

Ethnobotany of Plants in Tagkawayan: Input for information Communication Media on Medicinal Uses of Plants

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ABSTRACT

In the Philippine countryside, where barrio folks are closely entwined with their natural environment, their close contact especially to the adjoin dipterocarp forests makes them more knowledgeable on the different uses of plants. This study focuses on the exploration of the traditional knowledge of plants more specifically on its medicinal uses. An enhanced and adapted semi structure interview guide was employed and a qualitative approach was incorporated in data gathering. The study recorded a total of 136 plant species of which 52% (81 species) were of medicinal uses, the foremost plant part used were the leaves (58%), route of administration was internal application (67%) and the most commonly method of preparation is boiling (58%). The dosage frequently given was 3x a day. Results showed a rich diversity of plant species in Tagkawayan and the barrio folks are knowledgeable on the traditional uses of plants, but this knowledge were not yet explored because these are trapped among older generation that are transferred through verbal means. Development of a reading material will be of great help for preservation and information dissemination of these beneficial uses of plants. The use of leaves is an indication that the biodiversity in the place is ensured and continued reliance on the use of herbal plant showed that plants could be a better alternative for synthetic drugs in treatment of common diseases.

Keywords - Ethnobotany, Medicinal Uses of Plants, descriptive method, Philippines

INTRODUCTION

Literature shows that even before the modern-day production of synthetic drugs, ancient civilizations are knowledgeable and strategically use plants as tool for their primary health care. Pieces of proofs were given in a scroll with 100 pages dating 1550BC that illustrate the uses of 700 medicinal herbs written in the Ancient Egyptians Ebers Papyrus and the 16th century BC Greek Hippocraticum elucidating the details about the use of herbal medicine. Among the mentioned plants are ginger that is proven to help relieve headache, joint pain, motion sickness and nausea, garlic that gives antibacterial and antiviral effects that helps boost immune system, oregano that was used as decongestant that helps clear respiratory tract (Mercola, 2016). Today, as estimated by the World Health Organization (WHO), 80% of the world's population are dependent on their traditional knowledge of herbal medicine for treatment of common health problems and even uses food supplement which are plant-based to slow down the development of life threatening diseases.

The Philippines, being a tropical country is blessed with great number of flora with barrio folks who are closely entwined to, and their close contact with their natural environment as part of their daily lives makes them knowledgeable with their different usage manifested in the richness of the Filipino Cultural Heritage that includes the uses of plants that are visible in the time-honored practices of the villagers in rural communities nationwide. The study of Picardal, Miano, Alonso and Reuyan (2011) found out, four medicinally important plant roots used by traditional healer to be very effective in treating common diseases in Cebu Island Philippines. Moreover, the study of Nazareno, Buot Jr, Briones and Rebancos (2013) showed that most of the respondents' awareness were more on the medicinal uses of plants rather than the role of plants in pollution mitigation. Furthermore, the study of Fuentes (2013) shows that there 13 herbal plants with antibacterial properties used in the 42-day feeding trial to determine its effect on the growth of a broiler.

Unfortunately, with the passing of time, the reverence for the use of plants in everyday life has largely been lost in the memories of the youth, with influence of modern technologies among the Filipino younger generation that goes well with what is automatically in hand, thus, this cultural heritage of plants' practical uses is on the verge of depletion (Uddin, Ratna & Faruque, 2013). Hence, investigating the beneficial role of plants in the human lives before it will be totally lost in the memory of the young minds (Ong & Kim, 2014). As literature

and studies provide information on the need to properly document the treasure of this cultural wisdom of plant benefits in the human society, the necessity to document and disseminate these customs are evidently visible (Betti, Yongo, Mbomio, Iponga & Ngoye, 2013).

FRAMEWORK

Herbalist theory known as “Thomsonian Medicine” was popularized in early 19th century by Samuel James Thomson (1833). He believed that there are medicinal plants that have efficacious effect in treatment of diseases. According to Drake (1830), Thomson’s innovative system was presented as an appealing alternative that allowed each individual to administer his or her own treatment using natural products. Therefore, it is useful in providing proof of plants’ medicinal uses. It was also anchored on the Theory of Ethnobotany introduced by John Hershberger in 1896 on how people of a particular culture and region make use of indigenous (native) plants. Throughout time, countless people have tested and recorded the usefulness of plants. Those plants with beneficial uses were kept and utilized. Cultures evolved by passing from generation to generation the knowledge of plants and their usefulness through verbal means without proper documentation. Hence, it is in the verge of depletion, thus, the theory of cultural evolution also contribute for the advancement of the study.

OBJECTIVES OF THE STUDY

The main objective of the study is to explore the traditional knowledge of the use of plants in the zonal district of Tagkawayan, Quezon, Philippines. Specifically, it aimed to: 1) determine the plant species utilized by the informants in the Zonal district of Tagkawayan; 2) classify plants species according to their growth forms; 3) identify the perceived medicinal uses of plants along plant used, manner of preparation and dose of administration; and 4) develop a printed material to disseminate the traditional uses of plants in Tagkawayan.

METHODOLOGY

Using descriptive qualitative design, the data were generated from field notes, actual plant collections, field visits, transcript, and audio and video recordings with the use of semi structured questionnaires as the interview guide. Focus group

discussions were used to elicit data on the manner of preparation of plant parts used for the treatment of specific diseases. Coding, segregation, and combining important details were done to the information obtained to come up with a transcript to be validated by the respondents for the correctness of the written information.

Research Site

Tagkawayan is a municipality in the province of Quezon that has a population of 50,833 people, according to the 2010 census. As the town is quite isolated to the modernization when it comes to medical facilities and including the lack number of physician that provides healthcare, much more, the time travel that almost took four hours by land transportation to reach the nearest place of the province to have an immediate response for medical emergencies, are indicators that almost of the local folks need to rely on the traditional way of healing. As they inherited from their ancestors for their health wellbeing, a good consideration to deem for developing a health guide using plants as remedies for health problems was explored.

Participants

This study used the purposive sampling method in the selection of the respondents, only knowledgeable folks on plants utilization were included such as elders, rural dwellers, herbalist and albularyos (quack doctors) in the different zonal districts of Tagkawayan.

RESULTS AND DISCUSSION

Table 1. Number of Identified Plants Species by site

Sampling Site	No. of Identified Plant Species
Metro Zone	125
Highway Zone	132
Mountain Zone	129
Railroad Zone	134

Table 1 shows that respondents from “railroad zone” enumerated and named the topmost number of plant species with their known perceived uses, while respondents in “metro zone” cited the least number of plant species with their known and perceived uses. The difference in the number of identified plant

species is due to the variation of their exposure and contact with nature including the availability of the specie in the sampling sites, the cultural and socioeconomic traits of the informants. As supported by the study of Beltrán Beltrán-Rodríguez, Ortiz-Sánchez, Mariano, Maldonado-Almanza, and Reyes-García (2014), the difference is given by the ecological conditions, the number of useful species known to the informants is due to their historical, cultural and socioeconomic traits that explain their local knowledge on the usefulness of plant diversity.

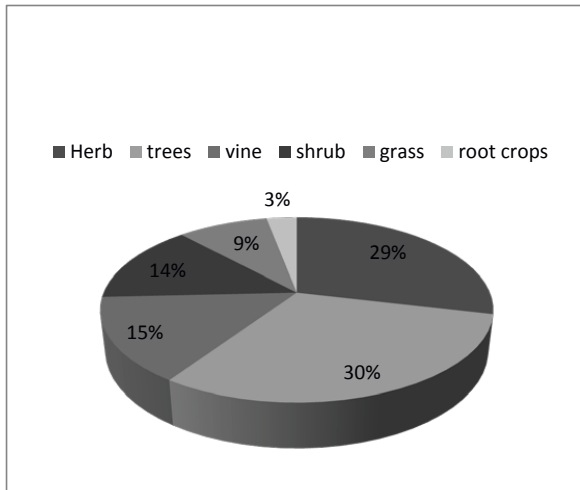


Figure 1. Growth Forms of the Plant Species

The identified species exist in several growth forms such as herbs, trees, vine shrub, grass and root crops. Out of 136 plant species, trees are the common growth form found in the study area. The result is congruent with the findings of Tantiado (2012), in his ethnobotanical survey among the residents of Tigbauan, Iloilo about the utilization of more trees other than different growth forms. Furthermore, the study of Diame (2010) identified 126 plant species, most of the cited species in her study were trees, of which is about 45% are wood, and only 43.13% are in herbaceous forms. This implies that trees are sturdy and tough among the several growth forms of plants, so it can withstand all kinds of destruction. Thus, its abundance in nature and easy access for its parts can contribute to higher number of plants growth form utilized by the respondents.

Table 2 Plant Growth Distribution

Growth Forms	Percentage	Number of species
Herb	14	19
Grass	9	12
Root crops	3	4
Shrub	29	39
Trees	30	41
Vine	15	21
Total	100	136

Table 2 shows the percentage distribution of the 136 identified plants species reflecting the number of species on each growth forms.

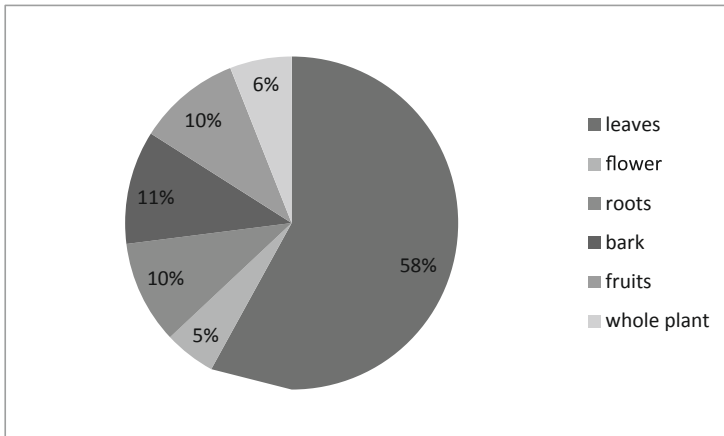


Figure 3. Percentage distributions of utilized plant parts

Figure 4 shows that among the 136 plant species, 58% or 47 species used the leaves part of the plant. Further, root and fruit parts of the species were utilized from 20% or 16 species, which is equally divided with the aforementioned parts, respectively. A total of 6% or five species used the whole plant. Moreover, the bark parts of the plant were consumed from 11% or nine species. Only 5% or four species employed flowers for identified perceived of plants in the zonal district of Tagkawayan. Comparable results were shown in the study of Abe and Ohtani (2013), in their ethnobotanical survey of medicinal plants and traditional therapies on Batan Island, Philippines, they found out the most frequently used

part is the leaves (55%), followed by stems (9%), fruits (8%), bark (8%), and sap or juice (6%). Some studies also shows disparity of results especially in areas of inhabitants of dry regions , that tends to focus their attention on plant parts that are continuously available, even in a prolong period of drought, thus, lose their leaves and noted that roots were frequently used.

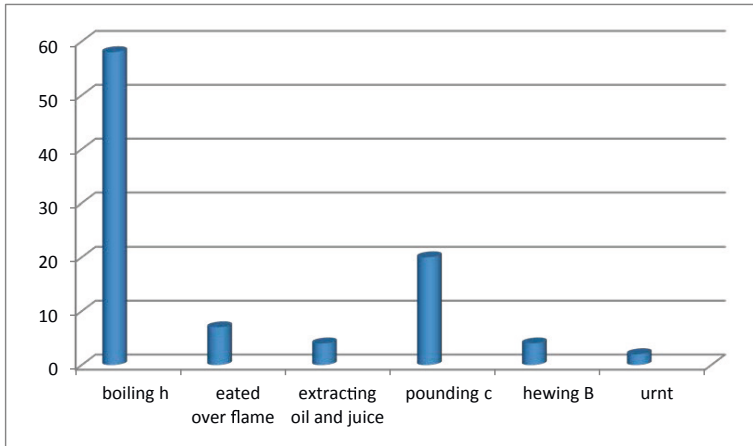


Figure 3. Mode of Preparation of Herbal Medicine

With plants having medicinal values, 20% or 16 species were predisposed in pounded manner of preparing the medicinal remedies. Boiling method was utilized from the 58% or 47 species. Steam method of preparation was done among the 5% or four species, while heated over flame was used for the 7% or six species. Same number of species that equals to 7% or six species were chewed or eaten raw. The last remaining percent that is equivalent to 2% or two species were burnt or toasted. The study of T. D Balangcod and K. D. Balangcod (2015) reveal that as to the mode of preparation, decoction dominates the other methods of preparation in Benguet Province because this is the easiest way to prepare, especially, to cure internal ailments. Likewise, Kefalew, Asfaw and Kelbessa (2015) concluded that the mode of preparation for herbal remedy was more on decoction that helps in releasing the active chemical components of the plants to cure an illness.

CONCLUSION

The local communities of Tagkawayan, Quezon, Philippines have a wide range of flora or plants growing in their environment and their close contact makes them knowledgeable on the beneficial uses of plants. Trees as the common growth form found in the study area and leaves as the mostly utilized plant part used are indications that the biodiversity of the place was ensured, therefore, identification of frequently used, underutilized, abundantly available species but with no specific use will be done for management, protection and conservation of the biodiversity. Boiling is a hassle free way of preparing the medicinal remedy. With boiling as a method of preparation, decoction was produced as medical remedies for common ailments and informants believed that taking this natural remedy three times a day is the safest way to administer it to a sick person. Thus, analysis of biochemical components present among the species must be done to test its efficacy. Moreover, other method of preparation is also recommended such as external application since its effect will be directly observed after its use. Consequently, other plant parts can be tried also to find out their medicinal uses. The continued reliance of the barrio folks on what nature can offer is an indication that there is really a need for these traditional knowledge to be conserved, protected and preserved. The result of the study can be useful in developing a reading material that can be a guide for a natural approach in primary healthcare of the barrio folks in Tagkawayan.

TRANSLATIONAL RESEARCH

The result of the study was used in developing a reading material which is composed of 150 pages, containing the photos of the 81 plants species identified with medicinal uses, the plants part used for preparation of the natural remedy, the mode of preparation, the materials to be used, the dosage of how it will be given to the patient and the common ailment it was used as treatment. Further, the cover photo of the book was designed with the different photos of plant and its part to promote plants' healing wonder.

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