



Biodiversity of potentially “*lalapan*” vegetables in Kampung Adat Naga, Tasikmalaya, Indonesia

Nurlinda Septiani, Diana Hernawati*, Rinaldi Rizal Putra

Biology Education, Faculty of Teacher Training and Education, Universitas Siliwangi, Indonesia

*Corresponding author: hernawatibiologi@unsil.ac.id

ARTICLE INFO

Article history

Received: 25 June 2020

Revised: 2 August 2020

Accepted: 12 October 2020

Keywords:

Biodiversity

Ethnobotany

Kampung Naga

Lalapan

Vegetables



ABSTRACT

Kampung Naga is a traditional village or ethnic in Tasikmalaya, Indonesia with a wealth of biodiversity. This ethnic group, with local knowledge, always involves natural richness in everyday life (ethnobotany). However, not many know about utilizing potentially *lalapan* vegetables that are commonly used daily by the indigenous people of Kampung Naga. Therefore, this research aims to describe the diversity of potentially *lalapan* vegetables in the ethnobotanical study used by the people of Kampung Adat Naga. Therefore, this research aims to describe the diversity of potentially fresh plants in the ethnobotanical study used by the people of Kampung Adat Naga. The ethnobotanical studies covered include plant species, plant organ parts used, habitus, habitat type, and relative frequency of citation (RFC) calculations. This study was conducted by the qualitative-survey method. The data was analyzed by using an exploratory-descriptive approach and analyzed descriptively quantitatively. The results showed 46 species of potentially fresh plants commonly used by local people in Kampung Adat Naga and 22 families. The plant's widely used part is the 56% leaf organ, a much-found habitus of 37% herb. For habitat types, as much as 38% are found in gardens. In contrast, the highest RFC value is possessed by species *Cucumis sativus* L. of 0.93. The local wisdom pattern owned by the Kampung Naga community about planting “*lalapan*” is a form of fundamental knowledge. Therefore it is essential to maintain its preservation as a form of local cultural diversity.

© 2020 Universitas Negeri Jakarta. This is an open-access article under the CC-BY license (<https://creativecommons.org/licenses/by/4.0>)

Septiani, N., Hernawati, D., Putra R, R. (2020). Biodiversity of potentially “*lalapan*” vegetables in Kampung Adat Naga Tasikmalaya, Indonesia. *Biosfer: Jurnal Pendidikan Biologi*, , 13(2), 201-215. <https://doi.org/10.21009/biosferjpb.v13n2.201-215>

INTRODUCTION

Indonesia is an archipelagic country with unique geology and ecosystems. Thus, it increases fauna, flora, and microbes (Darajati et al., 2016). The uniqueness of the geology and ecosystem is one reason for the Indonesian bioregion division into the Wallace Line, the Weber Line, and the Lydekker Line (Widjaja et al., 2014). This uniqueness and biological wealth must be managed and optimally utilized to benefit the world community in general and the surrounding community in particular. If it is not managed and appropriately utilized, Indonesia's biodiversity wealth will be threatened by its existence and sustainability (Cleary & DeVantier, 2019).

One of the biological wealth that has been managed and utilized for a long time by Indonesia's people is the wealth of flora (plants). The richness of biodiversity in Indonesian plants describes the number of plant species that make up a community based on taxonomy (Padhy et al., 2017). The use of various kinds of plants is for macro-scale economic interests, such as various types of orchids, bamboo, palms, corpse flowers, ramin, and gaharu buaya (Widjaja et al., 2014). Apart from macro-scale economic interests, Indonesian people also use plants as a source of herbal medicine. As has been researched by Roosita et al. (2008), that people use plants as herbal medicines in treating various diseases, with the result that 61% of people believe and prove 117 types of plants as herbal medicines that can overcome various kinds of complaints.

In line with Roosita et al. (2008), Putri et al. (2016) have researched plants' use as herbal medicine by the Ranggawulung City Forest Area community. The results show that the surrounding community has utilized at least 32 types of plants used for traditional medicine using plant parts in leaves, stems, roots, tubers, sap, bark, and seeds. Besides that, plants are also used for food purposes, as researched by (Cita 2020). She explains that Nyangkewok Village people have used 101 types of food plants, which are grouped into 48 families, and the most widely used is rice (*Oryza sativa*). In addition to plants used for direct consumption, there are also several plants whose organs (especially the leaves) are used as food wrappers, including *Ficus septica*, *Pisonia alba*, *Tectona grandis*, and *Macaranga tanarius* (Slamet et al., 2020).

The community's dependence on this plant is in a society in general and occurs in community groups, particularly in indigenous village communities. The community's dependence on the use of plants will be greater than that of the general public. The indigenous people manage the land and natural resources based on a long history and through an active interaction with nature that has created a local social and cultural system (Kleden, E., 2004 in Hidayat et al., 2010). One of the traditional villages in Indonesia, especially in West Java, is Kampung Naga.

Like other traditional villages, Naga Traditional Village still maintains its ancestral heritage's cultural values and traditions to have a unique identity from its people. The Kampung Adat Naga is located in a hilly location in the Salawu area, which connects Tasikmalaya Regency and Garut Regency (Harashani, 2018) (Figure 1). In addition to the uniqueness of culture and ancestral traditions that are still firmly adhered to and the unique from the people of the Naga Traditional Village people, how to manage and utilize various types of plants for daily needs, especially those consumed directly fresh vegetables (*lalapan*).

Various studies in Naga Traditional Villages that have been carried out include: the culture and local wisdom (Harashani, 2018; Qodariah & Armiyati, 2013), the dynamics and interactions of the Naga Traditional Village community with outside communities (Ningrum, 2012), and the prospect of Kampung Adat Naga as an indigenous village (Illiyani, 2018). Meanwhile, research on the relationship between the community and the surrounding environment, especially regarding plants' use as fresh vegetables/*lalapan* that can be consumed, is still not documented.

Therefore, as part of the Sundanese people who habitually consume plants to be fresh vegetables/*lalapan* (Hendariningrum, 2018), the people of Naga Traditional Village certainly have their characteristics in utilizing and cultivating plants fresh vegetables/*lalapan*. There are hooks yes with religious elements amid society. Therefore, it is essential to know the study of plant biodiversity, which has the potential of fresh vegetables/*lalapan* in the Kampung Adat Naga, so it becomes the aim of this research.

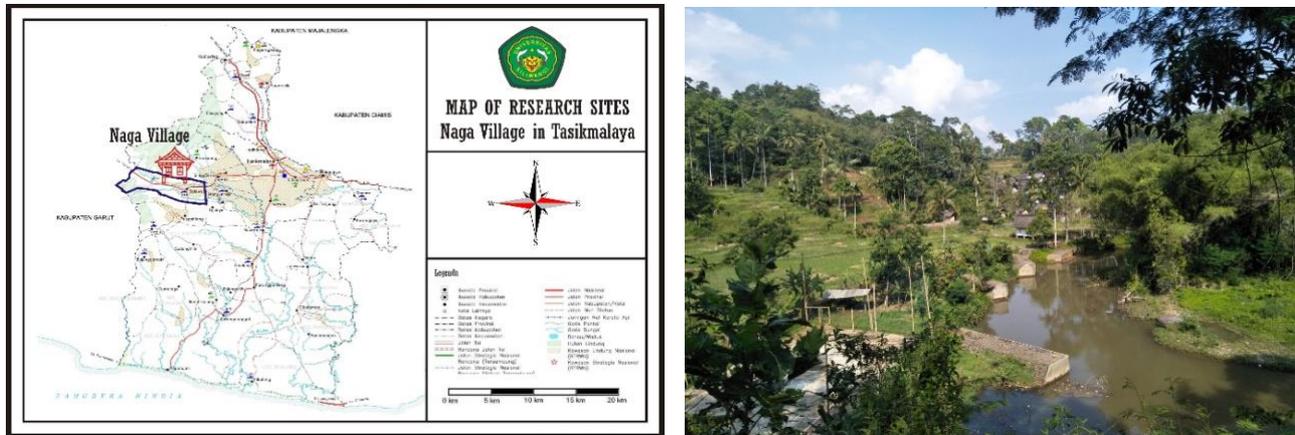


Figure 1. Map and overview of Kampung Adat Naga

METHODS

Research Design

This research used a qualitative method with survey techniques through a descriptive exploratory approach (Umair, Altaf, & Abbasi, 2017). That aims to describe the state of a phenomenon. In this study, it is not intended to test specific hypotheses but only describes the existence of a variable, symptom, or condition. The data collection was done by snowball sampling based on crucial informants as the primary data source, including traditional leaders (punduh adat), indigenous peoples, and the young generation in Kampung Adat Naga (Handcock & Gile, 2011)

Population and Samples

The population used in this study were all 295 of Kampung Naga indigenous people. A sample called the informant was determined, consisting of community leaders, tribal leaders, village heads, heads of villages, and other reliable sources who know things strictly related to the research. The total informant of 14 people consisted of 6 men and eight women, with the youngest informant age eight years and the oldest informant of 86. The explored components include the types of plants utilized, parts of plant organs used, habitus, habitat type, and relative frequency of citation calculations (RFC). These things collect by counting the number of informants stating the use of species divided by the total number of informants, as the following calculation formulation. The RFC value has a range from 0 to 1.

$$RFC = \frac{Fc}{N}$$

Instrument

The instrument used in this study was an interview instrument (Table 1) that included a brief profile of respondents, knowledge of the types of plants used as fresh vegetables, parts of plants used as fresh vegetables, and how to process them. There was also a deepening related

to the status of plant cultivation in the interview, which was used as fresh vegetables along with traditional wisdom related to the conservation of fresh vegetables.

Table 1.

Interview instrument

Number	Question item
1.	What do you know about <i>lalapan</i> ?
2.	What types of vegetables are here?
3.	Do you know the philosophy of naming <i>lalapan</i> in this traditional village?
4.	Do you know what <i>lalapan</i> are often consumed in this traditional village?
5.	Where did the <i>lalapan</i> plants that were eaten in this traditional village come from or obtained from?
6.	Do you know how to find out and determine which plants can be consumed with which cannot be consumed?
7.	Do you eat <i>lalapan</i> every day?
8.	Do you know that <i>lalapan</i> have other functions and benefits besides being consumed?
9.	Do you know, how to processing <i>lalapan</i> that function as medicine?
10.	Did you know that <i>lalapan</i> are beneficial for health?
11.	What are some parts of <i>lalapan</i> that you usually consume in this traditional village?
12.	How is the processing of <i>lalapan</i> in this traditional village (eaten directly / raw material, processed first / steamed, boiled)?
13.	How to use edible plant preparations in this traditional village (used at certain times such as morning, afternoon, night)?
14.	Where do these " <i>lalapan</i> " grow?
15.	Do you know the <i>lalapan</i> in this traditional village for consumption or selling to the market?
16.	Do you know is there any vegetables that are typical plants of this traditional village?
17.	Are there vegetables that are used as properties in traditional events?
18.	How the ancestors or elders here inherit habits in terms of utilizing plants and how to consume them?
19.	How do you pass down the habit of eating or consuming plants around you to the young generation here?
20.	Do you know that there are special lessons to inform local communities about edible plants as fresh vegetables in this traditional village?

Procedure

In carrying out this research, the first stage was a preliminary study to look at the Kampung Adat Naga's initial conditions, including licensing for traditional institutions. The second stage is taking care of licensing to relevant institutions, especially the Kampung Naga Guides Association. Furthermore, in the third stage, semi-structured interviews (Tabel 1) were conducted with traditional leaders, indigenous peoples, and young people. Next, the fourth step will be to collect and document edible plants as vegetables in Kampung Adat Naga's vicinity, both in the yard and in the wild. These stages are illustrated in the following chart (Figure 2).

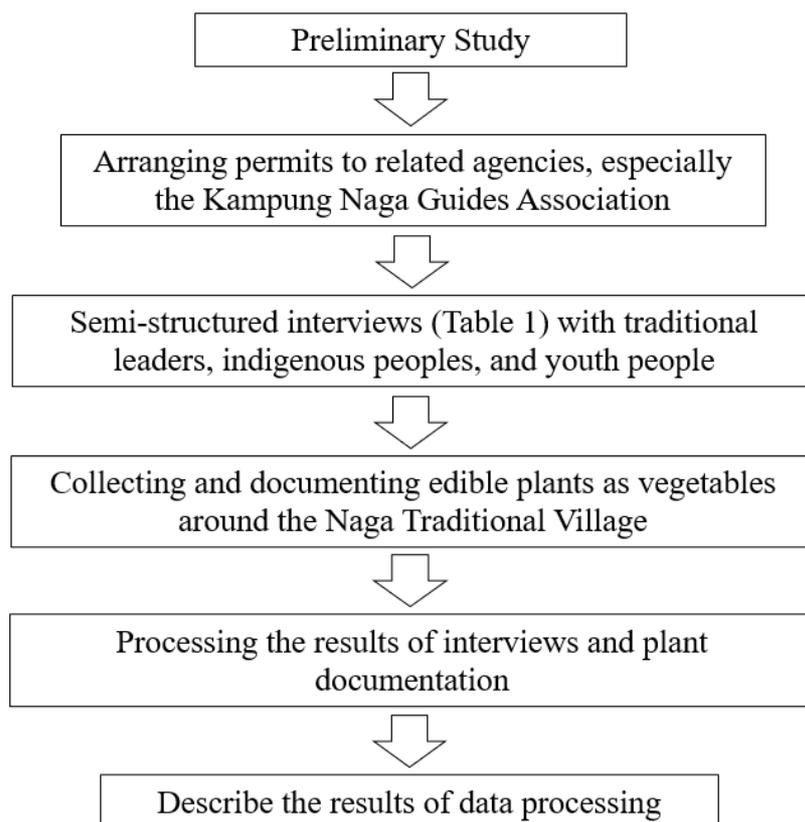


Figure 2. The stages of the research carried out

Data Analysis Techniques

Data is analyzed in a qualitative descriptive manner by identifying the plant off-site and clarified using libraries from Van Steenis (1962) and known specimens and reference for identifying plants found. Taxonomy validation is done using the help database of the Integrated Taxonomic Information System (ITIS). Analysis of each species' local interests is done by calculating the relative frequency of citation (Tardío & Pardo-De-Santayana, 2008).

RESULTS AND DISCUSSION

The traditional wisdom found in Kampung Naga people is knowledge, understanding of customs and habits, nature, and how to build good relationships. It is about the view of life and the management of natural resources in the forest and the deliberately cultivated. Indigenous peoples live by relying on abundance given by nature, thus treating every life in nature well.

The community of Kampung Adat Naga is a small part that does not do the cultivation of potentially fresh plants. This situation is due to its high impact that can be found around the house, garden, or forest. The following list of potential new plant species in Kampung Adat Naga, Tasikmalaya, can be seen in Table 2.

Table 2.List of potentially *lalapan* vegetables in Kampung Adat Naga Tasikmalaya

Number	Family/ Species	Local Name	Parts used	A	H	TP	RFC
Acanthaceae							
1.	<i>Staurogyne elongata</i> Kuntze	Reundeu	FOL	ML	HR	MT, GD	0,43
Alismataceae							
2.	<i>Limnocharis flava</i> (L.) Buchenau	Genjer	FOL, CAU	ML, R	HR	PL, RF	0,71
Amaranthaceae							
3.	<i>Amaranthus spinosus</i> L.	Bayem	FOL, CAU	R	HR	GD, YRD	0,14
Anacardiaceae							
4.	<i>Anacardium occidentale</i> L.	Jambu mede	FOL	ML	TR	GD	0,14
Apiaceae							
5.	<i>Centella asiatica</i> (L.) Urban	Antanan gondrong	FOL	ML	HR	RF, MT	0,71
6.	<i>Eryngium foetidum</i> L.	Walang geni	FOL	ML, K	HR	YRD, RF, GD	0,19
7.	<i>Oenanthe javanica</i> DC.	Tespong	FOL	ML	PR	PKR	0,19
Araliaceae							
8.	<i>Hydrocotyle sibthorpiodes</i> Lamb.	Antanan alit	FOL	ML	HR	RF	0,19
9.	<i>Polyscias fruticosa</i> Miq	Kadongdong china	FOL	R	PR	PKR	0,19
Asteraceae							
10.	<i>Conyza sumatrensis</i>	Jalantir	FOL	ML	PR	RF, GD	0,14
11.	<i>Emilia sonchifolia</i> DC.	Jonge	FOL	ML	PR	GD, RF	0,19
12.	<i>Lactuca sativa</i> var. <i>acephala</i> L.	Saladah bokor	FOL	ML	HR	PKR	0,19
13.	<i>Pluchea indica</i> L.	Baluntas	FOL	ML	PR	GD	0,14
14.	<i>Spilanthes paniculata</i>	Jotang	FOL	ML	HR	YRD, GD, MT	0,29
Brassicaceae							
15.	<i>Brassica juncea</i> L. Czern	Sawi	FOL	R	HR	RF, GD	0,07
16.	<i>Brassica oleracea</i> L.	Kol	FOL	ML	HR	RF	0,29
17.	<i>Brassica pekinensis</i> L.	Pecai	FOL	R	HR	GD	0,43
18.	<i>Brassica rapa</i> vc. <i>Saisim</i>	Sausin	FOL	R	HR	RF	0,43

Number	Family/ Species	Local Name	Parts used	A	H	TP	RFC
Caricaceae							
19.	<i>Carica papaya</i> L.	Gedang	FOL, FRU	R	PR	GD, YRD	0,71
Convolvulaceae							
20.	<i>Ipomoea batatas</i> (L.) Lam	Huwi	FOL	K	HR	YRD	0,14
21.	<i>Ipomoea aquatic</i> Forsk.	Kangkung	FOL, CAU	R,ML	HR	PL, RF, GD	0,50
Cucurbitaceae							
22.	<i>Cucumis sativus</i> L.	Bonteng	FRU	ML	LN	KB, RF	0,93
23.	<i>Cucurbita moschata</i> Duchesna	Waluh sieum	FRU, FOL	R,K	LN	RF, GD	0,43
24.	<i>Momordica charantica</i> Linn.,	Paria	FRU	R	LN	RF	0,14
Euphorbiaceae							
25.	<i>Cnidioscolus aconitifolius</i> Mill.	Chaya-chaya	FOL	K	PR	GD, YRD	0,14
26.	<i>Manihot esculenta</i> Crantz	Sampeu	FOL	R,K	PR	GD, YRD, RF	0,86
27.	<i>Sauropus androgynus</i> (L.) Merr	Katuk	FOL	K,R,ML	PR	YRD, RF, GD	0,29
Fabaceae							
28.	<i>Leucaena leucocephala</i>	Peuteuy selong	FRU, FOL	ML	TR	GD, YRD	0,36
29.	<i>Parkia javanica</i>	Peuteuy	FRU	ML	TR	GD	0,29
30.	<i>Pithecollobium lobatum</i> Benth	Jengkol	FRU	ML	TR	GD	0,36
31.	<i>Phaseolus lunatus</i>	Roay	FRU	ML	LN	GD	0,07
32.	<i>Phaseolus vulgaris</i> L	Buncis	FRU	ML	LN	RF, GD	0,07
33.	<i>Psophocarpus tetragonolobus</i>	Jaat	FRU	K	LN	GD, RF	0,07
34.	<i>Vigna cylindrica</i> (L.) Skeels.	Kacang panjang	FRU, FOL	ML	LN	RF	0,43
Lamiaceae							
35.	<i>Ocimum basilicum</i> L.	Surawung	FOL	ML	PR	YRD, GD	0,43
Lecythidaceae							
36.	<i>Planchonia valida</i> BI.	Putat	FOL	ML	TR	MT	0,19
Malvaceae							
37.	<i>Helicteres isora</i>	Tetenggoran	FOL	ML	PR	MT	0,07

Number	Family/ Species	Local Name	Parts used	A	H	TP	RFC
	Moraceae						
38.	<i>Artocarpus heterophyllus</i>	Nangka (tongtolang)	FRU	ML	TR	GD	0,07
	Primulaceae						
39.	<i>Ardisia elliptica</i>	Ki lampeuni	FOL	ML	PR	GD	0,07
	Solanaceae						
40.	<i>Solanum macrocarpon</i>	Terong buweuk	FRU	ML,R	PR	GD, YRD	0,14
41.	<i>Solanum melongena</i> L.	Terong	FRU	ML	PR	GD, YRD	0,36
42.	<i>Solanum nigrum</i> L.	Leunca	FRU	ML	PR	YRD, GD, RF	0,64
43.	<i>Solanum torvum</i> Swartz	Takokak	FRU	ML,R	PR	KB	0,19
	Urticaceae						
44.	<i>Pilea trinervia</i> Wight	Pohpohan	FOL	ML	HR	MT, RF, KB	0,50
	Woodsiaceae						
45.	<i>Diplazium esculentum</i>	Pakis sayur	FOL	K	HR	MT	0,07
	Zingiberaceae						
46.	<i>Curcuma longa</i>	Koneng	RHI	ML	HR	YRD, GD	0,14

Description : A: application (how to use); H: habitus; TP: habitat type; RFC: *relative frequency of citation*

Parts used : CAU: *caulis* (stem); RHI: *rhizoma* (rhizome); RAD: *radix* (root); FOL: *folium* (leaves); FLO: *flos* (flowers); FRU: *fructus* (fruit)

A : ML: eaten directly; R: boiled; K: steamed

TP : MT: mountain; RF: rice fields; YRD: yard; GD: garden; PL: pool

H : TR: tree; PR: perdu; LN: liana; HR: herbs

The edible or wild edible plant is a source of nutrition and contributors to the needs of human food (De Cortes Sánchez-Mata et al., 2016). The form of ethnobotanical study of plant potentials used in Kampung Naga as a whole is found as many as 46 species belonging to the 22 families. The most percentage of the family Fabaceae as many as seven species (16%) include *Leucaena leucocephala*, *Parkia javanica*, *Pithecolobium lobatum*, *Phaseolus lunatus*, *Phaseolus vulgaris*, *Psophocarpus tetragonolobus*, *Vigna cylindrica*. Sukenti et al. has also studied the use of plants from the Fabaceae family (2016) in the Sasak community, which consists of *Vigna radiata*, *Vigna sinensis*, *Glycine max*, *Arachis hypogaea*, *Lablab purpureus*, and *Psophocarpus tetragonolobus*, which state that the species These types of plants are commonly used by the Sasak people to serve as food. Of course, these plants differ from the habits found in the people of the Naga Traditional Village, most of which make plants belonging to the Fabaceae family as fresh vegetables or eaten raw along with side dishes. Overall, the plant family's diversity is edible as *lalapan* vegetables in Kampung Adat Naga, can be seen in Figure 3.

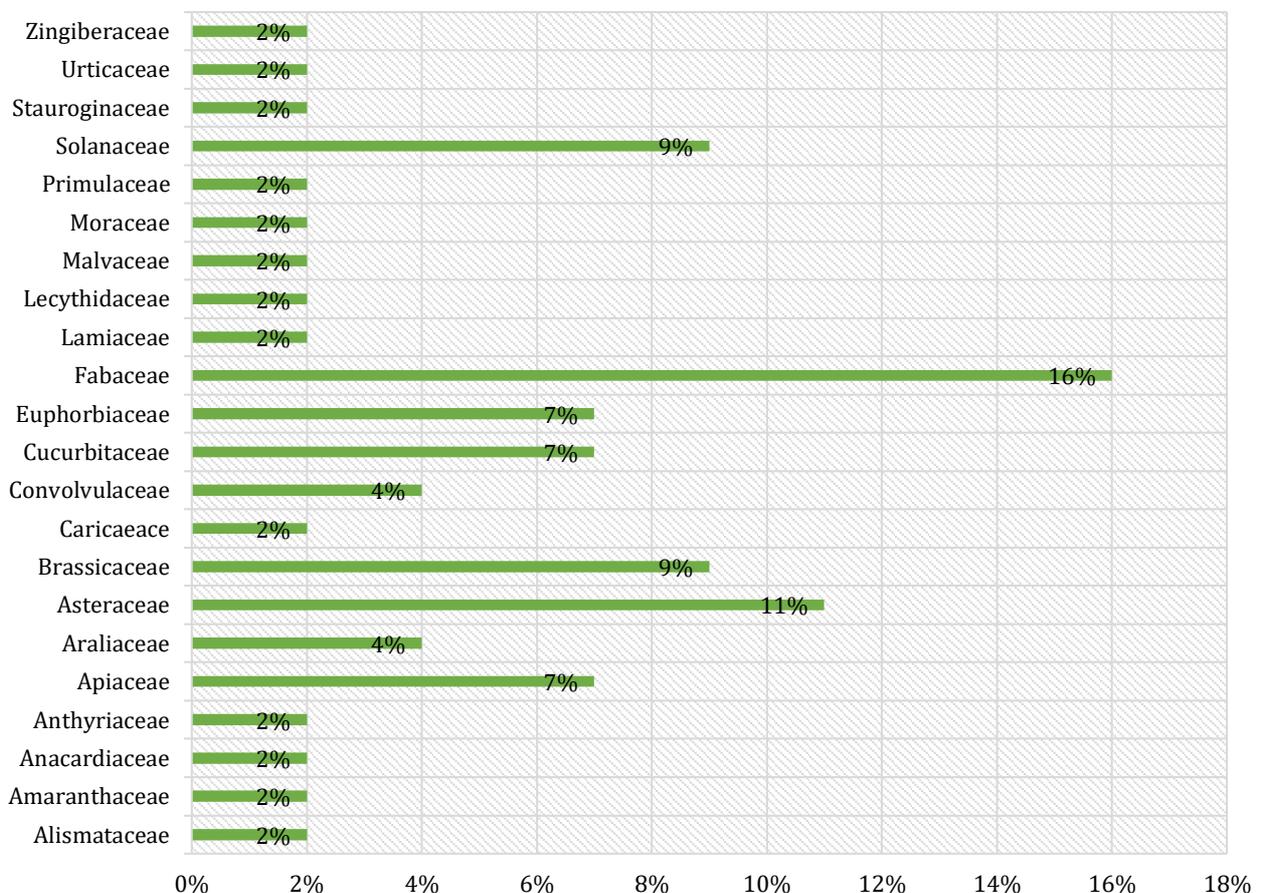


Figure 3. Various of *lalapan* vegetables families as fresh vegetables

Fabaceae is one of the largest families in Angiospermae plants, so its spread is also quite spacious (Bargali, 2016). Fabaceae are always identified with family legumes or nuts. Many essential plants belong to this tribe, with various uses such as seed parts, flowers, leaves, bulbs, stems, and roots that can be used by humans.

Plant organ parts have functional, ecological, and medical relationships (Uprety et al., 2012). Parts of plant organs are used in the form of leaves only, fruit or seeds, stems, or the rhizome. Each has different characteristics. Overall, part of the organ used in edible plants as *lalapan* vegetables in Kampung Adat Naga can be seen in Figure 4.

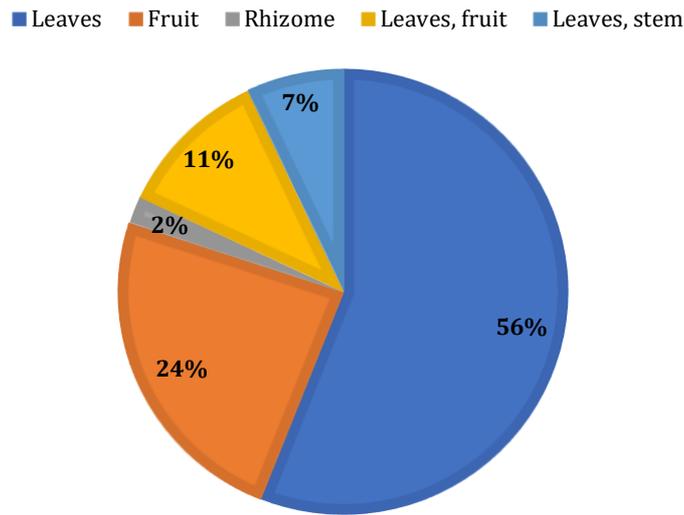


Figure 4. Various of organs used in edible *lalapan* vegetables

Figure 4 explains that the plant organ part of the leaf is the most widely used. About 56% includes 26 species, a fruit of 24% as many as 11 species. While the rhizome only 2% of the ordinary people used Kampung Naga community. Research Cahyanto et al. (2018) also strengthens the use of leaves as fresh vegetables in the Sundanese community in Subang Regency, West Java. The results of this study explain that the Sundanese people in Subang Regency use at least 50 types of plants as fresh vegetables, most of which come from the Asteraceae family. Of the total 50 types of plants, 33 are consumed raw or without going through the processing process. Then, of the total 50 types of plants, 32 types of plants are used on the leaves as fresh vegetables.

As it is known together that the leaves are the main organ of a plant and can grow is faster compared to other parts of the organ. In the leaves, the metabolic process also takes place with the richness of chlorophyll so that the product of photosynthesis is abundant in the leaves (Moore, Boote, & Sanderson, 2016; Ross, 2013). Vegetables that are sourced from leaves contain many essential elements that play a role in cell growth, red blood cell formation, and preventing anemia, such as those found in vitamin B9. Then, green vegetables also contain sufficient amounts of vitamin K and play a role in blood clotting and preventing bleeding. Apart from these two vitamins, there is also inositol content that protects the liver, heart, and digestive system. Also, the content of carotenoids and other provitamins play a role in maintaining cells and body tissues (Butnariu & Butu, 2015). Hence the identical *lalapan* vegetables utilized to be eaten directly or eaten raw are to prefer the leaves with taste sweeter and fresh. Next to the heading (part of the plant above the ground) is the most accessible part.

Knowledge about the use of plants as fresh vegetables has been carried out from generation to generation in the indigenous communities of Kampung Naga. The serving of daily food combined with fresh vegetables makes children and young people accustomed to eating fresh vegetables. This is certainly a lesson that knowledge passed down from generation to generation will make positive habits for the next generation. Given, the consumption of vegetables and fruits among the younger generation has decreased. Based on the research results by Aswatini et al. (2008) in 2007, that the level of consumption of vegetables and fruits of the Indonesian people on average only reached 13.1% of total food expenditure. This result is still far from the expenditure on food and beverages, which reached 21.3%. In line with Aswatini et al. (2008), (Davis et al., 2009) explained that vegetable consumption in developed countries (the United States) has also decreased significantly so that schools collaborate with

related health institutions to implement programs to increase fruit consumption. And vegetables massively among senior high school students.

According to its habitat, the distribution of plants can be divided into four habitus, namely tree, perdu, liana, and herb (Steenis, 1962). The diversity found to be associated with the potential of *lalapan* vegetables in Kampung Adat Naga for the most widely used group of herb habitus reaches 37%, around 17 species. In comparison, the lowest tree habitus is about 13% (6 species). The overall diversity of plant habitus potentially as *lalapan* vegetables in Kampung Adat Naga can be seen in Figure 5.

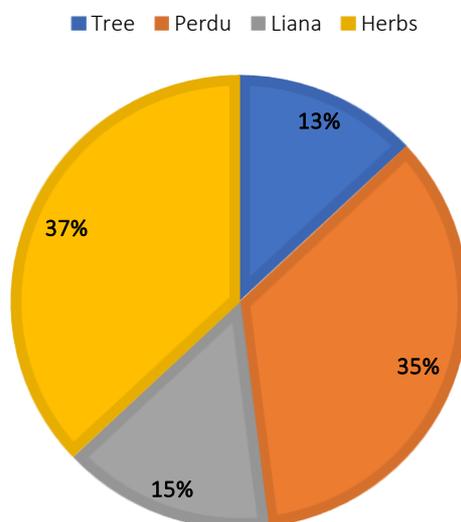


Figure 5. Various of edible *lalapan* vegetable habitus plants in Kampung Adat Naga

The herb habitus group is cosmopolitan; hence it is straightforward to spread and grow in almost all places or habitats, which has a considerable amount in nature (Tjitrosoepomo, 1998). Herbal plants have a soft stem characteristic, watery and not woody (wet stems), spherical, or mostly shaped. It is easier to eat or consume, especially when eaten raw than other habitus (Latifa, 2015; Steenis, 1962).

Most plants can live in a few habitats, and only a small part lives in a single habitat. Of course, this is related to the environment in which it grows and develops naturally. Plant potential as a *lalapan* vegetables utilized by local people Kampung Adat Naga mostly comes from the garden of about 41%. The rest is taken from the mountain/forest, paddy fields, ponds and deliberately planted in the back yard. Overall, the potential percentage of plant habitat is potential as *lalapan* vegetables in Kampung Adat Naga can be seen in Figure 6.

Kampung Naga people are mostly farmers, fulfilling the needs of food, all depending on the people's harvest. Therefore, land use is always used to fulfill daily needs. The plantation land is more utilized because the plant species in the garden are mostly plants that are often utilized and have economic value. The interference of local communities did the cultivation. The planting pattern between families and other families is sometimes different, assuming that more diversity and society can take advantage of it if needed. Of course, the family azas and mutual assistance in this village are still well maintained.

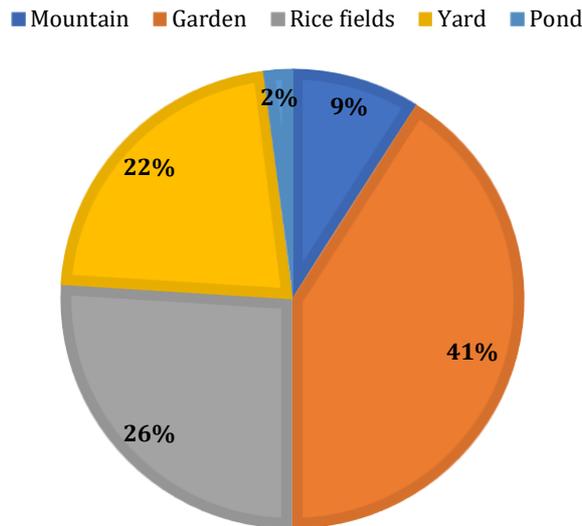


Figure 6. Various of edible *lalapan* vegetable habitat type in Kampung Adat Naga

Relative frequency of citation (RFC) is used to determine the probability between the number of informants that provide quotations for each species and all informants' sum. The results illustrate the local interests of each species. RFC Calculated with the formula.

$$RFC = \frac{Fc}{N}$$

Fc is the number of informants mentioning species usability; N is the sum of all informants (Tardío & Pardo-De-Santayana, 2008). The RFC value of the *lalapan* vegetable potency plant was used by local people in Kampung Adat Naga, as presented in table 3. The RFC values for the two highest species are *Cucumis sativus* and *Manihot esculenta*, respectively, at 0.93 and 0.86, which means that most communities widely recognize the plant. Nineteen species of *lalapan* vegetables have a potential of only 61.54% known to local people. The lowest RFC value is twenty-five, meaning it is partly less known to be used as a fresh plant because it is wild and is not always available in the surrounding area. Some species include the *Helicterrace Isora*, *Ardisia elliptica*, *Diplazium esculentum*.

Table 3.

Relative frequency of citation (RFC) plant potential of *lalapan* vegetables

RFC	Number of species
0,00 - 0,20	25
>0,20 - 0,40	7
>0,40 - 0,60	8
>0,60 - 0,80	4
>0,80 - 0,99	2
1,00	-

One of the reasons for low RFC value is the eating of dietary changes of the young generation community that causes the decline of local genius that is owned by the younger generation, especially in the behavior of consuming vegetables or fresh vegetables as a daily companion menu (Aswatini et al., 2008; Davis et al., 2009). This statement, as explained by Pieroni, Nebel, Santoro, & Heinrich (2005) stating that age and village status plays an essential role in maintaining traditional knowledge at an individual level. The village also has the value of selling as a tourist attraction; of course, the device needs media as one of the crucial factors

to introduce local wisdom that has its campus. This little by little does not close the likelihood of causing culture (Sujarwo et al., 2016). Thus, family and traditional leaders' roles are vital to maintaining the tradition of consuming fresh vegetables in the family's diet. Apart from being a positive tradition to maintain body health, consumption of fresh vegetables is also needed so that the ancestors' cultural values are always in harmony with nature.

CONCLUSION

The results showed 46 species of potentially fresh plants commonly used by local people in Kampung Adat Naga and 22 families. The plant's widely used part is the 56% leaf organ, a much-found habitus of 37% herb. For habitat types, as much as 38% are found in gardens. In contrast, the high positive value is possessed by species *Cucumis sativus* L. of 0.93. The local wisdom pattern in the community-owned by Kampung Naga about potentially *lalapan* vegetables is a form of indigenous knowledge. It is, therefore, essential to maintain its sustainability as a form of local cultural diversity. The hallmark of its popularity is evidenced by togetherness and family to nurture and preserve nature as a source of life jointly. Therefore, crucial local wisdom about plants or ethnobotany in Kampung Naga remains well maintained and still uphold the family value in the generations.

ACKNOWLEDGMENT

Our gratitude goes to the Customary Leaders of the Kampung Naga, the Kampung Naga Guides Association, and the community of Kampung Adat Naga for helping to smooth the research.

REFERENCES

- Aswatini, Noveria, M., & Fitranita. (2008). Konsumsi sayur dan buah di masyarakat dalam konteks pemenuhan gizi seimbang. *Jurnal Kependudukan Indonesia*, 3(2), 97–119.
- Bargali, K. (2016). Traditional homegardens as a sustainable ecosystem for maintenance of biodiversity: A case study from Kumaun Himalaya, India. *Journal of Biodiversity*, 7(2), 88–100. <https://doi.org/10.1080/09766901.2016.11884761>
- Butnariu, M., & Butu, A. (2015). Chemical Composition of Vegetables and Their Products. In *Handbook of Food Chemistry* (Issue Januari 2015, pp. 1–49). Springer-Verlag Berlin Heidelberg. <https://doi.org/10.1007/978-3-642-36605-5>
- Cahyanto, T., Supriyatna, A., Sholikha, M., Saepuloh, A., & Rahmawati, D. (2018). Inventory of Plants used as *lalapan* in Subang, West Java. *The 9th International Conference on Global Resources Conservation (ICGRC) and AJI from Ritsumeikan University*, 1–11. <https://doi.org/10.1063/1.5061843>
- Cita, K. D. (2020). Ethnobotany of food plant used by Sundanese Ethnic in Kalaparea Village, Nyangkewok Hamlet, Sukabumi District, Indonesia. *Asian Journal of Ethnobiology*, 3(1), 16–22. <https://doi.org/10.13057/asianjethnobiol/y030103>
- Cleary, D. F. R., & DeVantier, L. (2019). Indonesia: Threats to the country's biodiversity. *Encyclopedia of Environmental Health*, 3(2), 622–632. <https://doi.org/10.1016/B978-0-12-409548-9.11762-2>

- Darajati, W., Pratiwi, S., Herwinda, E., Radiansyah, A. D., Nalang, V. S., Nooryanto, B., Rahajoe, J. S., Ubaidillah, R., Maryanto, I., Kurniawan, R., Prasetyo, T. A., Rahim, A., Jefferson, J., & Hakim, F. (2016). *Indonesian Biodiversity: Strategy and Action Plan 2015 - 2020*. Kementerian Perencanaan Pembangunan Nasional/BAPPENAS.
- Davis, E. M., Cullen, K. W., Watson, K. B., Konarik, M., & Radcliffe, J. (2009). A fresh fruit and vegetable program improves high school students' consumption of fresh produce. *Journal of the American Dietetic Association*, 109(7), 1227–1231. <https://doi.org/10.1016/j.jada.2009.04.017>
- De Cortes Sánchez-Mata, M., & Tardío, J. (Eds.). (2016). *Mediterranean wild edible plants: ethnobotany and food composition tables*. Springer.
- Handcock, M. S., & Gile, K. J. (2011). Comment: On the concept of snowball sampling. *Sociological Methodology*, 41(1), 367-371. <https://doi.org/10.1111/j.1467-9531.2011.01243.x>
- Harashani, H. (2018). Local Wisdom of Kampung Naga in the era of globalization. *Journal of Humanities and Social Studies*, 2(1), 51–54. <https://doi.org/10.33751/jhss.v2i1.823>
- Hendariningrum, R. (2018). Budaya dan komunikasi kesehatan (studi pandangan kesehatan pada masyarakat sunda dalam tradisi makan *lalapan*). *LUGAS: Jurnal Komunikasi*, 2(1), 13–19. <https://doi.org/10.31334/jl.v2i1.118>
- Hidayat, S., Hikmat, A., & Zuhud, E. A. M. (2010). Kajian etnobotani masyarakat Kampung Adat Dukuh Kabupaten Garut, Jawa Barat. *Media Konservasi*, 15(3), 139–151.
- Illiyan, M. (2018). Thinking intellectually, knowing globally, and act locally: The prospect of Kampung Naga as an indigenous village. *Jurnal Masyarakat & Budaya*, 20(1), 15–30. <https://doi.org/10.14203/jmb.v20i1.588>
- Latifa, R. (2015). Karakter Morfologi Daun Beberapa Jenis Pohon Penghijauan Hutan Kota Di Kota Malang. *Prosiding Seminar Nasional Pendidikan Biologi 2015, Yang Diselenggarakan Oleh Prodi Pendidikan Biologi FKIP Universitas Muhammadiyah Malang, Theme: "Peran Biologi Dan Pendidikan Biologi Dalam Menyiapkan Generasi Unggul Dan Berdaya Saing Global"*, Malang, 21.
- Moore, K. J., Boote, K. J., & Sanderson, M. A. (2016). *Physiology and Developmental Morphology*. <https://doi.org/10.2134/agronmonogr45.c6>
- Ningrum, E. (2012). Dinamika masyarakat tradisional Kampung Naga di Kabupaten Tasikmalaya. *Mimbar*, 28(1), 47–54.
- Padhy, S., Dash, S. K., Mohapatra, R., Padhy, S., Dash, S. K., & Mohapatra, R. (2017). *Ethno-biology : The Science of a Common Man to Explore the Traditional Ecology , Biodiversity and Philosophy of Conservation : A Review Ethno-biology : The Science of a Common Man to Explore the Traditional Ecology , Biodiversity and Philosophy of Conserv. 6901*. <https://doi.org/10.1080/09766901.2015.11884751>
- Pieroni, A., Nebel, S., Santoro, R. F., & Heinrich, M. (2005). Food for two seasons: Culinary uses of non-cultivated local vegetables and mushrooms in a south Italian village. In *International Journal of Food Sciences and Nutrition*. <https://doi.org/10.1080/09637480500146564>

- Putri, L. S. E., Dasumiati, Kristiyanto, Mardiansyah, Malik, C., Leuvinadrie, L. P., & Mulyono, E. A. (2016). Ethnobotanical study of herbal medicine in Ranggawulung Urban Forest, Subang District, West Java, Indonesia. *Biodiversitas*, 17(1), 172–176. <https://doi.org/10.13057/biodiv/d170125>
- Qodariah, L., & Armiyati, L. (2013). Nilai-nilai kearifan lokal masyarakat adat kampung naga sebagai alternatif sumber belajar. *SOCIA: Jurnal Ilmu-Ilmu Sosial*, 10(1), 10–20. <https://doi.org/10.21831/socia.v10i1.5338>
- Roosita, K., Kusharto, C. M., Sekiyama, M., Fachrurozi, Y., & Ohtsuka, R. (2008). Medicinal plants used by the villagers of a Sundanese community in West Java, Indonesia. *Journal of Ethnopharmacology*, 115(1), 72–81. <https://doi.org/10.1016/j.jep.2007.09.010>
- Ross, K. (2013). Fuel and food are not made of energy - a constructive view of respiration and combustion. *School Science Review*.
- Slamet, A., Andarias, S. H., Pramesthy, D., Ardyati, I., & Yenni, B. (2020). Potential of local plants in buton island as a source of learning biology. *Bioedusiana*, 5(1), 26–32. <https://doi.org/10.34289/bioed.v5i1.1555>
- Steenis, C. G. G. J. van. (1962). The land-bridge theory in botany with particular reference to tropical plants. *Blumea - Tijdschrift Voor de Systematiek En de Geografie Der Planten*.
- Sujarwo, W., Arinasa, I. B. K., Caneva, G., & Guarrera, P. M. (2016). Traditional knowledge of wild and semi-wild edible plants used in Bali (Indonesia) to maintain biological and cultural diversity. *Plant Biosystems*. <https://doi.org/10.1080/11263504.2014.994577>
- Sukenti, K., Hakim, L., Indriyani, S., Purwanto, Y., & Matthews, P. J. (2016). Ethnobotanical study on local cuisine of the Sasak tribe in Lombok Island, Indonesia. *Journal of Ethnic Foods*, 3(3), 189–200. <https://doi.org/10.1016/j.jef.2016.08.002>
- Tardío, J., & Pardo-De-Santayana, M. (2008). Cultural importance indices: A comparative analysis based on the useful wild plants of southern Cantabria (northern Spain). *Economic Botany*. <https://doi.org/10.1007/s12231-007-9004-5>
- Umair, M., Altaf, M., & Abbasi, A. M. (2017). An ethnobotanical survey of indigenous medicinal plants in Hafizabad district, Punjab-Pakistan. *PloS one*, 12(6), e0177912. <https://doi.org/10.1371/journal.pone.0177912>
- Uprety, Y., Asselin, H., Dhakal, A., & Julien, N. (2012). Traditional use of medicinal plants in the boreal forest of Canada: review and perspectives. *Journal of ethnobiology and ethnomedicine*, 8(1), 7. <https://doi.org/10.1186/1746-4269-8-7>
- Tjitrosoepomo, G. (1998). Taksonomi Umum. In *Universitas Gajah Mada*.
- Widjaja, E. A., Rahayuningsih, Y., Rahajoe, J. S., Ubaidillah, R., Maryanto, I., Walujo, E. B., & Semiadi, G. (2014). *Kekinian Keanekaragaman Hayati Indonesia 2014*. Pusat Penelitian Biologi Lembaga Ilmu Pengetahuan Indonesia (LIPI).