# Wild Edible Plants Diversity and Its Potential for Supporting Food Security in Lombok Island, Indonesia

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**Received 28 September 2025, Accepted 13 November 2025, Available online 28 December 2025**
**10.21463/jmic.2025.14.3.06**

## Abstract

The increase in human population causes an increase in food needs, but this is not always balanced by sufficient food availability, thus creating a crucial problem in the form of food security. This study aims to determine the diversity of wild edible plants and their potential to support food security in Lombok Island. This research was conducted in rural areas of Central Lombok Regency, using exploratory methods and Interviews were conducted with local people who are of the Sasak tribe. Based on the research, there are 16 families, 26 genera, and 35 wild edible plant species. These plants are a source of macronutrients, so they play an important role in supporting food security. Based on the analysis, it is known that wild edible plants at the research location have high diversity (H' = 3.37).

## Keywords

Lesser Sunda Islands, Sasak Tribe, Wild Edible Plants

# Introduction

Food has always been a strategic issue in development, both at the global and national levels, because the fulfillment of food is a right of every citizen, whose quantity and quality must be guaranteed, safe, and nutritious. The Indonesian government remains committed to strengthening food security as an effort to provide food for the Indonesian population, thus becoming a healthy, active, productive, and competitive human resource. This commitment is in line with efforts to achieve the second goal of the Sustainable Development Goals (SDGs), namely eliminating hunger (zero hunger) by 2030 (National Food Agency, 2024). Ensuring a stable, hygienic, and nutritious food supply for people in developing countries is a serious concern today. Scarcity, high costs, and intermittent supply of healthy food have led to a search for affordable or alternative sources of quality and nutritious food (Ahmed, 2021). Indonesia is a developing country (Suryahadi et al., 2024). In developing countries, a wide variety of wild edible plant species are consumed as a food source. Due to rapid population growth, scarcity of fertile land for cultivation, and high prices of available staple foods, people often collect edible wild plants to meet adequate nutritional needs (Sekeroglu et al., 2016). In developing countries like Indonesia, many individuals rely heavily on wild edible plants as a food source, including in Lombok. Lombok is an island in the Lesser Sunda Islands chains, located between Bali and Sumbawa. Geographically, Lombok is in West Nusa Tenggara Province, Indonesia (Central Bureau of Statistics for West Nusa Tenggara Province, 2024). Sasak is a native tribe in Lombok Island (Rahayu et al., 2023). Food security is a condition where food is available for the country and individuals, as reflected in the availability of sufficient food, both in quantity and quality, which is safe, diverse, nutritious, evenly distributed and affordable and does not conflict with the religion, beliefs and culture of the community, so that they can live healthily, actively and productively in a sustainable manner (National Food Agency, 2024). Food security occurs when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and preferences, enabling them to live an active and healthy life for a defined period (Nissa' et al., 2024). There are three dimensions of food security, namely: availability, accessibility and utilization. Food availability is defined as the condition of the availability of food from local production through cultivation or wild. Food access or affordability at the household level is defined as the household's ability to obtain nutritious food. Food utilization refers to the use of food by a household and the individual's ability to consume food and the body to absorb and metabolize nutrients properly. The Sasak people interact with the surrounding environment, including meeting their daily food needs through the use of wild edible plants. Wild Edible Plants (WEP) are plants that grow without human assistance, utilizing only available resources (Clemente-Villalba et al., 2023). Wild edible plants (WEP) are an important food source because of their accessibility and affordability (Tadesse et al., 2024). Research on wild edible plants in Indonesia is still very limited (Triyanto et al., 2024; Farikha et al., 2024; Cahyanti et al., 2024; Rahayu et al., 2024). Research on food plants in Lombok Island is also still very limited (Rahayu and Ibo, 2018; Yusuf and Usman, 2022). Wild edible plants also contain nutrients, both macronutrients and micronutrients, so they play a role in supporting food security. Until now there has been no research that focuses on the diversity of wild edible plants on Lombok Island. We hypothesize that the diversity of wild edible plants in Lombok supports food security through nutritional and cultural functions. Therefore, this research was carried out with aims to determine the diversity of wild edible plants and their potential to support food security in Lombok Island.

# Methods

## Study area

Lombok falls under the ecoregion category of tropics that experience seasonal drought (Brearley et al., 2019). This study was conducted in rural areas of Central Lombok Regency, namely: Selong Belanak Village (8°51'35"-8°52'11"S and


10.21463/jmic.2025.14.3.06 — https://jmic.online/issues/v14n3/6/

116°08’31”-116°10’00”E), West Praya District and Menemeng village (8°37’58”-8°38’06”S and 116°11’41”-116°11’32”E), Pringgarata District (Figure 1). This research was conducted using exploratory methods and interviews with local people. The primary livelihood of the local people in the research area is as a farmer. Geographically, West Praya is in the southern part of Central Lombok Regency which is a hilly area and borders with Indian Ocean. Meanwhile, Pringgarata District is a highland and is located in the northern part of Central Lombok Regency (Figure 1).

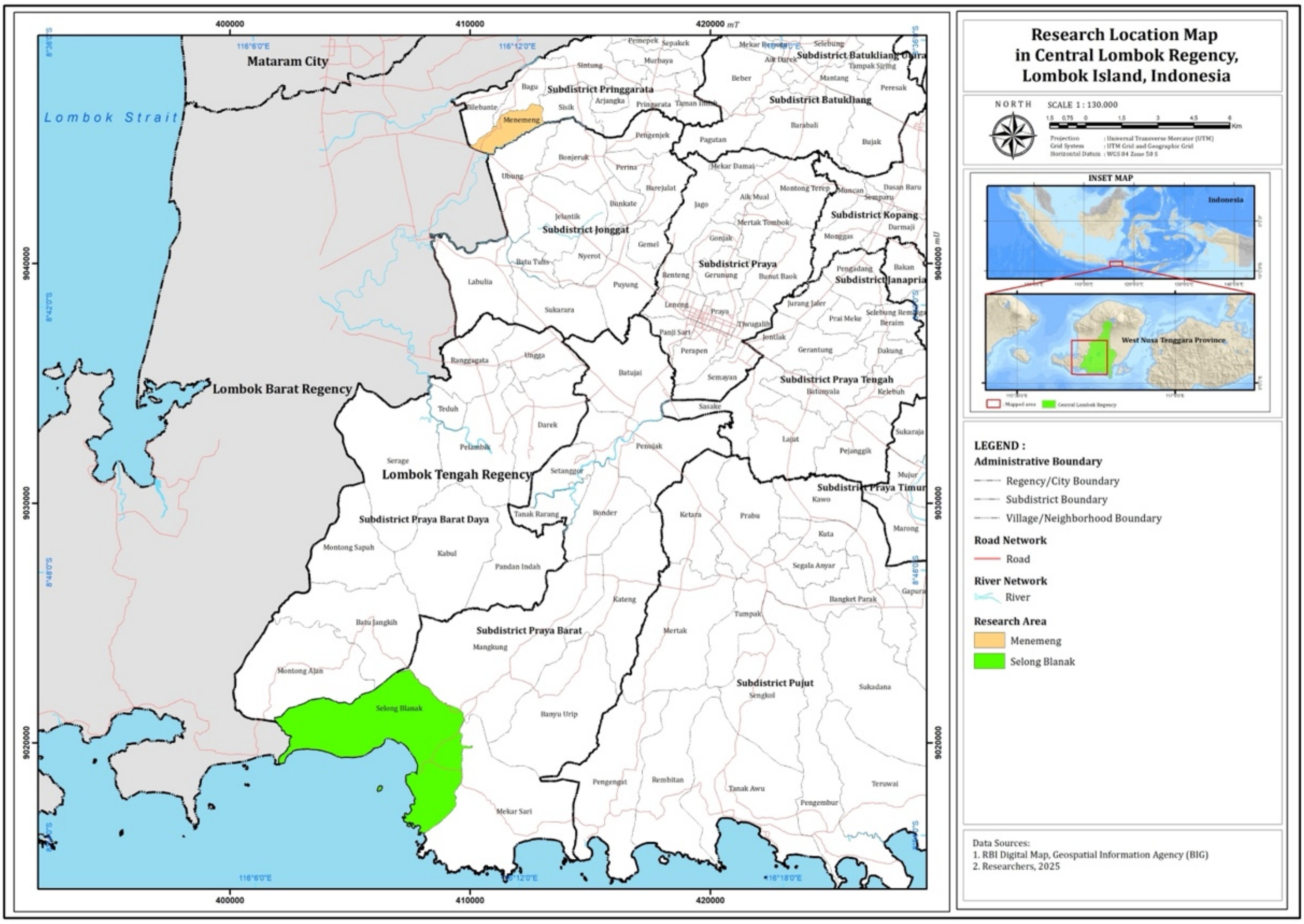


Fig 1. Map of research locations in Central Lombok Regency, Lombok Island, Indonesia

## Field survey

The ethnobotanical approach was combined with the qualitative and quantitative methods. (Albuquerque et al. 2014; Iskandar, 2018). The consent process, building rapport, and ethical considerations are crucial initial steps in botanical research. Research permits were issued by Al-Azhar Islamic University and then submitted to the village government. The researchers also sought permission from local residents to serve as informants for this study. Interviews were conducted with local people who are of the Sasak tribe. Interviews with informants were born and live in villages of the research location (Table 1). The number of male and female informants was nearly equal. Most were people of productive age who worked as farmers in rainfed ricefields or gardens. Some were community leaders, such as village heads, village office employees, or hamlet heads. Others were housewives.

Table 1. The characteristics of informants in this study. Informant profile breakdown by sex, age, and occupation

| Informants Category | Total | Percentage (%) |
|---|---|---|
| Sex | | |
| Male | 31 | 48 |
| Female | 34 | 52 |
| Age | | |
| 17–30 | 17 | 26 |
| 31–44 | 16 | 24 |
| 45–60 | 23 | 36 |
| > 60 | 9 | 14 |
| Occupation | | |
| Farmer | 26 | 40 |
| Community Leader | 7 | 11 |
| Housewife | 32 | 49 |

Field observations were conducted to determine the presence of wild edible plant species. Identification of plants refers to several identification books (Van Steenis, 2008; Henderson, 2009; Setyawati et al., 2015). The scientific names of these plants were based on the International Plant Name Index (2025). In this study, measurements of abiotic factors were carried out, namely: soil temperature and soil pH.

## Data analysis

The plants that have been identified are then tabulated including families, vernacular names, part used as food, macronutrients, and conservation status. Nutritional content data is obtained from various references. The conservation status of plant species is obtained from the International Union for Conservation of Nature and Natural Resources (IUCN). The Shannon-Wienner diversity index was utilized for the analysis of plant diversity.

$$H' = -\sum \mathrm{Pi} \ln \mathrm{Pi}$$

Where H' = Shannon-Wienner diversity index, Pi = Proportion of the number individuals of a plant species (ni/N), ni = abundance of a plant species, N = total abundance of all plant species. Results of Shannon Wiener diversity index calculation should be categorized below (Odum & Barrett, 2009), there are three levels of biodiversity: high ($H'>3$), medium ($1 \leq H' \leq 3$), and low ($H'<1$).

The results of the research, included: plant identification, diversity index, measurement of abiotic factors, and conservation status were then analyzed descriptively.

# Results and Discussion

Based on the research, there are 16 families, 26 genera, and 35 wild edible plant species, as seen in Table 2. These plants are a source of macronutrients, so they play an important role in supporting food security. Based on the analysis, it is known that wild edible plants at the research location have high diversity ($H' = 3.37$).

Table 2. Wild edible plant species in Lombok Island

| Familia | Spesies | Vernacular Name | Number of Individuals | Part used as food | Macronutrients | Conservation Status |
|---|---|---|---|---|---|---|
| Anacardiaceae | *Mangifera indica* L. | Paok | 79 | Fruit | carbohydrate, protein, lipid (Rajasekaran & Soundarapandian, 2023) | Data Deficient |
| Araceae | *Amorphophallus paeoniifolius* (Dennst.) Nicolson | Gawok | 66 | Tuber | carbohydrate, protein (Shahbuddin et al., 2025) | Least Concern |
| Araceae | *Colocasia esculenta* (L.) Schott | Tojang sayur | 86 | Tuber | carbohydrate, protein, lipid (Fufa et al., 2023) | Least Concern |
| Araceae | *Leucocasia gigantea* (Blume) Schott. | Tojang | 40 | Leaves, petioles | carbohydrate, protein (Alam et al., 2025) | Not Evaluated |
| Araceae | *Xanthosoma sagittifolium* (L.) Schott | Tojang, Kimpul | 60 | Tuber, leaves | carbohydrate, protein (Karmakar & Patel, 2025) | Not Evaluated |
| Arecaceae | *Arenga pinnata* (Wurmb) Merr. | Lolon Enau, Aren | 40 | Fruit, flower bunches, stem shoots | Carbohydrate, protein, lipid (Yermia et al., 2025) | Least Concern |
| Arecaceae | *Cocos nucifera* L. | Lolon Nyiur | 111 | Fruit, flower bunches, stem shoots | Carbohydrate, protein, lipid (Parmar et al., 2021) | Not Evaluated |
| Arecaceae | *Corypha utan* Lam. | Male, Gewang, Gebang, Lontar Utan | 39 | Fruit, shoots (buds), stems | Carbohydrate, protein, lipid (Johnson, 1998) | Least Concern |
| Arecaceae | *Salacca zalacca* (Gaertn.) Voss | Salak | 11 | Fruit | Carbohydrate, protein (Mazumdar et al., 2019) | Not Evaluated |
| Convolvulaceae | *Ipomoea batatas* (L.) Lam. | Ambon Jamak | 57 | Tubers, leaves | Carbohydrate, protein, lipid (Garcia-Martinez et al., 2024) | Data Deficient |
| Dioscoreaceae | *Dioscorea alata* L. | Uwi | 95 | Tuber | Carbohydrate, protein, lipid (Indriyatno et al., 2024) | Not Evaluated |
| Dioscoreaceae | *Dioscorea bulbifera* L. | Gembolo | 99 | Tuber | Carbohydrate, protein, lipid (Indriyatno et al., 2024) | Not Evaluated |
| Dioscoreaceae | *Dioscorea esculenta* (Lour.) Burkill | Gembili | 109 | Tuber | Carbohydrate, protein, lipid (Indriyatno et al., 2024) | Not Evaluated |
| Dioscoreaceae | *Dioscorea hispida* Dennst. | Gadung | 133 | Tuber | Carbohydrate, protein, lipid (Hazrati et al., 2021) | Not Evaluated |
| Euphorbiaceae | *Manihot esculenta* Crantz | Ambon Jawe | 62 | Tubers, leaves | Carbohydrate, protein, lipid (Borku, 2025) | Not Evaluated |
| Fabaceae | *Lablab purpureus* (L.) Sweet | Komak | 40 | Pods, seeds, leaves | carbohydrate, protein, lipid (Pandey et al., 2022; Purwanti et al., 2019) | Not Evaluated |
| Fabaceae | *Tamarindus indica* L. | Bagek | 78 | Fruit, leaves | protein, lipid, carbohydrate (Sadiq et al., 2016) | Least Concern |
| Fabaceae | *Vigna radiata* (L.) R. Wilczek | Antap ijo; Kacang Hijau | 14 | Seeds | protein, lipid, carbohydrate (Lande et al., 2024) | Least Concern |
| Fabaceae | *Vigna unguiculata* (L.) Walp. | Antap; Kacang Panjang | 19 | Pods, seeds, leaves | Protein, lipid, carbohydrate (Purwatiningsih et al., 2016) | Not Evaluated |
| Fabaceae | *Phaseolus vulgaris* L. | Buncis | 15 | Pods, seeds | Protein, carbohydrate, lipid (Celmeli et al., 2018) | Least Concern |
| Lamiaceae | *Coleus rotundifolius* (Poir.) A.Chev. & Perrot | Kentang Bideng | 13 | Tuber | Carbohydrate, protein, lipid (Sethuraman et al., 2020) | Not Evaluated |
| Malvaceae | *Durio zibethinus* L. | Duren | 11 | Fruit, seeds | Carbohydrate, protein, lipid (Khaksar et al., 2024) | Data Deficient |
| Marantaceae | *Maranta arundinacea* L. | Arus, Garut, Irut | 69 | Rhizomes | Carbohydrate, protein, lipid (Fidianingsih et al., 2022) | Not Evaluated |
| Moraceae | *Artocarpus altilis* (Parkinson) Fosberg | Sukun | 25 | Fruit | Carbohydrate, protein, lipid (Mehta et al., 2023) | Not Evaluated |
| Moraceae | *Artocarpus camansi* Blanco | Koloh; Keluwih | 52 | Fruit | Carbohydrate, protein, lipid (Silalahi, 2022) | Not Evaluated |
| Moraceae | *Artocarpus heterophyllus* Lam. | Nangke | 81 | Fruit, seeds | Carbohydrate, protein, lipid (Khan et al., 2021) | Not Evaluated |
| Musaceae | *Musa acuminata x balbisiana* | Puntik Sabe; Pisang Kepok | 131 | Fruit, stem | Carbohydrate, protein, lipid (Nupus, 2022) | Least Concern |

| Familia | Spesies | Vernacular Name | Number of Individuals | Part used as food | Macronutrients | Conservation Status |
|---|---|---|---|---|---|---|
| Musaceae | *Musa acuminata* Colla | Puntik Sun; Pisang Emas | 63 | Fruit | Carbohydrate, protein, lipid (Indonesian Food Composition, 2020) | Least Concern |
| Musaceae | *Musa balbisiana* Colla | Puntik Batu; Pisang Batu | 45 | Fruit | Carbohydrate, protein, lipid (Prayogi et al., 2016) | Least Concern |
| Musaceae | *Musa x paradisiaca* L. | Puntik Lumut | 91 | Fruit | Carbohydrate, protein, lipid (Al-Snafi et al., 2023) | Not Evaluated |
| Rhamnaceae | *Ziziphus mauritiana* Lam. | Gol; Bidara | 129 | Fruit | Carbohydrate, protein, lipid (Anka et al., 2019) | Least Concern |
| Sapindaceae | *Dimocarpus longan* Lour. | Kelengkeng | 27 | Fruit | Carbohydrate, protein, lipid (Kathpalia, 2022) | Data Deficient |
| Sapindaceae | *Nephelium lappaceum* L. | Buluan; Rambutan | 53 | Fruit | Carbohydrate, protein, lipid (Biswas, 2021) | Least Concern |
| Sapotaceae | *Manilkara zapota* (L.) P. Royen | Sabo Coklat; Sawo Manila | 20 | Fruit | Carbohydrate, protein, lipid (Miranda, 2022) | Least Concern |
| Taccaceae | *Tacca leontopetaloides* (L.) Kuntze | Taka | 57 | Tuber | Carbohydrate, protein, lipid (Yonata et al., 2023) | Least Concern |

Plants interact with abiotic factors (Heinze et al., 2017). The following abiotic factors influence plant growth: soil temperature and pH. One of the abiotic factors that control plant growth is temperature (Walne & Reddy, 2022). Because it provides mechanical support, nutrients, and water, the soil is essential for plant life's maintenance. The soil is a significant heat store. Numerous biological processes are catalyzed by soil temperature. The moisture, aeration, and availability of plant nutrients that are necessary for plant growth are all affected by soil temperature (Onwuka, 2018). The temperature for plant growth goes from 15-40°C. Plant growth slows down at temperatures above 40°C and below 15°C. Temperature plays a role in activating biochemical and physiological reactions in plants (Wiraatmaja, 2017). The biogeochemical processes of soil are significantly influenced by the soil pH. As a result, soil pH is referred to as the "master soil variable" because it has a significant impact on a wide range of biological, chemical, and physical properties as well as processes that influence plant growth and biomass yield (Neina, 2019). Soil pH influences the availability of soil nutrients, soil microbial activity, and plant growth and development (Zhang et al., 2019). The entire chemistry of plant nutrient colloidal solutions is controlled by the concentration of hydrogen ions, which is what determines the soil's pH (Msimbira & Smith, 2020). Soil pH affects the ability of the soil to provide nutrients for plants. Thus, the pH of the soil is one indicator of soil fertility. In the pH range of 6-7, plant nutrients are most readily available (Hutasuhut, 2020). Based on measurements, it can be said that soil temperature (23-29°C) and soil pH (5.0-7.0) at the research site are appropriate for plant growth. As a result, the research site, can support a variety of plant species and are rich in biodiversity.

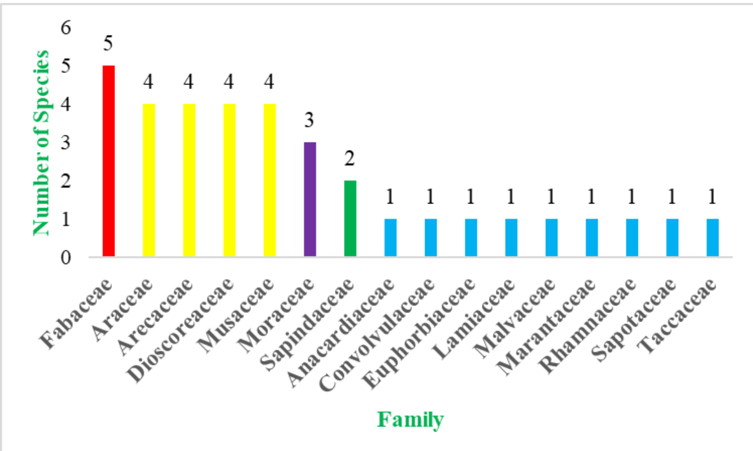


Fig 2. Number of species in each family of wild edible plants

Based on the research, as seen in Figure 2, Fabaceae is the family with the largest number of wild edible plant species (5 species). Fabaceae are abundant in the research area due to its tropical climate and soil conditions (soil temperature 23-29°C and soil pH 5-7), which are suitable for Fabaceae habitat. This is in line with Maulidan et al. (2022), who stated that Fabaceae grows well in soil with a temperature of 26-33°C and a soil pH of 4-8.

*Lablab purpureus* contains carbohydrates (Pandey et al., 2022), proteins and lipids (Purwanti et al., 2019). This species grows wild in homegardens and gardens. *Lablab purpureus* pods are flat with a length varying between 5-20 cm, containing 3-6 oval seeds, as seen in Figure 3. Sasak people have specific preferences when using *L. purpureus*, particularly as a food ingredient. This preference is largely determined by the texture of the organs, particularly the fruit. *L. purpureus* fruit (pods and seeds) is commonly prepared in soups (e.g., tamarind soup, stir-fried vegetables, or light soups). The *L. purpureus* fruit favored by the community is soft when processed or cooked. Sukenti et al. (2016) in relation to its use as a food ingredient, *L. purpureus* leaves are also used as a natural dye (green) in the preparation of a traditional food called *poteng reket* (fermented sticky rice). *Poteng reket* is a traditional snack on the island of Lombok, which is mainly served during Eid al-Fitr and the birthday of the Prophet Muhammad. The organs used are mature leaves, which are ground until smooth, then the liquid is extracted to be added as a dye to sticky rice (Sukenti et al., 2022).

A B

Fig 3. (A) *Lablab purpureus* plant, (B) *L. purpureus* pods and seeds

*Tamarindus indica* is a native plant to tropical regions, such as in rural areas of Lombok Island, Indonesia. This species grows wild in homegardens, gardens, roadsides, or other open areas. The fruit is a brown pod with a distinctive sour flavor, containing flesh and flat seeds. The seeds are hard, shiny, brown, and covered by a tough membrane, as seen in Figure 4. Sadiq et al. (2016) stated that *T. indica* contains proteins, lipids, and carbohydrates. Fruit from native trees like *T. indica* contributes to food security (Ebifa-Othieno et al., 2017), traditional medicine, and ecosystem stability (Morka, 2025) in rural areas. The Sasak people use *T. indica* fruit in their cooking because its sour taste enhances the flavor of food. They commonly use it in dishes like sour vegetables and rujak (fruit salad).

A B

Fig 4. (A) *Tamarindus indica* plant, (B) *T. indica* pods and seeds

*Vigna radiata* is a rich and easily digestible source of protein, essential amino acids, complex carbohydrates, vitamins and minerals (Supasatyankul et al., 2022). Carbohydrates are the largest component (over 55%) of *V. radiata* seeds, consisting of starch, sugar, and fiber. The starch in *V. radiata* has a very high digestibility (99.8%), making it suitable for infants and toddlers whose digestive systems are not as mature as adults. The second largest component is protein (20-25%), with a digestibility of 77%. *V. radiata* contains 22.2 grams of protein, 345 kcal of energy, 1.2 grams of fat, 62.9 grams of carbohydrates, and various vitamins and minerals (Yi-Shen et al., 2018). Kabre et al. (2022) stated that *V. radiata* is a health food, when integrated into dietary habits, can contribute to the prevention of chronic diseases.

According to Pertiwi et al., (2021), the main nutrients contained in *V. unguiculata* pods are vitamin A and vitamin B, while the seeds contain more protein and fat. *V. unguiculata* is considered a vegetable source due to its composition of carbohydrates (70%), protein (17.30%), fat (1.50%), and water (12.20%) (Faizah et al., 2025). *V. unguiculata* is a legume found abundantly in tropical regions, such as the Indonesian island of Lombok. According to Purnama et al. (2025), this plant has significant nutritional and economic value and contribute to food security. The Sasak people use *V. unguiculata* in various dishes, such as stir-fries, asem-asem, lodeh, gado-gado, lalapan, and urap.

In terms of food safety and a healthy food supply, *Phaseolus vulgaris* is a source of protein, carbohydrates, vitamins, and minerals. It is also rich in unsaturated fatty acids, such as linoleic and oleic acids. *P. vulgaris* is an important source of nutrients for food security and a healthy food supply (Celmeli et al., 2018; Habibi et al., 2025). *P. vulgaris* adapts and grows in tropical climates, such as in the villages on Lombok Island. Local dishes of the Sasak people that use *P. vulgaris* are stir-fries, soups, salads, gado-gado, and pecel.

The second-highest number of wild edible plant species (4 species) are Araceae, Arecaeae, Dioscoreaceae, and Musaceae. Wild edible plants species in the Araceae are *Amorphophallus paeoniifolius* (Dennst.) Nicolson, *Colocasia esculenta* (L.) Schott, *Leucocasia gigantea* (Blume) Schott., and *Xanthosoma sagittifolium* (L.) Schott.

Shahbuddin et al. (2025) stated that *Amorphophallus paeoniifolius* is a potential plant with high nutritional content, such as carbohydrates, proteins, vitamins, and minerals. This plant also has various health benefits, including antibacterial, antioxidant, antitumor, analgesic, and antidiarrheal properties thanks to its phytochemical content. Amorphophallus paeoniifolius can grow in various soil types and thrives in adverse weather conditions, making it highly potential as a food


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crop in tropical and subtropical regions. *A. paeoniifolius* offers various advantages that align with sustainable development goals and global health. By understanding the biological aspects of the growth and utilization of this plant, Sasak people can improve their food security (food supply), diversify their diets, and increase resilience to environmental and economic challenges. Fufa et al. (2023) stated that *Colocasia esculenta* contains ash, crude fat, fiber, crude protein, carbohydrates, energy, potassium, sodium, calcium, phosphorus, iron, zinc, and manganese. This species grows wild in homegardens and gardens. This species has cylindrical, round, or conical tubers measuring up to 30 x 15 cm, with brown skin and white flesh, as seen in Figure 5. The Sasak people consume the tubers of this plant by steaming or frying them.

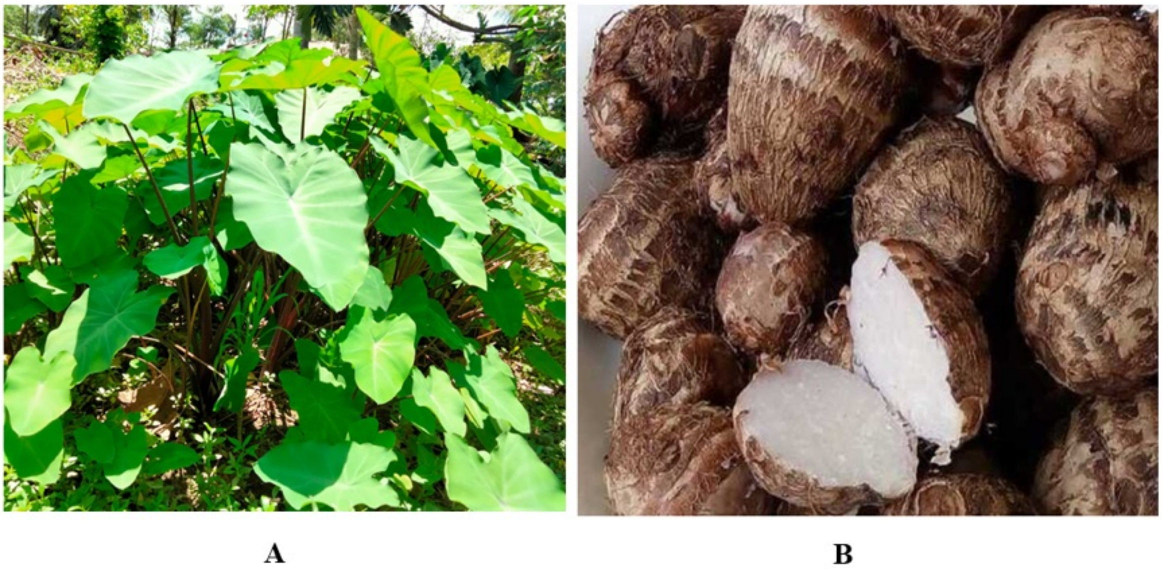


Fig 5. (A) *Colocasia esculenta* plant, (B) *C. esculenta* tuber

*Leucocasia gigantea* is an edible plant with a variety of health benefits (Alam et al., 2025). *L. gigantea* contains primary metabolites (carbohydrates and proteins) and secondary metabolites (saponins, flavonoids, steroids, and tannins) (Husna et al., 2023). Vegetables such as *Leucocasia* are very important in human nutrition, providing essential nutrients and bioactive compounds with medicinal properties (Mohammad et al., 2025). Alam et al. (2025) stated that *L. gigantea* has potential as an antidiabetic agent. *Xanthosoma sagittifolium* contains carbohydrates and proteins (Karmakar & Patel, 2025). Maghfirah et al. (2022) stated that *X. sagittifolium* is a member of the Araceae family which is a source of carbohydrates that is widely found in dry areas for food security. Food availability is a crucial factor in community food security. Local food is the easiest resource to ensure food availability, especially local tubers as a source of carbohydrates. Araceae are local plants easily found in rural areas of Central Lombok Regency. Traditionally, *X. sagittifolium* tubers are eaten steamed, fried, and processed into chips.

Wild edible plants species in the Arecaeae are *Arenga pinnata* (Wurmb) Merr., *Cocos nucifera* L., *Corypha utan* Lam., and *Salacca zalacca* (Gaertn.) Voss. *Arenga pinnata* produces large quantities of fruit. The Sasak people of Lombok Island use young *Arenga pinnata* fruit to make sweets. Yermia et al. (2025) stated that *Arenga pinnata* fruit contains carbohydrates, protein, lipids, fiber, and water. The sap tapped from *Arenga pinnata* flowers is processed into palm sugar by the Sasak people on Lombok Island.

Wild edible plants species in the Dioscoreaceae are *Dioscorea alata* L., *Dioscorea bulbifera* L., *Dioscorea esculenta* (Lour.) Burkill, and *Dioscorea hispida* Dennst. Indriyatno et al. (2024) sated that tuber of *D. alata* contains carbohydrates, protein, and lipids. In the Sasak community, *D. alata* tubers are processed by boiling, baking, frying, or mashing them to make flour (starch). Wild edible plants species in the Musaceae are *Musa acuminata x balbisiana, Musa acuminata* Colla, *Musa balbisiana* Colla, and *Musa x paradisiaca* L.

The third-highest number of wild edible plant species (3 species) is Moraceae, namely: *Artocarpus altilis* (Parkinson) Fosberg, *Artocarpus camansi* Blanco, and *Artocarpus heterophyllus* Lam. In the Sasak tribe, *A. altilis* fruit is processed into various dishes such as fried, steamed, or made into flour.

There are 11% of wild edible plant species with Data Deficient conservation status, 40% of wild edible plant species with Least Concern conservation status, 46% of wild edible plant species with Not Evaluated conservation status, and 3% of wild edible plant species with Near Threatened conservation status, as seen in Figure 6. The species with Near Threatened conservation status is *A. camansi*. In the Sasak tribe, *A. camansi* fruit is processed into vegetables by slicing them thinly and then mixing them with coconut milk and various cooking spices.

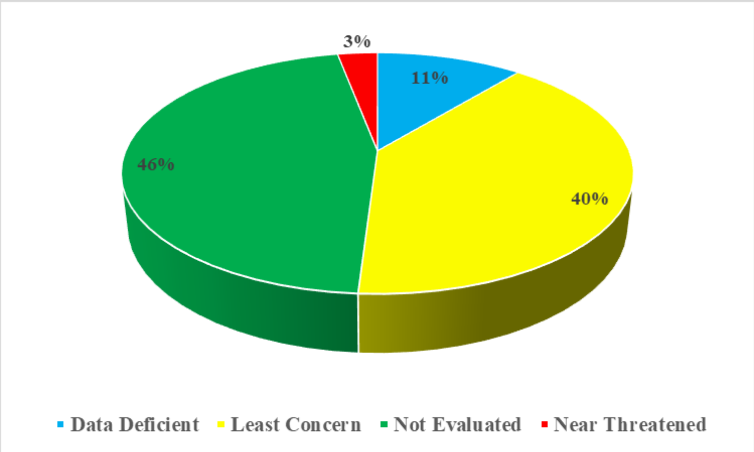


Fig 6. Number of wild edible plant species based on conservation status

Wild edible plants are plant species that have not been intentionally cultivated or domesticated by humans, but are still safe for consumption. As in the research location, these plants grow naturally in various environments, such as homegardens, gardens, ricefields, forests, or grasslands. Wild edible plants are readily available, making them accessible and affordable. Therefore, they are crucial to the food security of rural communities in Lombok Island. This underscores the critical role of wild edible plants in local food systems, which contribute significantly to food and nutrition security in communities.

Furthermore, the harvesting and trade of wild edible plants has the potential to create jobs and generate income in rural areas. Wild edible plants also offers a promising alternative for nutritional supplementation because it contains both macronutrients and micronutrients. This makes wild edible plants play a crucial role in addressing nutritional deficiencies.

These plants may play a significant role in environmental sustainability because they grow wild and can be used as functional ingredients to develop new food products. This sustainable nature is leading more and more consumers, chefs, and nutritionists to incorporate wild edible plants into their dishes and diets (Nilsen et al., 2017). The future must be more sustainable, and wild edible plants can contribute to that (Clemente-Villalba et al., 2023). The limitation of this study is that the nutritional data was not measured by the researcher, but was obtained from various references.

Sustainable use of wild edible plants can be achieved through responsible harvesting and conservation practices, where harvesting must consider the potential for ecosystem damage and species extinction. Sustainability strategies include on-site and off-site conservation to protect species from threats such as deforestation. Furthermore, cultivation of valuable wild plants, such as planting them in homegardens and gardens, can help increase plant numbers and reduce reliance on wild harvesting. Harvesting must comply with limits to prevent ecosystem damage. Communities need to understand when and how plants can be harvested without disrupting their survival. On-site conservation is carried out to protect the natural habitats where wild plants grow, such as forests and drylands. Off-site conservation involves conservation efforts outside their natural habitats, for example through cultivation or collecting seeds for future protection. Cultivation of wild edible plants is carried out to help maintain species sustainability by reducing dependence on wild harvesting. This can also be done by replanting harvested species to ensure future supplies. Cultivation can support biodiversity, namely: maintaining the diversity of wild edible plants and their habitats. Cultivation in homegardens and gardens aims to help ensure local food supplies, especially during the dry season or times of scarcity. The domestication process, where wild species are transformed into cultivated plants, can be accomplished through careful experimentation to identify suitable plants for cultivation and incorporate them into agricultural systems. Education for local communities is needed to raise awareness of the importance of wild edible plants, as well as the benefits and drawbacks of unsustainable use. Further research is needed on the nutritional content of wild edible plants and their potential uses to improve knowledge and practices.

# Conclusion

Based on the research, there are 16 families, 26 genera, and 35 wild edible plant species. These plants are a source of macronutrients, so they play an important role in supporting food security. Based on the analysis, it is known that wild edible plants at the research location have high diversity (H' = 3.37). There are 11% of wild edible plant species with Data Deficient conservation status, 40% of wild edible plant species with Least Concern conservation status, 46% of wild edible plant species with Not Evaluated conservation status, and 3% of wild edible plant species with Near Threatened conservation status. Wild edible plants play a crucial role in supporting sustainable local food security, particularly for rural communities on Lombok Island. The diversity of these plant species must be preserved. The findings of this study can serve as recommendations for local government policy on the importance of community-based conservation of diversity of wild edible plant species to support local food security. Utilizing wild edible plants can encourage community involvement in preserving plant habitats. When people experience the benefits, awareness of preserving biological resources will increase. By conserving wild edible plants, food diversity can be expanded, reducing dependence on a few major staple crops. Ex situ conservation of wild edible plants can be developed for commercial purposes. This can create a source of income for local communities and an economic incentive for conservation activities.

# Acknowledgments

The author would like to thank the Directorate of Research and Community Service (*Direktorat Penelitian dan Pengabdian Masyarakat, DPPM*), Ministry of Higher Education, Science, and Technology of the Republic of Indonesia, for providing research grant funding. He also thanks all parties who participated in supporting the research activities.

# Disclosure Statement

This research does not involve any conflicts of interest.

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