted to agricultural production and the rest are forest reserves. Its soil is predominantly silt and clay loam with fine texture and high water retention. This soil type is fertile and suitable for lowland rice but needs water drainage for upland crops.

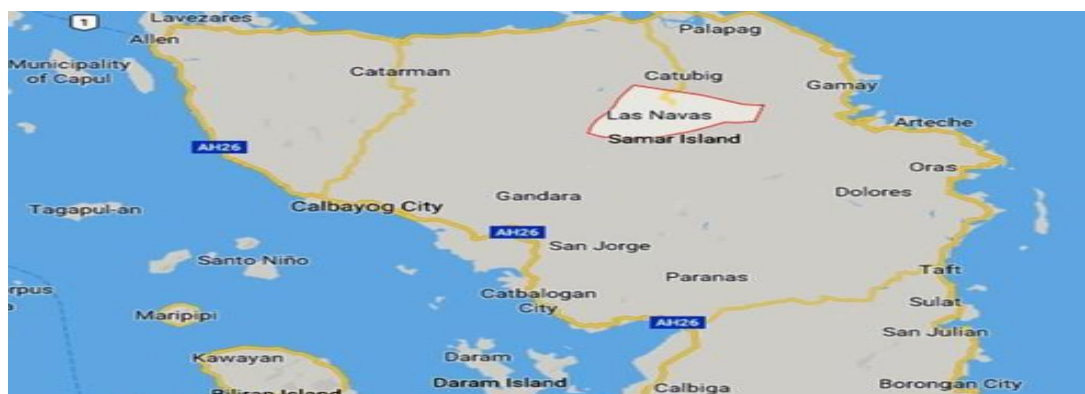


Fig. 1. Location map of the study area

2.2 Sampling

Prior to the conduct of the study, Knowledge about the Polipog plant was gathered through interviews and focused group discussions with the Mamanwa community. Informants/respondents were composed of the tribal chieftains, traditional healers, and community elders. Most of the conversations were performed in waray dialect. Specifically, face to face interviews and focused group discussions, mostly with key informants. The choice of the key informants was based on recommendations from the chieftains which include mostly the older generation of the Mamanwa community. The interviews were focused on the Polipog plant that are being used by the Mamanwa community. The collection was conducted in October, 2018.

2.3 Identification of the Polipog Plant Samples

Polipog plant was brought to College of Science Laboratory Extension for further identification using the available book references and internet sources. The verification and authentication of the collected plant samples was done by Prof. Manuela Cecille G. Vicencio, a Botanist of the College of Science.

3. RESULTS AND DISCUSSION

Medicinal plants have a promising future because there are about half million plants around the world, and most of them their medical activities have not investigate yet, and their medical activities could be decisive in the treatment of present or future studies. Traditionally, the tribal people of Mamanwa administer the Polipog leaves, bark or roots in different form according to their need/ailments.

3.1 Plant Parts Used

Different parts of the Polipog are used for various diseases by the Mamanwa tribe. As shown in Fig. 2, the most used plant part was leaves (46%), followed by the roots (33%), combination of leaves and roots (13%) and bark (8%).

3.2 Method of Preparation

The method of preparation varies based on the type of ailment treated. As shown in Fig. 3, there were four types of preparation. Boiling with water which account (40%), was the most common route of administration of Polipog plant. This was followed by pounding (27%), crushed (20%), and pre-heat (13%).

3.3 Method of Administration

Mode of administration varies from ailment to ailment as shown in Fig. 4. Dermal has a percentage of (50%) followed by oral (45.5%). Leaves, roots, bark and combination of leaves and roots are applied directly to the affected areas. Leaves and roots are also drunk once, twice or as needed.

3.4 Discussion

The Mamanwa community utilized the Polipog plant in treating certain diseases. Based on the result of the survey, the responded that leaves were more preferable to use. One of the reasons for this is to protect the plants and ensure sustainability in the utilization of the plants. Harvesting the leaves are less destructive for the plants. Leaves are also easy to collect and are the most abundant plant parts and also due to its watery content as compared to other parts. Some of the diseases listed by herbolarios in

Northern Samar which utilized leaves for medicinal purposes are used for the treatment of irregular menstruation, body pain, fever, bruises, stomach ache, post-delivery bathe and skin allergy. Another part of the Polipog utilized by the Mamanwa in terms of effectiveness is the roots because they proved that a disease/ailment such as high blood/hypertension, cough and colds, body pain, boil and asthma can be treated if the root part was used. Combination of leaves and roots are also utilized by the Mamanwa community to treat itchiness and wounds. Lastly, the bark is used for flatulence. Based on the survey, decoction which is the process by which plant material is boiled in hot water until the

original volume is reduced to approximately one-fourth has been reported as the most preferred method of preparation of Polipog plant in Mamanwa community. Crushing and pounding are also considered as the preferred method for skin diseases/dermal problems. For the route of administration, Polipog plant was administered orally and by external application. Internal ailments such as fever, irregular menstruation, stomach ache, hypertension, asthma, cough and cold was commonly treated by making the patient drink the Polipog plant preparation; bruises, skin allergy, flatulence, body pain, boil, itchiness and wounds was treated by crushing and applies on the part affected.

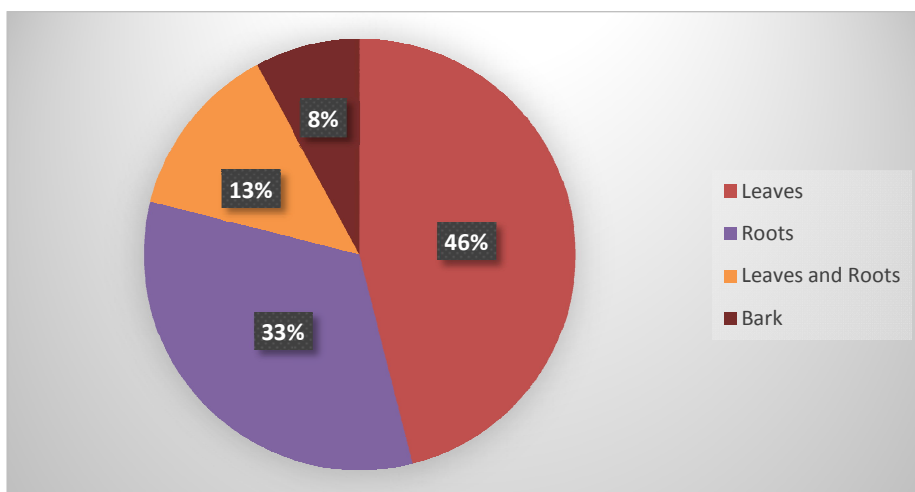


Fig. 2. Plant parts used

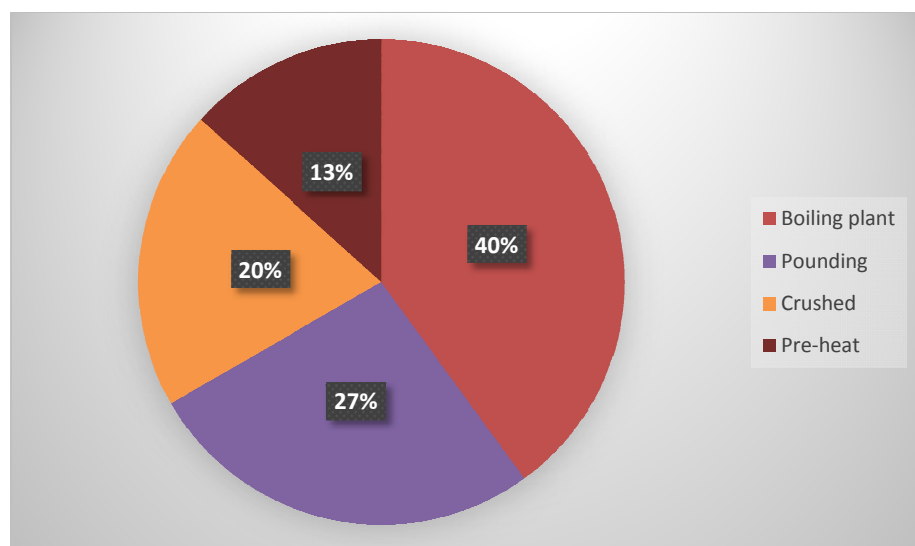


Fig. 3. Method of preparation

Table 1. The plant part used to treat health problems, method of preparation, and route of administration

Scientific name	Local name	Plant Part used	Treatment treated	Method of preparation	Mode of administration
<i>Salacia korthalsiana</i> Miq	Polipog	Leaves	Irregular Menstruation	Boil a sufficient amount of leaves with water and serve as a drink	Once a day, specifically in the morning
			Body pain	Crush and apply directly on the affected area	Applied when the ailments occur
			Fever	Boil a sufficient amount of leaves in 2 to 3 cups of water and serve as a drink	At least 1 to 2 glasses a day
			Bruises	Pound, apply or rub the extract to the affected area	Twice a day or as needed
			Stomach ache	Slightly heat and poultice directly on the stomach	Twice a day, until the pain is gone
			Post-delivery bathe	Boil a sufficient amount of leaves in water	Everyday
			Skin Allergy	Pound then squeeze, apply directly to the affected areas	Apply regularly until the allergy is healed.
		Bark	Flatulence	Scrape then pound, apply the extract to the stomach	Twice a day
		Roots	High blood/ Hypertension	Boil a sufficient amount of leaves in water.	Twice a day
	Cough and colds		Wash properly, boil a sufficient amount of roots in water and serve as a drink	At least 1 to 2 glasses a day	
	Body pain		Slightly heat then rub or apply to the body	Apply when ailment occurs	
	Boil (Hubag)		Pound and apply directly to the affected area.	3x a day or as needed	
	Asthma		Boil a sufficient amount of leaves	Serve as a drink	
		Leaves and Roots	Itchiness	Pound or crush the leaves and roots then apply on the affected areas.	Twice a day; morning and afternoon
	Wounds		Wash properly, crushed the leaves and roots, then apply to infected area (used as disinfectant)	Every morning or after bath	

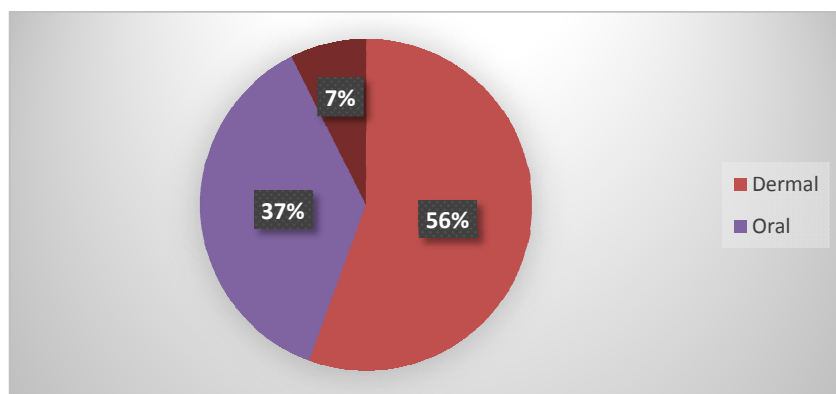


Fig. 4. Mode of administration

4. CONCLUSION

The mountainous area of Las Navas, Northern Samar where the Mamanwa community resides have an abundant *Salacia korthalsiana* Miq (Polipog) species. The Mamanwa community utilized this plant for maintaining their primary healthcare. Thus, the researchers would like to encourage the Mamanwa's the proper utilization and awareness on the propagation of polipog in the area.

CONSENT AND ETHICAL APPROVAL

During the actual sampling Ethical Standards regarding Plant Collection was take in consideration. A prior informed consent was sought from the chieftains and elders of the Mamanwa community using a semi-structured questionnaire as guide.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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