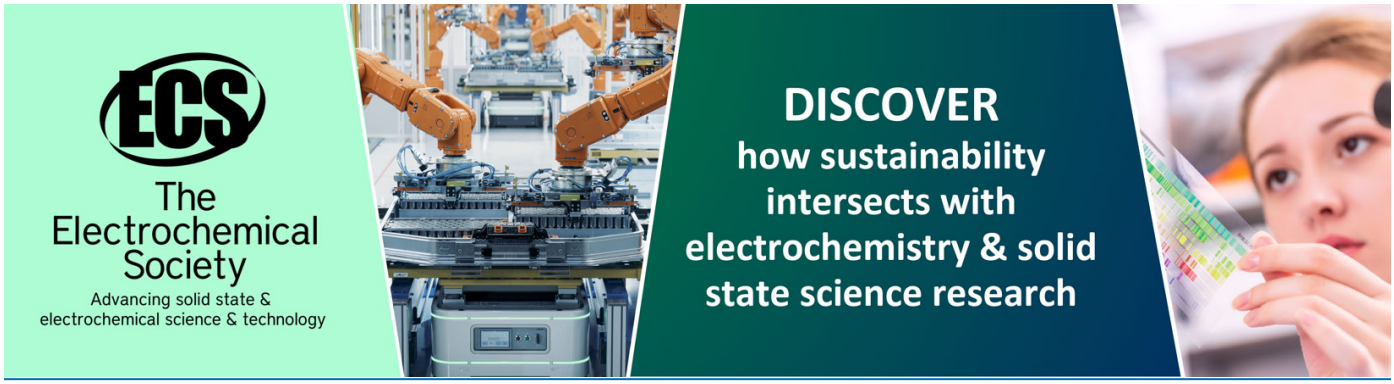
The food plant ethnobotany of Ampari tribe community in Papua, Indonesia



The food plant ethnobotany of Ampari tribe community in Papua, Indonesia

H F Waroy[1], **S Utami**[1], **Jumari**[1]

[1]Deptartement Biology, Faculty of Science and Mathematics at Diponegoro University, Jl. Prof. Soedarto, SH. Tembalang Semarang Indonesia 50275

Corresponding author: jumariundip@gmail.com

Abstract. The Ampari tribe has a variety of biological diversity especially of food plant species, Our studied focus on an ethnobotanical research project conducted in the Menawi village, Kabupaten Yapen Province Papua, regarding the use of plants as a food source that has been used as food for Ampari tribe in Papua. The research was conducted from November 2017 to May 2018 in-depth structured interview, observation around the local community. Altogether, the use of 53 species from 31 famili of food vegetables has been recorded, Corresponding to this research have been collected and analyzed The majority of Ampari tribe using Arecaceae, including Metroxylonspp, Areca catechu L, Cocos nucifera Land NypafruticansWurmbthose represent native species from Papua and majority Ampari tribe used Metroxylonspp as a staple food. Areca catechu, Cocos nucifera L., NypafruticansWurmbwere used as an alternative food for beverage ingredients. The consumption of these resources is still quite popular practice in this region.

1. Introduction

Papua has the highest species of plant endemic compared to other regions in Indonesia. Indonesian flora is separated by the Wallace Line, this line gives the boundary between the flora of the western and eastern parts. Based on Wallace and Webber's research that the Sahul flora includes Papua and the surrounding small islands of the Raja Ampat islands, Yapen Islands and Biak. Flora on these islands under the influence of the Australian continent [1].

Each tribe in Papua has a high level of knowledge but varies in utilizing the abundant natural resources of plants to meet the needs of daily life and this has been passed down for generations. This shows that the level of cultural knowledge is still high among the people so it needs to be maintained.

The life of the Ampari tribe is very dependent on agriculture in addition to the marine sector to meet all their daily needs. According to Hunter and Fanzo (2013), clothing, food, fuel, medicines, and shelter are important genetic resources for human life. The culture of food and social life are inseparable from a variety of genetic resources that can support health and human life [2].

Menawi has abundant natural resources that need to be kept in existence including their use as local food. According to the general guidelines of the national agriculture department, Papua has diverse natural resources in the field of food which acts as a source of carbohydrates, proteins, vitamins and

minerals contained in animal foods, tubers, fruits, grains and vegetables [3]. Based on observations of development brought about changes in lifestyle, so that people have not utilized food resources to the fullest, this illustrates that the rules of balanced nutrition have not been realized. Specific research on the use of food in the Menawi village has not been done so far, so there needs to be a follow-up to raise and discuss important natural resources used in fulfilling daily life by the Ampari tribe in the Menawi village.

2. Materials and methods

Research conducted in the inventory of food plants is carried out in lowland and sloping areas, namely Menawi Village which is located on a slope of land between 0-40% called the coastal area, the height of the coastal region ranges from 0-10 m above sea level. Yapen Island region has a very varied geological structure, this is evidenced by the type of rock that is not calcareous, some calcareous and igneous [1][4].

This research lasted for 6 months from November 2017 to May 2018, located in the Tahunisara District, Yapen Islands Regency. The method used in this research is a survey, interview, and observation. The number of informants (farmers) when observing numbered 30 people as a sample. The flow of direct interviews with farmers about the use of food, the identity of farmers, local/regional names, parts of organs used, ways of cultivation, conservation efforts and their utilization.

Identify important characteristics that are characteristic of plants, which are tuber/fruit character, stem character, leaf character, and other specific morphology. Data analysis is presented in the form of tables and analysis descriptively.

3. Results and discussion

3.1. General description of research location

The Ampari tribe in the Menawi village of DisrikAngkaisera is part of the coastal area with an average height of 3 meters above sea level. This district is bordered by YawaKukat District in the north, bordering the southern Ambai Islands District, the western part bordering the southern Yapen District and the eastern part bordering the Ampimoi District [1] [4]. This village can be reached by land by vehicle but also by sea by boat.

Menawi village consists of mostly indigenous people with moderate education and livelihoods other than civil servants, most of the people are gardening, farmers and fishermen. Menawi village has superior commodities since the Dutch colonial era namely coffee and cocoa [5]. The high diversity of plant species that exist in the yard, garden, and forest makes the village community can fulfill their daily needs besides being marketed.

Table 1. Types of plants as food used by the Ampari tribe

No.	Local/general name	Scientific name	Family	The part used	The benefits
	Sago/taun	Metroxylon sago Robbs .	Arecaceae	Pith	Staple food
	Banana suanggi/rando kawiang	Musa sp.	Musaceae	Fruit	Staple food
	Banana horn	Musa Sp	Musaceae	Fruit	Staple food
	Breadfruit	Artocarpusaltilis (Parkison ex F.A. Zorn) Fosberg	Moraceae	Seeds, meat (fruit contents)	Alternative food

Corn/kasambrei	Zea mays L.	Poaceae	Fruit	Alternative food
Taro /barimu /kimpul	Xanthosomaviollaceumschott	Araceae	Bulbs	Staple food
Coconut	Cocos nucifera L.	Arecaceae	Fruit, stove, coconut water	Fruits, seasonings, beverage ingredients
Taro /bete	Colocasiaesculenta (L.) Schott	Araceae	Bulbs	Alternative food, Vegetables
Cassava/timur	Manihotutilissima L.	Euphorbiaceae	Bulbs	Staple food, Vegetables
Konunum	Canna edulis L.	Cannaceae	Leaves, tubers	Alternative food
Sweet Potato	Ipomoea batatas L.	Solanaceae	Leaves, tubers	Staple food, vegetables
Bamboo Shoots	Gigantochloa sp.	Poaceae	Bulbs, leaves	vegetables
Gnetum	Gnetumgnemon L.	Gnetaceae	Bulbs, leaves	vegetables
Eggplant	Solanummelongena L.	Solanaceae	Fruit	vegetables
Papaya	Carica papaya L.	Caricaceae	Leaves, flowers, fruit	Vegetables, fresh fruit
Long beans	Vignasinensis (L.) Savi ex Hassk	Fabaceae	Fruit, leaves	Vegetables
Spinach	Amaranthusspp	Amaranthaceae	Leaves, stems	Vegetables and medicines increase breast milk, the blood booster
Jackfruit	Artocarpusheterophylla Lam.	Moraceae	Fruit, seeds	Fresh fruit
Nails / ferns	Diplaziumesculentum (Retz.)Swartz	Athyriaceae	Leaves, stems	Vegetables
Red fruit	Pandanus conoideus Lam.	Pandanaceae	Fruit, oil	Vegetables and beverage ingredients
Yellow Fruit	Pandanus sp.	Pandanaceae	Fruit, oil	Vegetables, beverage ingredients
Raumbewa/gedi	Abelmoschusmanihot L.	Malvaceae	Leaves, stems	Vegetables, bowel medicine, breast milk enhancer
Rerami/rami	Boehmerianivea	Urticaceae	Leaf	Vegetables

Sago Mushroom	Volvariella sp.	Pluteaceae	Hood, stem	Vegetables and mother's milk enhancer
Katuk	Saurapsus androgynous (L.) Merr.	Euphorbiaceae	Leaf	Vegetables and mother's milk enhancer
Pumpkin	Sechiumedule (Jacq.) Sw	Cucurbitaceae	Fruit	Vegetables
Kuine mango / andari	Mangiferaindica L.	Anacardiaceae	Fruit	Fruit
Water guava	Syzygiumaqueum (Burman f.) Alston	Myrtaceae	Fruit	Fresh fruit
Red guava	Syzygium sp.	Myrtaceae	Fruit	Fresh fruit
Nona Banana	Musa acuminata	Musaceae	Fruit	Dessert fruit
Raja Banana	Musa nomalis	Musaceae	Fruit	The staple food, dessert fruit
Sorong banana	Musa paradisiaca L.	Musaceae	Fruit and flower	Staple foods, fruits and vegetables
Seagress	Enhalusacoroides	Hydrocharitaceae	Root and stem	Additional food
Matoa	Pometiapinnata J.R. Forster & J.G. Forster	Sapindaceae	Fruit	Fruit
Miss fruit	Annona reticulata	Annonaceae	Fruit and seeds	Fruit
Durian	Duriozibethinus	Malvaceae	Fruit	Fresh fruit
Rambutan	Nepheliumlappaceum L.	Sapindaceae	Fruit	Fresh fruit
Betel nut	Areca catechu	Arecaceae	Fruit	Fruit
Betel	Piper betle	Piperaceae	Fruit, leaf, stem	Fresh fruit
Nipah	NypafruticansWurmb.	Arecaceae	Fruit, nirah	Fruit and beverage ingredients
Cane	Saccharumofficinarum L.	Poaceae	The stem	Raw drinks
Chocolate	Theobroma cacao L.	Malvaceae	Seed	Fruit
Chessy	Artocarpus integer	Moraceae	Fruit and seeds	Fresh fruit
Pineapple	Ananascomosus (L.) Merr.	Bromeliaceae	Fruit	Fresh fruit
Chili	Capsicum annuum	Solanaceae	Fruit	Seasoning
Gersen	Mutingiacalabura L.	Elaeocarpaceae	Fruit	Fruit
Cucumber	Cucumissativus L.	Cucurbitaceae	Fruit	Fresh fruit
Princess fruit	Passiflorafoetida L.	Passifloraceae	Fruit	Fruit
Lemon cui	Citrus aurantifolia	Rutaceae	Fruit	Seasoning
Turmeric	Curcuma domestica	Zingiberaceae	Rhizome Root	Seasoning

Ginger	Zingiberofficinale	Zingiberaceae	Bulbs	Spices, beverage ingredients
Tomato	Solanumlycopersicum L.	Solanaceae	Fruit	Seasoning
Soursop	Annona muricata L.	Annonaceae	Fruit	Fresh fruit

3.2. Diversity of plant species as local food

Based on the results of an inventory carried out on respondents showed very diverse food products found both those that have been cultivated or not that are sourced from the yard, garden, and forest in Menawi Village. The results of observations by farmers that planting in the garden is better than in a special house yard for alternative food such as tubers.

In the field, 53 species of plants from 31 families were used as food (Table 1). The most widely used family is the Arecaceae family which consists of 4 types of plants including sago (Metroxylonspp, areca nut (Areca catechu L), coconut (Cocos nucifera L.) and bobo (NypafruticansWurmb.). thorny (Metroxylonrumphi, Mart.) which consists of sago kurai, sago wewa, samiamiri, widoi sago, sago anta, sago kerewarai) and non-thorny sago (Metroxylon sago Rottb.), sago Barari. This whole sago is the main or basic local food need for the coastal community of Menawi Village. The plants Areca catechu, Cocos nucifera L., NypafruticansWurmb., Are a type of fruit and refreshing drink when exhausted.

Plants that have begun to be consumed, wild and uncultivated, while alternative food can be used in addition to increasing the community's economy, including the fruits of Annona (Annona reticulate), rerami (Boehmerianivea), konunum (Canna edulis L.), suanggi banana (Musa sp.) and bête (Colocasiaesculenta (L.) Schott.). The seven types of sago above are native to the Menawi Village which still grows wild but is often treated by the local community. This type of sago Barari is sometimes taken to be used as seed and sent outside the area. According to researcher Widjono et al. (2000), based on the results of the survey there were 61 types of sago found in areas in Papua including Manokwari, Merauke, Jayapura and Sorong and there are still possibilities for additional additions [6].

The results of interviews with respondents about the existence of these types of plants are native to the local area but also have been induced by other regions. Most of the introduced plants come from fruits because of their fresh taste and have been cultivated in community plantations.

Table 2. Percentage of use of native and introduced food plants

No.	Plants	Number of types	Number of percentages
1.	Original	40	75,5
2.	Introduction	13	24,5
	amount	53	100

According to the results of table 2 calculations, native food plants have a greater percentage of 75.5% compared to 24.5% introduced plants. Based on these observations, it was concluded that the community still retains native plant food even though they have been in contact with other tribes and also though not continuously utilizing these native plants.

Plant cultivation is mostly done in the yard and plantation area. The yard is more dominated by spices and certain vegetables and other alternative foods and vegetables are more dominant in the garden (table 1). The method of farming in the community has led to a modern system so that the possibility of receiving cultivated induction plants is even greater.

4. Conclusion

The diversity of food plants originating from the yard, garden, coast, and forest consists of 53 species of plants and 31 families. The highest utilization type of Arecaceae family with the number of plant species 4. The results of observation are based on the utilization of local foodstuffs, namely as a staple food, vegetables, fruits, alternative foods, and distinctive foods. The percentage of food plants is still

dominated by local or native food compared to introduce food, this shows that the community still maintains existing germplasm, even though certain foodstuffs are not consumed continuously.

References

[1] Yapen Islands Regency Public Relations 2016 *Hydrology* http://kepyapenkab.go.id/view-view/ Hydrology December 20 2017
[2] Hunter D and Fanzo J 2013 *In Fanzo J D, Hunter T, Borelli F, Mattei (eds.) Biodiversity International Taylor & Francis Routledge Group* pp i-13
[3] Suseto H 2004 DEPTAN http: //www.google.com./iptek.apjii.or.id Accessed September 25, 2005
[4] Central Agency of Statistics Regency of Yapen Islands 2017 BPS in Yapen Islands Regency Technical implementation Unit 2016 Biak http: // Sakip.Pertanian.go.id/admin/file/biak%20%20full.pdf
[5] Widjono A, Mokay Y, Amisnaipa H. Lakuy, A. Rouw, A. Resubun and Wihyawari P 2000 *Types of Sago in Some Areas of Papua Bogor*: Indonesian Center for Agriculture Socio-Economic Research
[6] Fanzo, J M, Holmes P, Junega, E, Muzingusi, I F, Smith B Ekesa, and Bergamini N 2011 *Rome Italy: Biodiversity International* p 78