



Survey on the wild edible fruits in the selected barangays of Burgos, Ilocos Sur, Philippines: A preliminary checklist

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Abstract

The survey confirms the presence of wild edible fruits in the selected barangays of Burgos, Ilocos Sur in the Philippines comprising of 45 fruit species classified into 39 genera and 25 families. From the identified species, 40 are utilized as snacks, four as spice, one for medicinal use, two as condiment, 30 are forage food, and three for industrial uses. Twenty-two (22) species are categorized of least concerned (LC) and two (2) of which are considered vulnerable (VU) under the IUCN Red List. *Uvaria rufa* which is commonly consumed as snack and regarded as famine food is the most culturally significant fruit (CI = 1.59) while *Lantana camara*, *Sterculia foetida*, *Brucea javanica*, *Garcinia dulcis*, *Ficus septica*, *Artocarpus camansi*, *Causonis trifolia*, *Semecarpus cuneiformis*, *Ceiba pentandra*, and *Tinospora glabra* were found to have the lowest computed CI value of 0.01. Annonaceae (Cif = 1.78) was found to be of highest cultural significance followed by Myrtaceae (Cif = 1.38) and Sapotaceae (Cif = 0.50) among the twenty-five families studied.

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Introduction

In the Philippines, many people gather a wide range of fruits from the wild because of their taste, cultural purposes, availability of the fruits, dietary supplements, or to tide over food shortages. Wild edible fruits (WEFs) are edible fruit species that are not cultivated and are collected in their natural habitats. However, wild fruit consumption has gradually reduced due to the introduction of introduced fruits. Introduced fruits are fruits that are not native to the region or country where they are being consumed. They are usually imported from other countries and can be quite expensive due to the cost of transportation and import duties. Intensive commercialization and promotion of high-value fruit crops, including introduced species, has reduced consumer awareness of wild species, including WEFs (Suwardi *et al.*, 2023).

WEFs are better than cultivated fruits when it comes to nutrients (Yangdon *et al.*, 2022). They are also free from chemical spray; hence these wild fruits are anti-cancer and very much recommended for public consumption (Tombali, 2016). According to the Food and Agriculture Organization (FAO) (2011), wild food resources comprise a variety of edibles, including WEFs, vegetables, mushrooms, orchids, canes, and herbal plants; and WEFs contribute the most to the total number of wild edible resources. During times of hunger or drought, poor communities in rural parts of the world, wild edible fruit species serve an important role in additional food provision and addressing food gaps. In a more recent report by the Food and Agriculture Organization of the United Nations (FAO) (2020), the existing global food system is thought to provide adequate calories for the entire world. However, about two billion people still experience hunger or lack access to nutritious meals. Wild food plants are traditional foods that tend to be richer in micronutrients than cultivated crops (Hunter *et al.*, 2019).

Ethnobotanical documentation can increase environmental awareness of our rich natural resources (Tombali, 2016). The investigation on the wild edible fruits (WEFs) in a region is also a way to

help in addressing worldwide concern on food security and malnutrition through the promotion of nutritious local foods to meet dietary needs (Chua-Barcelo, 2014). In the Philippines, published ethnobotanical documentation of our WEFs is still very few. In the town of Burgos in Ilocos Sur, there are no recent or available accounts about the wild edible fruits (WEFs) aside from being an ideal site for such study due to its relatively undisturbed environment. The list generated from ethnobotanical documentation can be utilized as a food and biodiversity guide to help strengthen the familiarity of the local population with the available WEFs in their area. It gives an opportunity for tourists and non-native visitors to be acquainted to the available native fruits they may find in the area. Furthermore, the survey can help strengthen the preservation of plant-based knowledge of the community which are critical in future researches and development of effective of management policies for biodiversity and conservation concerns. Survey on available natural resources may introduce an array of rarely utilized resources and potential use which eventually leads to greater conservation importance of the species. This is for the fact that the conservation and importance status is not merely anchored in the rarity or abundance of species but also in terms of their uses (Torres & Malaya, 2021; Torres, 2017). Thus, the present investigation aims to create the first list of some wild edible fruits (WEFs) that can be found in the town of Burgos province of Ilocos Sur, Philippines, describe their uses, and cultural significance.

The general aim of this study was to conduct a survey of edible wild fruits found in the selected barangays of Burgos, Ilocos Sur. Specifically, the study aimed to list the edible wild fruits in the selected barangays of Burgos, Ilocos Sur, determine the cultural significance index of species and families of the identified edible fruits and their utilization, and create a compendium of edible fruits found in the selected barangays of Burgos, Ilocos Sur.

Materials and Methods

The research design of the study was both qualitative and descriptive. Specifically, the study involved

observing and describing the subject without influencing the parameters. A survey was conducted in the selected barangays of Burgos, Ilocos Sur. The municipality of Burgos has 26 barangays, six of which are near the mountains and served as the study sites. These are the barangays of Balugang, Bessang, Lubing, Manaboc, Mapanit, and Sabangan Pinggan, Burgos, Ilocos Sur during the months of September 2022 to January 2023. Table 1 shows the coordinates of the study sites.

Table 1. Geographical coordinates of the selected study sites.

Barangays	Latitude	Longitude	Altitude
Balugang	17.3039 ° N	120.5226 ° E	28.7 yd above sea level
Bessang	17.2964 ° N	120.5362 ° E	46.3 yd above sea level
Lubing	17.3131 ° N	120.5375 ° E	309.3 yd above sea level
Manaboc	17.3345 ° N	120.5362 ° E	31.4 yd above sea level
Mapanit	17.2949 ° N	120.5491 ° E	287.1 yd above sea level
Sabangan Pinggan	17.2940 ° N	120.5193 ° E	38.6 yd above sea level

*° N stands for degrees North; ° E stands for degrees East; yd stands for the unit Yard

The study was approved by the institutional research ethics committee of the Don Mariano Marcos Memorial State University, the municipal unit, and the barangay. Prior informed consent was obtained before administering the survey questionnaire to the respondents. Purposive sampling was used based on the population of the six barangays. The researchers accessed a particular subset of people aged 20 and up who were chosen as survey participants because they fit a particular profile, such as being born and raised in the area or having lived there for a long time.

The 120 participants were informed about the purpose of the study and the details of the consent form, especially the confidentiality of their identity and information they would disclose in the survey. The questionnaire was administered after they agreed to participate in the study. The survey questionnaire consisted of questions about their knowledge of wild edible fruits, how they are consumed, where they usually grow or are seen, and their common uses,

such as snacks, spices, fodder, medicine, condiments, and other uses.

The survey and collection of fruits were conducted using two methods: primary and secondary data collection. Primary data was collected from the respondents, while secondary data was collected from books, magazines, and journals. Fruit samples were collected from the information gathered through the survey. The researchers coordinated with the locals to assist in locating the wild edible fruits. Some plants were not in season of bearing fruits, so they were revisited later for fruit sample collection.

The researchers used a DSLR camera (Sony a6000, Model No. 4914868, Thailand) and mobile phone (iPhone, NNFP2CH/A, Canada) to capture photographs of the sample fruit-bearing plant species and the collected fruits. Collected fruits were placed in a jar containing a mixture of distilled water and 90% of ethanol alcohol. Collected leaves of plant species without fruit and free from diseases were preserved using a customized plant presser made of plywood and screws as the main materials, old newspaper, rope for twining, paper for mounting, and labels specifying the type of plants that were pressed. The plant presser was used to preserve and retain the morphological character of the plant.

The plant species were identified by plant taxonomy experts from the Department of Biological Sciences of the Central Luzon State University. The IUCN Red List was consulted to categorize the collections into the suggested recent degree of importance. Co's Digital Flora was used to further investigate their local and global status distribution. All of the identified edible fruits from the survey were collated in a compendium. A compendium is a collection of all the survey data in book form. It will consist of the following:

- Local and scientific names of each wild edible fruit
- Conservation and distribution status
- Cultural significance index
- Photographs of the fruits
- Information on the nutritional content of wild edible fruits based on the secondary data

The survey results were summarized and tallied. After listing the fruits, the cultural significance was calculated using the equation used by Pardo-de-Santayana *et al.* (2007) in order to know the uses of each species.

Results and Discussion

The listed fruits are classified into 39 genera and 25 families. These family belongs to the Anacardiaceae, Annonaceae, Bombaceae, Capparaceae, Cluciaceae, Combretaceae, Cordiaceae, Cucurbitaceae,

Ebenaceae, Fabaceae, Menispermaceae, Moraceae, Muntingiaceae, Musaceae, Myrtaceae, Oxalidaceae, Passifloraceae, Phyllanthaceae, Rutaceae, Sapotaceae, Simaroubaceae, Solanaceae, Sterculiaceae, Verbenaceae, and Vitaceae. The identified fruits are used for snack (40), as spice (4), medicinal use (1), as condiment (2), forage and/or famine food (30) and for others uses (3), such as table food and dye/ink. The Table 2 depicts the occurrence of each WEFs in each of the visited barangays of Burgos.

Table 2. List of Edible Wild Fruits found in the 6 (six) barangays of Burgos, Ilocos Sur.

Family	Scientific name	Local name	Availability in the Barangays					
			BL	BS	LB	MN	MP	SP
Anacardiaceae	<i>Semecarpus cf. cuneiformis</i> Blanco.	Kamiring						✓
	<i>Anacardium occidentale</i> L.	Kasoy		✓	✓	✓	✓	✓
	<i>Spondias purpurea</i> L.	Sarguelas	✓	✓	✓	✓		
Annonaceae	<i>Annona reticulata</i> L.	Anonas		✓	✓		✓	✓
	<i>Uvaria rufa</i> (Dunal) Blume	Alagat	✓	✓	✓	✓	✓	✓
	<i>Polyalthia suberosa</i> (Roxb.) Thwaites	Karamukom					✓	✓
	<i>Annona muricata</i> L.	Guyabano		✓	✓		✓	✓
Bombacaceae	<i>Ceiba pentandra</i> (L.) Gaertn	Kasapanglay					✓	
Capparaceae	<i>Capparis cf. micracantha</i> DC.	Tarabtab		✓	✓			✓
Cluciaceae	<i>Garcinia dulcis</i> (Roxb.) Kurz	Bakuog				✓		
Combretaceae	<i>Terminalia catappa</i> L.	Lugo	✓				✓	✓
Cordiaceae	<i>Cordia dichotoma</i> G.Forst.	Anonang	✓		✓		✓	✓
Cucurbitaceae	<i>Melothria pendula</i> L.	Pipino-pipino		✓		✓	✓	
Ebenaceae	<i>Diospyros</i> sp.	Balingagta	✓	✓	✓	✓	✓	✓
Fabaceae	<i>Pachyrhizus erosus</i> (L.) Urb.	Singkamas	✓			✓	✓	✓
	<i>Samanea saman</i> (Jacq.) Merr.	Gargaruba	✓				✓	✓
	<i>Pithecellobium dulce</i> (Roxb.) Benth.	Kamantiris	✓	✓		✓	✓	
	<i>Leucaena leucocephala</i> (Lam.) de Wit	Ipil-ipil	✓			✓		
	<i>Tamarindus indica</i> L.	Salamagi		✓	✓	✓	✓	
Menispermaceae	<i>Tinospora glabra</i> (Burm.f.) Merr.	Unknown		✓				
Moraceae	<i>Morus alba</i> L.	Kamkamuras			✓			
	<i>Ficus benjamina</i> L.	Balete			✓		✓	
	<i>Ficus septica</i> Burm.f	Raya raya					✓	
	<i>Artocarpus cf. camansi</i> Blanco	Pakak					✓	
	<i>Ficus ulmifolia</i> Lam.	Oplas		✓			✓	
	<i>Ficus nota</i> (Blanco) Merr.	Tibbeg				✓	✓	
	<i>Streblus asper</i> Lour.	Al- aludig		✓		✓	✓	
Muntingiaceae	<i>Muntingia calabura</i> L.	Mansanita	✓	✓		✓	✓	✓
Musaceae	<i>Musa balbisiana</i> Colla	Balayang		✓	✓		✓	
Myrtaceae	<i>Syzygium</i> sp.	Lomboy	✓	✓	✓	✓	✓	✓
	<i>Psidium guajava</i> L.	Native bayabas	✓	✓	✓	✓	✓	✓
Oxalidaceae	<i>Averrhoa bilimbi</i> L.	Piyas	✓	✓	✓		✓	✓
Passifloraceae	<i>Passiflora foetida</i> L.	Pusa-pusa	✓	✓		✓	✓	✓
Phyllanthaceae	<i>Kirganelia reticulata</i> (Poir.) Baill.	Bagbagutot					✓	
	<i>Cicca acida</i> (L.) Merr.	Karamay	✓		✓	✓	✓	
Rutaceae	<i>Glycosmis greenei</i> Elmer	Mal- malutot					✓	
Sapotaceae	<i>Chrysophyllum cainito</i> L.	Kaimito		✓	✓			✓
	<i>Pouteria campechiana</i> (Kunth) Baehni	Tiyesa		✓	✓	✓	✓	✓
Simaroubaceae	<i>Brucea cf. javanica</i> (L.) Merr.	Byu					✓	
Solanaceae	<i>Physalis angulata</i> L.	Pal- palituok				✓	✓	






Family	Scientific name	Local name	Availability in the Barangays					
			BL	BS	LB	MN	MP	SP
Sterculiaceae	<i>Sterculia foetida</i> L.	Bangar					✓	
Verbenaceae	<i>Lantana camara</i> L.	Bangbangsit				✓		
Vitaceae	<i>Leea indica</i> (Burm.f.) Merr.	Alumamani						✓
	<i>Tetrastigma harmandii</i> Planch. in DC	Ariwat	✓	✓	✓	✓	✓	✓
	<i>Causonis trifolia</i> (L.) Raf	Unknown						✓

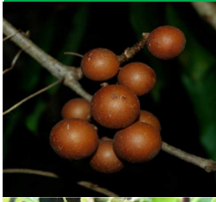








Fruit is present. Local name languages: Ilk- Ilocano; Tag- Tagalog. BL: Balugang; BS: Bessang; LB: Lubing; MN: Manaboc; MP: Mapanit; SB: Sabangan Pinggan.









The value of fruits depends on the number use of reports (UR). Table 3 shows the Cultural Significance Index of the identified WEFs in selected Barangays of Burgos, Ilocos Sur in terms of usage. Out of the forty-five (45) identified










species of fruits, forty (40) of which are used for snacks, four (4) are used for spice, one (1) is used as medicine, two (2) are fermented as vinegar, thirty (30) are used for forage, and three (3) serve as table food and dye/ink.











Table 3. Cultural Significance Index of the identified WEFs in selected Barangays of Burgos, Ilocos Sur in terms of usage.






Identified fruits	Local name	Scientific name	Cultural Significance Index (CI) values depending on their usage					
			Snack	Spice	Medicinal Use	Condiments	Forage	Others
	Alagat	<i>Uvaria rufa</i>	0.84	---	---	---	0.75	---
	Al- aludig	<i>Streblus asper</i>	0.04	---	---	---	0.03	---
	Alumamani	<i>Leea indica</i>	---	---	---	---	0.01	0.01
	Anonang	<i>Cordia dichotoma</i>	0.03	---	---	---	0.03	---
	Anonas	<i>Annona reticulata</i>	0.04	---	---	---	0.03	---

Identified fruits	Local name	Scientific name	Cultural Significance Index (CI) values depending on their usage					
			Snack	Spice	Medicinal Use	Condiments	Forage	Others
	Ariwat	<i>Tetrastigma harmandii</i>	0.15	---	---	---	0.08	---
	Bagbagutot	<i>Kirganelia reticulata</i>	0.02	---	---	---	0.02	---
	Bakuog	<i>Garcinia dulcis</i>	0.01	---	---	---	---	---
	Balayang	<i>Musa balbisiana</i>	0.07	---	---	0.03	0.06	---
	Balete	<i>Ficus benjamina</i>	0.01	---	---	---	0.01	---
	Balingagta	<i>Diospyros sp.</i>	0.21	---	---	---	---	---
	Bangar	<i>Sterculia foetida</i>	0.01	---	---	---	---	---
	Bangbangsit	<i>Lantana camara</i>	0.01	---	---	---	---	---
	Bayabas	<i>Psidium guajava</i>	0.24	0.13	0.18	---	0.20	---

Identified fruits	Local name	Scientific name	Cultural Significance Index (CI) values depending on their usage					
			Snack	Spice	Medicinal Use	Condiments	Forage	Others
	Byu	<i>Brucea javanica</i>	0.01	---	---	---	---	---
	Gargaruba	<i>Samanea saman</i>	0.04	---	---	0.02	---	---
	Guyabano/ Bayubana	<i>Annona muricata</i>	0.01	---	---	---	---	---
	Ipil- ipil	<i>Leucaena leucocephala</i>	---	---	---	---	0.01	0.01
	Kaimito	<i>Chrysophyllum cainito</i>	0.12	---	---	---	0.11	---
	Kamantiris	<i>Pithecellobium dulce</i>	0.08	---	---	---	0.06	---
	Kamiring	<i>Semecarpus cuneiformis</i>	0.01	---	---	---	---	---
	Kamkamuras	<i>Morus alba</i>	0.04	---	---	---	0.03	---

Identified fruits	Local name	Scientific name	Cultural Significance Index (CI) values depending on their usage					
			Snack	Spice	Medicinal Use	Condiments	Forage	Others
	Karamay	<i>Cicca acida</i>	0.05	0.04	---	---	---	---
	Karamukom	<i>Polyalthia suberosa</i>	0.01	---	---	---	0.01	---
	Kasapanglay	<i>Ceiba pentandra</i>	0.01	---	---	---	---	---
	Kasoy	<i>Anacardium occidentale</i>	0.08	---	---	---	---	---
	Lomboy	<i>Syzygium sp.</i>	0.38	---	---	---	0.25	---
	Lugo	<i>Terminalia catappa</i>	0.02	---	---	---	0.02	---
	Mal-malutot	<i>Gycosmis greenii</i>	0.05	---	---	---	0.05	---
	Mansanita	<i>Muntingia calabura</i>	0.15	---	---	---	0.15	---
	Oplas	<i>Ficus ulmifolia</i>	0.02	---	---	---	0.01	---

Identified fruits	Local name	Scientific name	Cultural Significance Index (CI) values depending on their usage					
			Snack	Spice	Medicinal Use	Condiments	Forage	Others
	Pakak	<i>Artocarpus camansi</i>	---	---	---	---	---	0.01
	Pal- palituok	<i>Physalis angulata</i>	0.05	---	---	0.05	---	---
	Pipino- pipino	<i>Melothria pendula</i>	0.03	---	---	---	---	---
	Piyas	<i>Averrhoa bilimbi</i>	0.14	0.07	---	0.10	---	---
	Pusa- pusa	<i>Passiflora foetida</i>	0.18	---	---	0.18	---	---
	Raya- raya	<i>Ficus septica</i>	---	---	---	---	0.01	---
	Salamagi	<i>Tamarindus indica</i>	0.04	0.03	---	---	0.04	---
	Sarguelas	<i>Spondias purpurea</i>	0.17	---	---	---	0.13	---
	Singkamas	<i>Pachyrhizus erosus</i>	0.04	---	---	---	0.04	---
								

Identified fruits	Local name	Scientific name	Cultural Significance Index (CI) values depending on their usage					
			Snack	Spice	Medicinal Use	Condiments	Forage	Others
	Tarabtab	<i>Capparis micracantha</i>	0.03	---	---	---	0.03	---
	Tibbeg	<i>Ficus nota</i>	0.01	---	---	---	0.01	---
	Tiyesa	<i>Pouteria campechiana</i>	0.14	---	---	---	0.13	---
	*	<i>Causonis trifolia</i>	0.01	---	---	---	---	---
	*	<i>Tinospora glabra</i>	---	---	---	---	0.01	---

Legend: *: no known or reported local name from the volunteers; ---: no value

The fruits were also prepared in a variety of ways, including being eaten fresh, infused, and used as concoctions. In this study, there are 37 fruit species that were prepared freshly (sadiwa) such as Singkamas (*Pachyrhizus erosus*), Karamay (*Cicca acida*), Piyas (*Averrhoa bilimbi*), Gargaruba (*Samanea saman*), Kamkamuras (*Morus alba*), Balete (*Ficus benjamina*), Lugo (*Terminalia catappa*), Bangbangsit (*Lantana camara*), Pipino- pipino (*Melothria pendula*), Tiyesa (*Pouteria campechiana*), Anonas (*Annona muriculata*), Native bayabas (*Psidium guajava*), Balayang (*Musa balbisiana*), Raya- raya (*Ficus septica*). Lomboy (*Syzygium* sp.), Alagat (*Uvaria rufa*), Pusa- pusa (*Passiflora foetida*), Bagbagutot (*Kirganelia reticulata*), Pal- palituok (*Physalis angulata*), Mal- malutot (*Glycosmis greenei*), Oplas (*Ficus ulmifolia*), Tibbeg (*Ficus nota*), Al- aludig (*Streblus asper*), Alumamani (*Leea indica*), Karamukom (*Polyalthia suberosa*), Tarabtab (*Capparis micracantha*), Kaimito (*Chrysophyllum*

cainito), Kamantiris (*Pithecellobium dulce*), Sarguelas (*Spondias purpurea*), fruits with an unknown local name (*Tinospora glabra*) and (*Causonis trifolia*), Anonang (*Cordia dichotoma*), Kamiring (*Semecarpus cuneiformis*), Guyabano (*Annona muricata*), Salamagi (*Tamarindus indica*), Balingagta (*Diospyros* sp.), Byu (*Brucea javanica*), Bangar (*Sterculia foetida*), Ariwat (*Tetrastigma harmandii*), Kasoy (*Anacardium occidentale*), and Mansanita (*Muntingia calabura*). There are 10 fruit species that are prepared through infused such as Singkamas (*Pachyrhizus erosus*), Karamay (*Cicca acida*), Piyas (*Averrhoa bilimbi*), Mal- malutot (*Glycosmis greenei*), Gargaruba (*Samanea saman*), Tiyesa (*Pouteria campechiana*), Anonas, Lomboy (*Syzygium* sp.), Alagat (*Uvaria rufa*), Sarguelas (*Spondias purpurea*), Salamagi (*Tamarindus indica*), and Kasoy (*Anacardium occidentale*). There are 11 fruit species that are used as concoction and as an additive, these include Karamay (*Cicca acida*), Piyas (*Averrhoa bilimbi*),

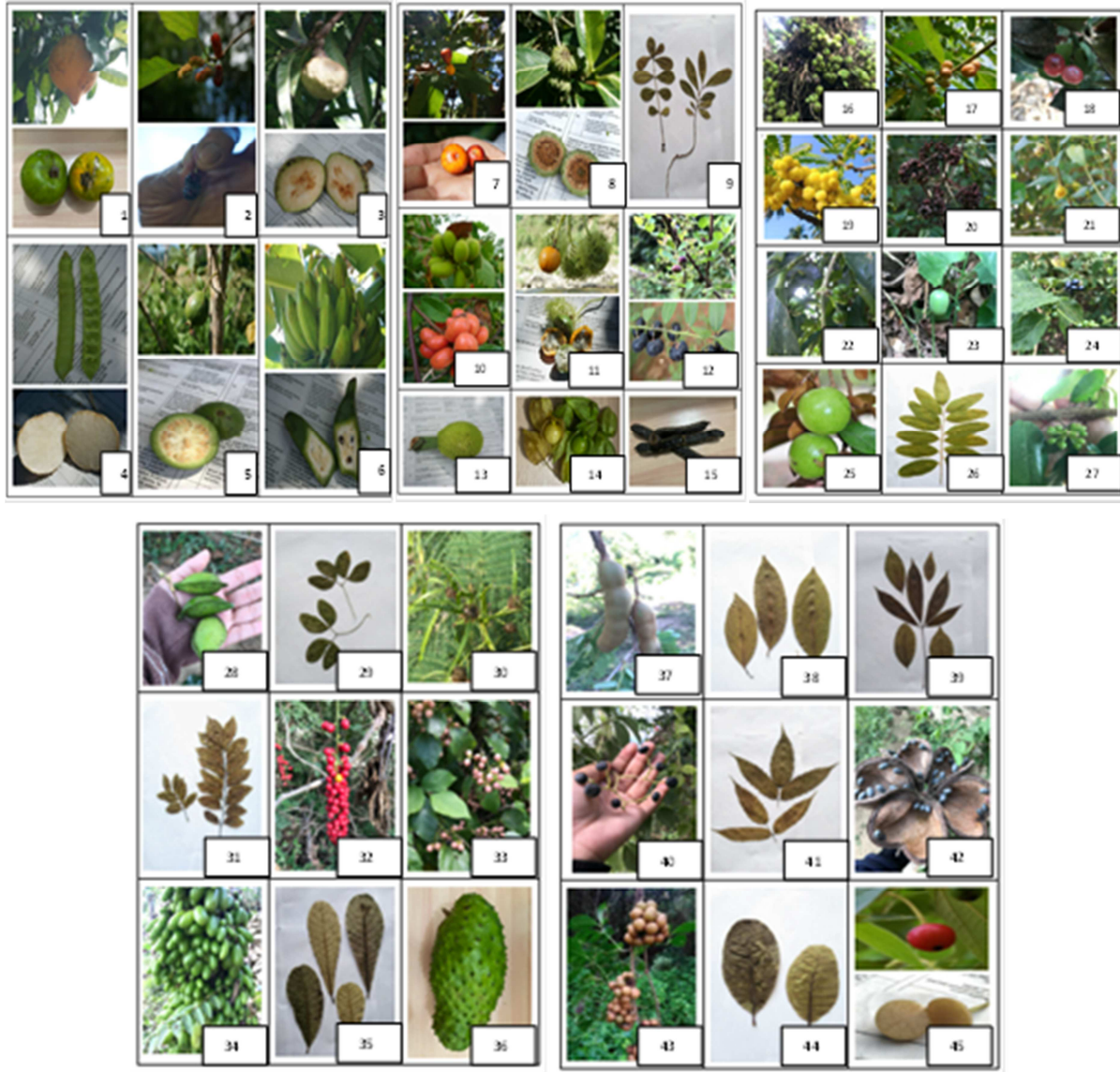


Fig. 1. Photograph of the WEFs or the fruit-bearing species found from the six (6) barangays of Burgos, Ilocos Sur, Philippines.

- 1: *Pouteria campechiana* (Tiyesa), 2: *Morus alba* L. (Kamkamuras), 3: *Annona reticulata* L. (Anonas), 4: *Pachyrhizus erosus* (Singkamas), 5: *Psidium guajava* L. (Bayabas), 6: *Musa balbisiana* Colla (Balayang), 7: *Ficus benjamina* L. (Balete), 8: *Ficus septica* Burm.f. (Raya-raya), 9: *Syzygium* sp. (Lomboy), 10: *Uvaria rufa* (Alagat), 11: *Passiflora foetida* L. (Pusa-pusa), 12: *Kirganelia reticulate* (Bagbagutot), 13: *Artocarpus* cf. *camansi* (Pakak), 14: *Physalis angulata* L. (Pal-palituok), 15: *Samanea saman* (Gargaruba); 16: *Glycosmis greenei* Elmer (Malmalutot), 17: *Ficus ulmifolia* Lam. (Oplas), 18: *Ficus nota* (Tibbeg), 19: *Streblus asper* Lour. (Al-aludig), 20: *Leea indica* (Alumamani), 21: *Cicca acida* (Karamay), 22: *Lantana camara* L. (Bangbangsit), 23: *Melothria pendula* L. (Pipino-pipino), 24: *Garcinia dulcis* (Bakuog), 25: *Chrysophyllum cainito* L. (Kaimito), 26: *Capparis* cf. *micracantha* (Tarabtab), 27: *Polyalthia suberosa* (Karamukom), 28: *Terminalia catappa* L. (Lugo), 29: *Pithecellobium dulce* (Kamantiris), 30: *Leucaena leucocephala* (Ipil-ipil). 31: *Spondias purpurea* L. (Sarguelas), 32: *Tinospora glabra* (Unknown-BS), 33: *Cordia dichotoma* (Anonang), 34: *Averrhoa bilimbi* L. (Piyas), 35: *Semecarpus* cf. *cuneiformis* (Kamiring), 36: *Annona muricata* L. (Guyabano), 37: *Tamarindus indica* L. (Salamagi), 38: *Diospyros* sp. (Balingagta), 39: *Ceiba pentandra* (Kasapanglay), 40: *Causonis trifolia* (Unknown-MP), 41: *Brucea* cf. *javanica* (Byu), 42: *Sterculia foetida* L. (Bangar), 43: *Tetrastigma harmandii* (Ariwat), 44: *Anacardium occidentale* L. (Kasoy), 45: *Muntingia calabura* L. (Mansanita).

Salamagi (*Tamarindus indica*), Bakuog (*Garcinia dulcis*), Pakak (*Artocarpus camansi*) and Native bayabas (*Psidium guajava*). Heated, Ipil- ipil (*Leucaena leucocephala*), Singkamas (*Pachyrhizus erosus*), and Pakak (*Artocarpus camansi*). Macerated, Karamay (*Cicca acida*) and Salamagi (*Tamarindus indica*). Fig. 1 shows the wild fruit-bearing species observed in this investigation.

Many purposes were described for the wild fruits such as snack, spice, fruit preserves (jam, jelly, marmalade, and candies), pickles, medicinal use, vinegar, wine, famine food, and other uses. As food, fruits are consumed in different ways, such as peeled off, eaten with the skin on, and boiled. Fruits that are consumed by peeling off the skin such as Bangar, Singkamas (fruit and tuber), Pusa-Pusa, Pal-Palituok, Balayang, Bayubana, Pakak, Kaimito, Tiyesa, Tarabtab, Ariwat, Kasapanglay, Kamiring, Anonas, Allagat, Tibbeg, Kamantiris, Raya-Raya, Oplas, Lugo, Balingata, and Gargaruba. Some of these has to be roasted before eating such as Bangar and Lugo, on which shell of the kernel has to be opened with a hard object like a rock, wood, or a hammer. On the other hand, some fruit can be eaten unpeeled. These fruits are Al-aludig, Native Bayabas, Piyas, Kasoy, Anonang, Bagbagutot, Karamay, Balete, Lomboy, Kamkamuras, Pipino-Pipino, Salamagi, Kasoy, Sarguelas, Karamukom,

Malmalutot, Mansanita, Byu, and Ariwat. While, Singkamas, Ipil-ipil, and Pakak has to be boiled before consumption.

In many countries, including the Philippines, some wild edible fruit species are utilized and valued for traditional medicine, such as Buron, Barakbak, and Porngipang (Duguma, 2020). With the increasing price of many pharmaceutical products, these wild fruit species can be utilized by people living in remote places as herbal medicines to prevent ailments. Many wild fruit species have been developed as medicines. In the survey, *Psidium guajava* L. (native Bayabas) fruit is mentioned to be used as medicine. Some identified WEFs species, their leaves (such as Native Bayabas, Guyabano, Tarabtab and Ariwat) and roots (such as Alumamani) are also used as medicine. The WEFs has to be conserved, cultivated and promoted to avoid the threats of extinction and over forage. Hence, proper documentation like compendium of these wild fruit species of the locality can strengthen the value of preservation and conservation of them for the future generations. It may also increase environmental awareness to the rich natural resources of Burgos, Iloocos Sur (Tombali, 2016). Figs 2, 3, 4, 5, 6, and 7 shows the rank of each identified fruit-bearing species in terms of usage.

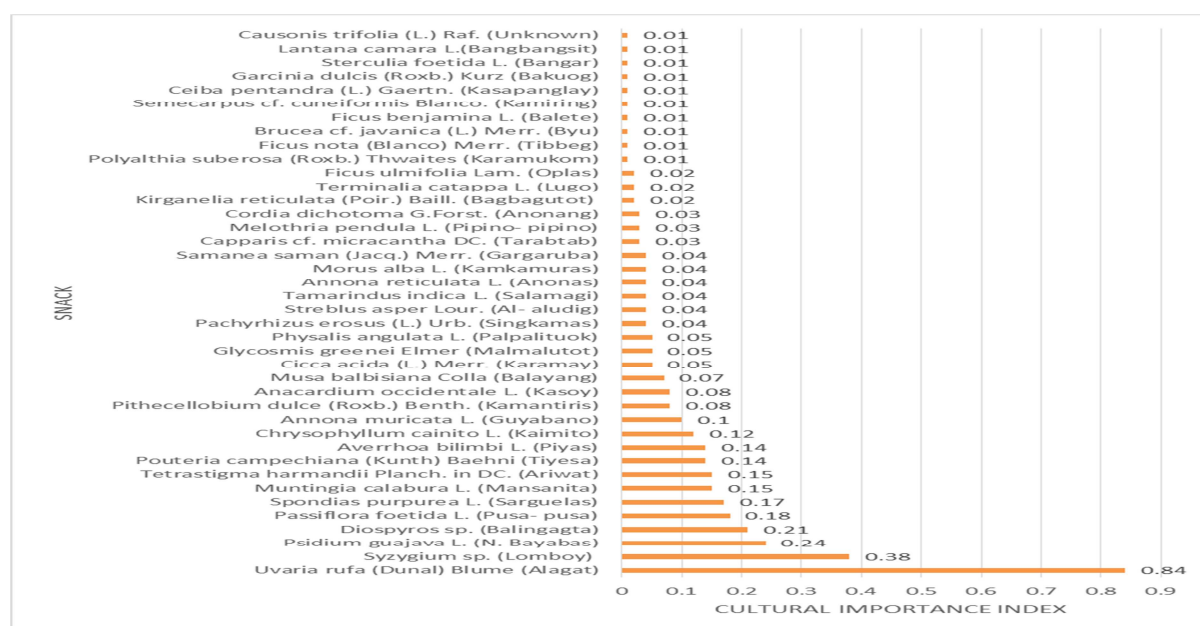


Fig. 2. Ranking of wild edible fruits as snack.

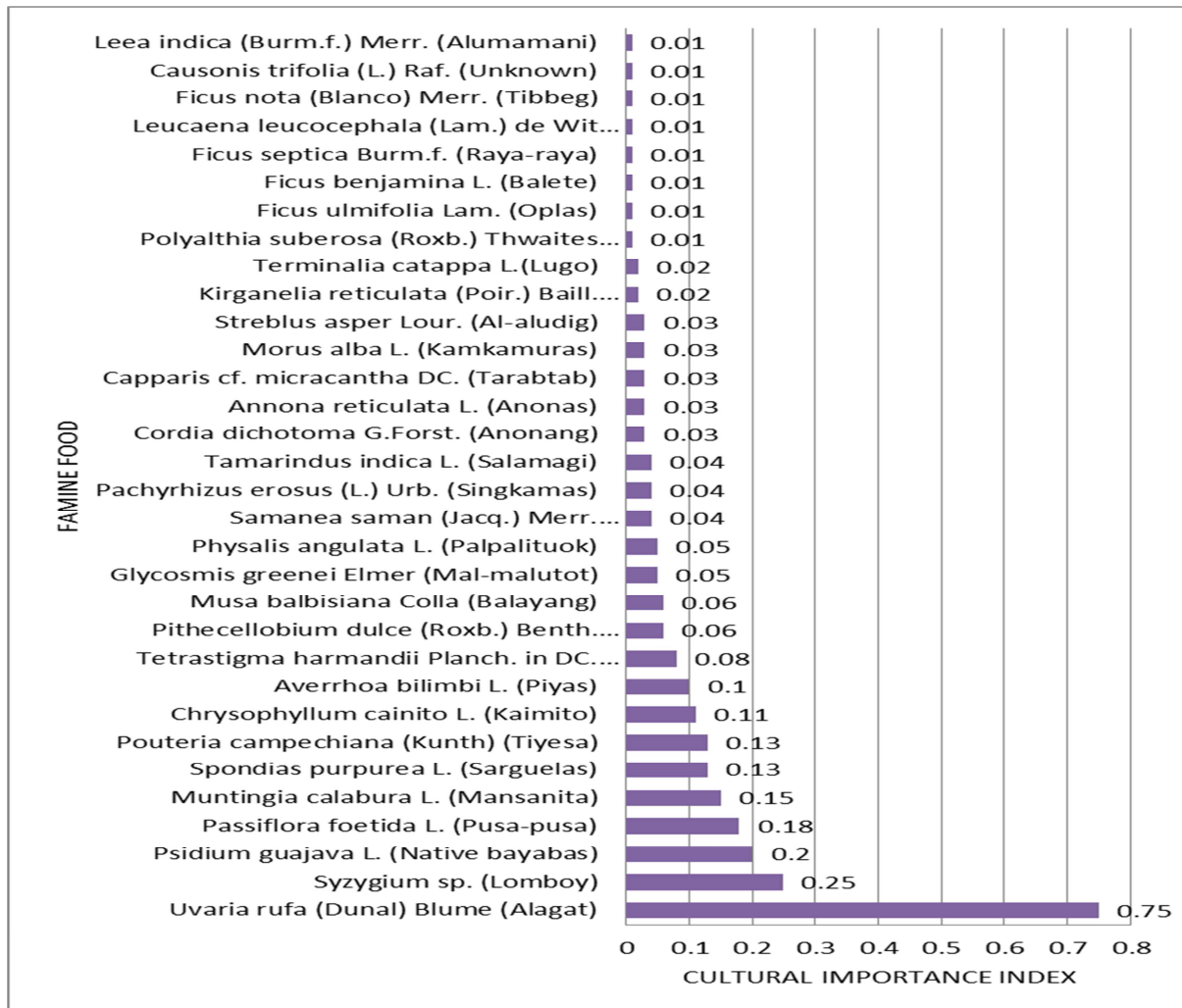


Fig. 3. Ranking of wild edible fruit as forage and/or famine food.

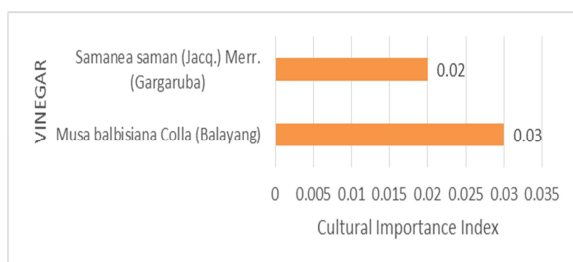


Fig. 4. Ranking of wild edible fruit as condiment.

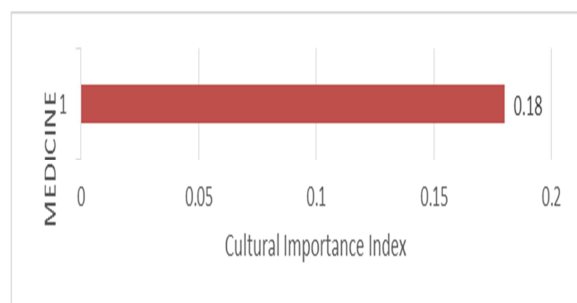


Fig. 6. Ranking of wild edible fruit as medicine.

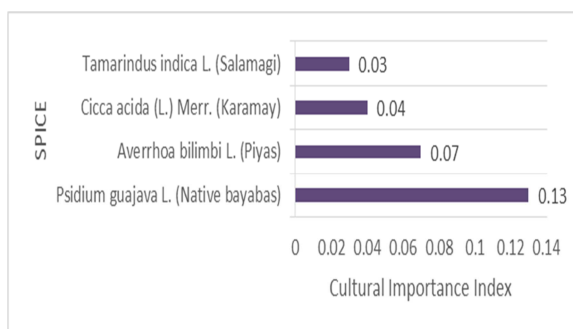


Fig. 5. Ranking of wild edible fruit as spice.

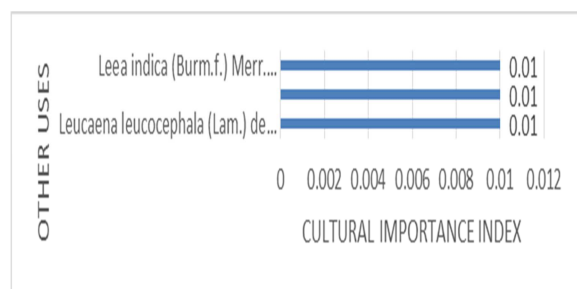


Fig. 7. Ranking of wild edible fruit for other uses.

Uvaria rufa is found to be the most culturally significant fruit, this fruit is found in the six barangays of Burgos, Ilocos Sur with a total of 1.59 CI. Moreover, it has two use of categories such as snacks and forage food. The fruit with the lowest rank at CI with a total of 0.01 are *Lantana camara*, *Sterculia foetida*, *Brucea javanica*, *Garcinia dulcis*, *Ficus septica*, *Artocarpus camansi*, *Causonis trifolia*, *Semecarpus cuneiformis*, *Ceiba pentandra*, and *Tinospora glabra*. Their lowest rank is due to their limited use of reports and only used as food (snacks), famine, or other uses. The cultural significance of families is calculated by adding the indices of each family's species. Annonaceae ranked first among the twenty-five families studied (see Fig. 8). It has the highest cultural significance index (Cif) value of 1.78, followed by Myrtaceae and Sapotaceae, which have values of 1.38 and 0.50, respectively.

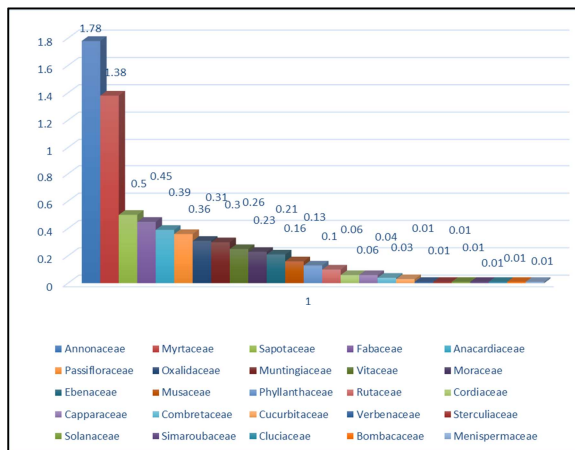


Fig. 8. Ranking of edible wild fruits families based on cultural significance index of families (Cif).

Conclusion

A total of forty-five (45) wild edible fruit species were listed and identified in the selected barangays of Burgos, Ilocos Sur. Twenty-two (22) are considered least concerned (LC) and two (2) are considered vulnerable (VU). *Uvaria rufa* has the highest CI index value of 1.59, thus this implies that *Uvaria rufa* is used and consumed more, than the other fruit species. Annonaceae has the highest CI value of 1.78 and it indicates that this family is widely used and it is the most important family for a given category of use. This present investigation and the compendium

generated from this study will serve as a guide to the existing natural resources in the area that can be utilized as food. This will also serve as a good reference for future research and the development of effective management policies for biodiversity and conservation concerns. It will augment in addressing global concern and problem by promoting functional foods.

Furthermore, the findings of this study have implications for the conservation and sustainable use of wild edible fruits in Burgos, Ilocos Sur. The overharvesting of wild edible fruits can lead to their depletion, so it is important to develop sustainable methods of harvesting these fruits. For example, communities can be encouraged to plant wild edible fruits in their backyards or community gardens. This would help to ensure a sustainable supply of these fruits for future generations. In addition, the findings of this study highlight the importance of wild edible fruits as a source of food and nutrients. These fruits are a valuable part of the local diet, and they can also be a source of income for local communities. Therefore, it is important to protect and conserve these fruits for the benefit of the local people and the environment.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Increase awareness of the importance of wild edible fruits. This can be done through education campaigns, public outreach, and the promotion of traditional knowledge about wild edible fruits.
2. Promote sustainable harvesting practices. This includes harvesting only what is needed, leaving some fruits on the tree to reproduce, and avoiding destructive harvesting methods.
3. Replant wild edible fruits. This can be done in home gardens, community gardens, and protected areas.
4. Protect wild edible fruit habitats. This includes protecting forests, watersheds, and other areas where wild edible fruits grow.
5. Conduct a wider scale survey of wild edible fruits. This would be beneficial to describe WEFs found in each region in the country.

6. Consider conservation and enhancing abundance of WEFs that have been found as vulnerable (VU) under IUCN Red List. This can be done through nursery production and properly guided and monitored planting activities. By taking these steps, we can help to ensure that wild edible fruits continue to play an important role in the Philippines for generations to come.

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