

Ethnobotany of *Ancak* Cooking Ingredients by Madurese Ethnic in Kalipuro and Gombengsari Village, Banyuwangi

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Article Information

Article History:

Received: August 24, 2025

Revised: February 04, 2026

Published: February 21, 2026

Keywords:

Biodiversity, Cultural rituals, Local wisdom, Traditional food, Traditional knowledge

ABSTRACT

This study aims to identify the types of spices used in *Ancak* cuisine, and to describe the composition and basic ingredients. The research methods included field surveys and in-depth interviews, which were analyzed using an ethnobotanical approach. The level of plant utilization was analyzed using Use Values (UVs), and the frequency of use based on cultural importance was measured using Index of Cultural Significance (ICS), while the frequency of mention of plant types was analyzed using Relative Frequency of Citation (RFC). The results show that there are 19 types of spice plants used in *Ancak* cuisine. The highest UVs value is found in *Tamarindus indica* with a value of 6, followed by *Cinnamomum verum* with a value of 5 and *Myristica fragrans* with a value of 2. The highest ICS values for spice plants are found in *Allium cepa* and *Allium sativum* at 30, and *Zingiber officinale* at 12. In addition, 20 types of plants were identified as ingredients and basic materials for making *Ancak*. The highest UVs value was found in *Apium graveolens* at 2, followed by *Raphanus sativus var. hortensis* and *Nasturtium officinale* at 1. The highest ICS value was found in *Oryza sativa* at 30, followed by *Cocos nucifera* at 9 and *Allium fistulosum* at 6. The highest RFC value was also found in *Oryza sativa* at 1, followed by *Glycine max* at 0.95, and *Cucumis sativus* at 0.35. These findings indicate that the *Ancak* dish reflects rich local ethnobotanical knowledge and strong social and cultural values.

How to Cite

Shaleh, S. K., Hakim, L., & Siswanto, D. (2026). Ethnobotany of *Ancak* Cooking Ingredients by Madurese Ethnic in Kalipuro and Gombengsari Village, Banyuwangi. *Al-Jahiz: Journal of Biology Education Research*. 7(1), 70–88. DOI: <https://doi.org/10.32332/al-jahiz.v7i1.11395>.

Published by

Website

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Al-Jahiz: Journal of Biology Education Research
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INTRODUCTION

Indonesia has a wealth of biodiversity and ethnic diversity, supported by traditional knowledge and distinctive cultures that are widespread from Sabang to Merauke (Fakhrozi, 2009). This diversity is not only an important part of the formation of national identity but also plays a

strategic role in supporting sustainable development grounded in local wisdom. Local wisdom refers to the values, knowledge, and cultural practices that have developed within communities and reflect their way of life (Santosa, 2015). In this context, plants are not only seen as biological resources but also as cultural elements that shape the relationship between humans and their environment, thereby serving as a link between biodiversity and the community's local knowledge system (Constant, 2018).

Ethnobotany is a branch of science that studies the relationship between humans and plants, including the transmission of knowledge about the use of plants within a community (Srinivas, 2023). As part of applied biology, ethnobotany examines the interaction between humans, plants, and the environment holistically, thus playing an important role in biodiversity conservation efforts and the development of locally-based biology learning. In the context of biology education, ethnobotany enables the use of cultural phenomena and the surrounding environment as meaningful learning resources. Plants are used by local communities to meet various basic needs, including food, traditional medicine, and ritual purposes, with almost all parts of the plant being utilized (Sisilahi, 2018). The use of food plants contributes to the formation of traditional culinary diversity, which is influenced by cultural conditions and local traditions (Roza, 2023). Therefore, traditional cuisine can be seen as a representation of the relationship between biodiversity and a community's cultural knowledge system. However, the potential of traditional cuisine as a source of ethnobotanical data and a means of learning biology has not been optimally utilized. Previous ethnobotanical research has generally focused on medicinal plants, as reported by Ikbal (2023), while studies that specifically discuss traditional cuisine as a source of systematic ethnobotanical knowledge are still limited. This condition has the potential to cause the loss of local knowledge that is essential for conservation efforts and scientific research development.

Ancak is a form of earth offering ritual that reflects the close relationship between traditional communities and nature, which aims to express gratitude and strengthen togetherness through cultural practices. In the selametan ritual, various agricultural products are usually presented, including both staple foods and local commodities produced by the local community (Cahyani, 2024). The presence of various types of plants in the *Ancak* offering reflects the utilization of local biodiversity, which is rich in ecological and cultural significance. It shows how plants serve as symbols of the relationship between humans and their environment. Over time, technological advances have driven transformations in the culinary field through the emergence of more

innovative processing techniques and the development of modern culinary trends (Yıkmiş et al., 2024). In addition, cuisine has developed as a representation of local culture and identity that attracts widespread public attention (Jimenez Rodriguez et al., 2023). However, scientific studies and observations of the use of plants in traditional gastronomy, especially in *Ancak* dishes, are still very limited, even though such studies are important to support cultural preservation and the conservation of biological resources based on local knowledge.

Kalipuro and Gombengsari are two villages in Banyuwangi Regency that still preserve the *Ancak* tradition. The social conditions in both areas are characterized by a multi-ethnic community comprising Javanese, Osing, and Madurese people who interact with one another and build close social relationships. The dominant use of the Madurese language in several areas reflects the strong influence of Madurese culture in the daily lives of the local community. This cultural diversity has shaped local traditions, including the tradition of *Ancak*, which reflects a process of cultural encounter and fusion. These socio-cultural conditions enrich the variety of plant uses in ritual cuisine, which has the potential to become a source of ethnobotanical data. The *Ancak* tradition, which represents the relationship between the community and the natural environment, has great potential in the development of traditional gastronomy based on local wisdom in Banyuwangi Regency. Therefore, ethnobotanical studies of *Ancak* dishes are important for preserving biodiversity, supporting local culture, and advancing biology education. Based on the above description, this study aims to identify the types of spices used in *Ancak* cuisine and describe the composition and basic ingredients used in the preparation of *Ancak*, as part of an ethnobotanical study that contributes to the conservation of biodiversity and the development of biology education.

RESEARCH METHODS

This research was conducted from February to June 2024 in Kalipuro and Gombengsari villages, Banyuwangi Regency. The research activities included field surveys, preliminary studies, data collection and analysis, and publication. In addition, the research also included the identification of the types of spices and basic ingredients used in traditional *Ancak* cuisine. Data collection was carried out at several mosques that serve as centers for the *Ancak* tradition.

Data collection was conducted through interviews using the snowball sampling method. Snowball sampling is a method used to identify, select, and collect data through networks or ongoing relationships among individuals (Nurdiani, 2014). In-depth interviews supplemented with

questionnaires were used to gather information about the types of spice plants and basic ingredients used in the production of *Ancak*. A total of 40 informants aged 38-79 years were selected because they were considered to have in-depth experience and knowledge related to the use of spice plants and the stages of making *Ancak*. The interview process was carried out through direct interaction between the researcher and the informants, both using interview guidelines and through flexible and evolving conversations. The qualitative data were then analyzed using thematic analysis with an ethnobotanical approach, which focused on the use of plants, their functions, and cultural meanings in the preparation of *Ancak* dishes (Boyce et al., 2006; Dean, 2024).

Data analysis in this study used Use Values (UVs) as used by Leonti (2022), as follows:

$$UVs = \frac{n}{N}$$

Description

UVs : Use values of a species

n : Number of uses of the species mentioned by the informant

N : Total informants who recommend

Meanwhile, the formula for analyzing the Index of Cultural Significance (ICS) based on the method used by Ratnani et al. (2021) is as follows:

$$ICS = \sum_{i=1}^n (q \times i \times e) \times n$$

Description

ICS : Is the sum of calculating the utilization of a plant species from 1 to n.

n : Indicates the last nth utilization

i : Is the value of 1 to n, and so on, the calculation of the parameter value of a plant species is as follows.

q : Quality value can be calculated using a score (5; staple foods, 4; secondary or supplementary foods and primary materials, 3; other foodstuffs, secondary materials, and medicinal plants, 2; rituals, mythology, recreation, and 1; mere recognition).

i : Intensity value describes the intensity of utilization of useful plant species by giving a value (5; very high use, 4; the high intensity of use, 3; the moderate intensity of use, 2; the low intensity of use, 1; the very rare intensity of use).

e : *Exclusivity value* (2; most preferred, part of the main selection and not second to none, 1; several types are possible choices, 0.5; secondary material

As well as Relative Frequency of Citation (RFC) analysis, as in the data analysis conducted by Zenderland et al. (2019).

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

Description

FC : Species citation frequency

N : Total number of respondents in the study. The range of RFC values is from 0 to 1 (where the higher RFC value of a plant indicates that the plant is highly useful in the community).

RESEARCH RESULT

An Overview of the *Ancak* Tradition and When It Is Held

The *Ancak* tradition is one of the cultural heritages of the Kalipuro and Gombengsari villages in Banyuwangi Regency, passed down from generation to generation and still preserved to this day, although in some areas its existence has begun to fade or even be abandoned due to changes in the times and lifestyles of the community. This tradition is an expression of gratitude by the community to the Almighty God for the abundance of blessings, safety, and a bountiful harvest.

Ancak is a container or vessel Figure 2A used by the communities in Kalipuro and Gombengsari villages to serve various types of food and offerings Figure 2B, which are usually presented in traditional ceremonies or celebrations. However, its meaning is not limited to being a container for serving food, but also serves as a symbol of togetherness, harmony, and the spirit of cooperation in community life.

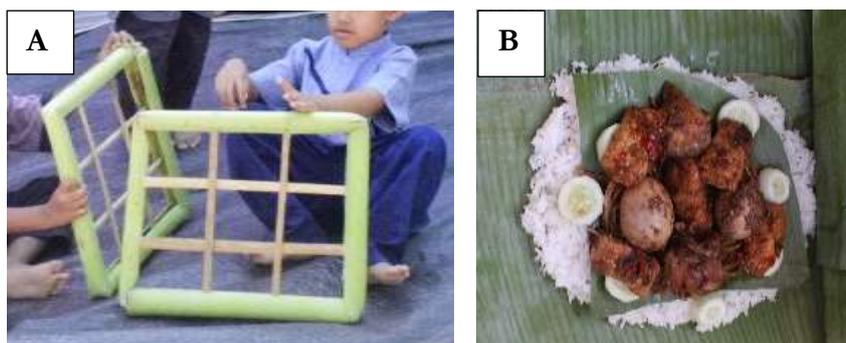


Figure 1. (A) Container or Place (B) Dish *Ancak* (Source: Personal Documentary, 2024)

Based on Table 1 regarding the timing of the *Ancak-an* tradition in Kalipuro-Gombengsari Village, most of the *Ancak-an* activities are held in conjunction with major holidays in the Hijri (Islamic) calendar, such as the Prophet Muhammad's Birthday, Isra Mikraj, Nisfu Sya'ban, and the month of Ramadan. Additionally, some events follow the Javanese calendar, such as Monday Sweet, Wednesday Sweet, and Friday Sweet, as well as one event that follows the Gregorian calendar, namely August 17. The community believes the selection of these dates to bring blessings, strengthen social bonds, and facilitate collaboration between traditional customs and religious teachings. As a result, this tradition is easily accepted across generations because it embodies the values of charity, mutual aid, and brotherhood.

Table 1. Time of *Ancak-an* Implementation in Kalipuro-Gombengsari Village

<i>Ancak-an</i> tradition moment	Implementation time		
	Java	Hijriah	Masehi
<i>Maulid Nabi Muhammad SAW</i>	-	12 Rabiul Awal	-
<i>Isra' Mikraj</i>	-	27 Rajab	-
<i>Nisfu Sya'ban</i>	-	15 Sya'ban	-
<i>Bulan Ramadhan</i>	-	21, 27 Ramadhan	-
<i>Selamatan sumber</i>	Jumat Manis	Sya'ban	-
<i>Selamatan sumur</i>	Senin Manis	Sya'ban	-
<i>Selamatan kampung</i>	Rabu Manis	Sya'ban	17 Agustus

The Diversity and Use of Spices in *Ancak* Cuisine

Based on Table 2, there are 19 types of spice plants used by the communities in Kalipuro and Gombengsari villages. These plants are not only used as flavour enhancers in traditional cuisine but also as part of traditional medicinal practices that have been passed down through generations. The plant parts utilised include various components such as rhizomes, seeds, leaves, flowers, tubers, bark, fruits, and stems, depending on the medicinal properties and functions of each plant as understood by the community.

Table 2. Level of Spice Plant Utilization by Communities in Kalipuro and Gombengsari Villages Based on UVs and ICS Values

Species	Local name (Madurese)	Organ used	Benefit		Value	
			Cuisine	Other	UVs	ICS
<i>Kaempferia galanga</i>	<i>Kencor</i>	Rhizome	The aroma is slightly spicy, but the taste is not fishy.	Sciatica, respiratory, and knee pain; treat swelling and nausea; reduce fever.	1,80	3

Species	Local name (Madurese)	Organ used	Benefit		Value	
			Cuisine	Other	UVs	ICS
<i>Alpinia galanga</i>	Laos	Rhizome	Aroma, tenderize meat, flavor, remove fishy odor.	Scurvy warms the body after childbirth.	0,50	6
<i>Zingiber officinale</i>	Jheib	Rhizome	Aroma, flavor, remove fishy odor.	It relieves nausea, colds, and coughs, warms the body, and relieves lumbago, stomach pain, sore throat, flu, and fever.	0,43	12
<i>Curcuma longa</i>	Konyek	Rhizome	Aroma, flavor, coloring, and removing fishy.	Stomachache, headache, wound medicine, stomach ulcers, body aches.	0,41	9
<i>Piper nigrum</i>	Sa'ang	Seed	Flavor, smell, reduce fishy.	Colds, colds, sexual arousal, coughing.	0,25	9
<i>Syzygium polyanthum</i>	Salam	Leaf	Aroma, remove fishy.	Reduce high blood pressure, uric acid, and cholesterol.	1,25	4,5
<i>Syzygium aromaticum</i>	Cengke	Flower	Aroma, flavor	Cold, toothache, body aches, nausea.	1,50	3
<i>Myristica fragrans</i>	Pa'ala	Seed	Flavor.	Cough medicine, lower cholesterol, high blood pressure, sexual arousal, pain relief.	2	6
<i>Allium cepa</i>	Bbebeng mera	Tuber	Taste (savory), aroma, basic seasoning.	Cold, nausea, reduced high fever, stomach pain medicine, child body scraping media.	0,20	30
<i>Allium sativum</i>	Bbebeng pote	Tuber	Flavoring, taste (savory), aroma, basic seasoning	Toothache, cholesterol, sexual arousal.	0,18	30
<i>Cinnamomum verum</i>	Kajbuh manis	Skin	Aroma, flavor	Heart health, back pain, lower blood sugar levels, colds.	5	3
<i>Tamarindus indica</i>	Accem	Fruit	Fresh flavor, reduced fishy odor, and aroma	Cough, cold, blood purifier.	6	2
<i>Aleurites moluccana</i>	Kemereb	Seed	Flavor (savory), thicken, aroma, reduce fishy odor.	Moisturize skin and improve digestion.	0,46	6
<i>Cuminum cyminum</i>	Jhinten	Seed	Aroma	Boosts immunity, sensory, and cholesterol.	2	1

Species	Local name (Madurese)	Organ used	Benefit		Value	
			Cuisine	Other	UVs	ICS
<i>Coriandrum sativum</i>	<i>Katombhâr</i>	Seed	Aroma and flavor remove fishy.	Lower cholesterol, appetite, lower blood pressure.	0,27	9
<i>Citrus hystrix</i>	<i>Jberruk porot</i>	Leaf	Aroma, flavor.	Aroma therapy.	0,15	6
<i>Cymbopogon citratus</i>	<i>Serreb</i>	Stem	Aroma, flavor, relieve fishy.	Back pain, reduce high blood pressure, for body warming drinks.	0,43	4
<i>Capsicum frutescens</i>	<i>Cabbih</i>	Fruit	Spicy taste.	—	0,07	4
<i>Capsicum annuum</i>	<i>Cabbih rajeh</i>	Fruit	Color, aroma, flavor	—	0,10	6

Plant Diversity as Composition and Basic Material for Making *Ancak* in Kalipuro and Gombengsari Villages

Based on Table 3, there are 20 types of plants used as ingredients and basic materials in the production of *Ancak* in Kalipuro and Gombengsari villages. Various parts of the plants are used, including leaves, leaf stalks, stems, tubers, and fruits. This diversity reflects the community's extensive knowledge in optimally utilizing plants with biological potential. Some plants exhibit a higher level of utilisation compared to others, both in terms of their use and their significance in culture and cuisine. This suggests that specific plant species play a crucial role in preserving traditions and reinforcing the cultural identity of the local community.

Table 3. Plant Species Used as Composition and Basic Material for Making *Ancak* Based on UVs and ICS Values in Kalipuro-Gombengsari Village

Species	Local Name (Madurese)	Organ Used	Benefits	Value	
				UVs	ICS
<i>Apium graveolens</i> *	<i>Seledri</i>	Leaf, stem	Flavoring, scent.	2	2
<i>Daucus carota</i> *	<i>Wortel</i>	Tuber	Stir-fried carrots, eye health.	0,22	4
<i>Alium fistulosum</i> *	<i>Bhebeng pre</i>	Leaf, stem	Flavoring of dishes such as soup, scent.	0,40	6
<i>Cocos nucifera</i> *, **	<i>Nyior</i>	Fruit (flesh, water)	Urap-urap, coconut milk, serundeng, young leaves on sale, fruit on sale, diarrhea, dizziness.	0,54	9
<i>Raphanus sativus</i> var. <i>hortensis</i> *	<i>Sayur lobhek</i>	Tuber	Stir-fried vegetables.	1	1
<i>Brassica chinensis</i> var. <i>parachinensis</i> *	<i>Sawi hijau</i>	Leaf	Stir-fried vegetables to complement the noodles.	0,17	4

<i>Brassica oleracea</i> *	<i>Gubis</i>	Leaf	Side vegetables, stir-fried vegetables as a side to noodles.	0,40	4
<i>Nasturtium officinale</i> *	<i>Selada air</i>	Leaf	Complementary vegetables.	1	2
<i>Cucumis Sativus</i> *	<i>Temon</i>	Leaf	Pickled vegetables	0,07	6
<i>Phaseolus vulgaris</i> *	<i>Buncis</i>	Fruit	Stir-fried vegetables to complement the noodles.	0,17	2
<i>Vigna radiata</i> *	<i>Arta'</i>	Seed	Stir-fried vegetables (sprouts).	0,50	4
<i>Parkia speciosa</i> *	<i>Pette</i>	Seed	Sambal pette, vegetable pete complementary noodles.	0,25	4
<i>Vigna sinensis</i> *	<i>Oto'</i>	Fruit	Stir-fried vegetables.	0,17	4
<i>Glycine max</i> *	<i>Kedhellib</i>	Seed	Side dish tofu, tempeh.	0,05	6
<i>Ocimum basilicum</i> *	<i>Kemangeh</i>	Leaf	Complementary vegetables.	0,25	1
<i>Oryza sativa</i> *	<i>Padi</i>	Seed	Rice, vermicelli.	0,05	50
<i>Bambusa vulgaris</i> **	<i>Perrèng</i>	Stem	Handycrafts.	0,07	4
<i>Musa paradisiaca</i> **	<i>Gbeddeng</i>	Fronds, leaf, fruit	Leaves are sold, fruit is sold, banana cobs are made into stir-fried dishes.	0,21	6
<i>Solanum tuberosum</i> *	<i>Kentang</i>	Tuber	Fried potato sauce.	0,10	4
<i>Solanum lycopersicum</i> *	<i>Tomat</i>	Fruit	Sambal, complementary vegetables.	0,50	1

Note: * = *Ancak* Composition, and ** = Basic Ingredients for Making *Ancak*

Based on Figure 2, several plants are used by communities in Kalipuro and Gombengsari villages, with varying Relative Frequency Citation (RFC) levels. Some of them show very high utilization intensity, both as staple foods and as complementary ingredients in daily food preparations. The high RFC values for certain plants reflect their consistent use by the local community, indicating dependence on local biological resources and reflecting traditional knowledge and wisdom passed down through generations. The close relationship between the community and its natural environment is a crucial step in maintaining sustainable conservation and strengthening the local cultural values that are still upheld by the community to this day.

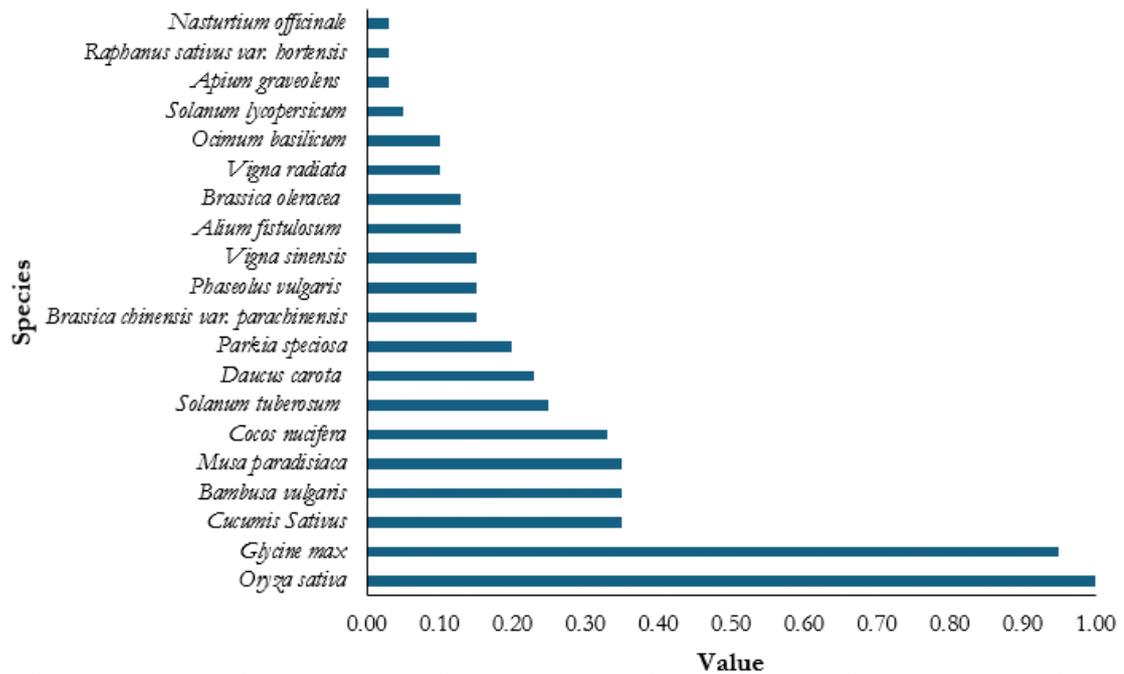


Figure 2. Relative Frequency Citation (RFC) Value of Utilized Plant Species

DISCUSSION

Benefits in Culinary

Based on the results listed in Table 2, several plant species have the highest UVs values, which play an important role in the traditional cooking practices of the Kalipuro and Gombongsari communities. Plants with the highest values contribute significantly to the cuisine by enriching the taste and aroma and preserving the authenticity of the dishes as part of local tradition. *Accem* (*T. indica*) has the highest UVs value of 6, indicating that this plant is very often used in traditional *Ancak* cuisine. This high value is due to the frequency of tamarind use in *Ancak* cuisine, mainly because of its role as a flavor and aroma enhancer, its ability to reduce fishy odors, and its distinctive fresh sour taste. The volatile compounds present in tamarind, such as hexadecanoic acid and limonene, enhance the taste and aroma of dishes (Pino et al., 2004).

Furthermore, *Kajhub manis* (*C. verum*) has a UVs value of 5, indicating its high utilization in traditional *Ancak* cuisine. The community often uses this spice to enhance the flavor and aroma of various dishes. Its consistent use in various recipes is one of the reasons for its high UVs value. This aligns with Yasir (2019), who explains that cinnamon is commonly used as an ingredient to add aroma and flavor to food and beverages. Meanwhile, *Pa'ala* (*M. fragrans*) has a UVs value of 2 and is also used by the community to enhance the flavor of *Ancak* cuisine. This spice is used in various regions as a traditional seasoning that enriches the distinctive aroma, where its pleasant

aroma and warming effect make it an important flavor enhancer in various dishes (Babua et al., 2021; Sultan et al., 2023).

Based on the ICS value, these two plants occupy an important position in the community's cultural practices, but they also play a prominent role in culinary aspects, as determinants of taste and character in *Ancak* cuisine. *Bhebeng mera* (*A. cepa*) and *Bhebeng pote* (*A. sativum*) are used at almost every stage of food preparation, serving as basic seasonings that add distinctive taste and aroma. According to the community, the role of these two bulbs is essential and difficult to replace in *Ancak* cuisine, both in the initial processing stage, such as sautéing, and as a flavor enhancer in the dish. Garlic contains allicin, an organosulfur compound that produces a distinctive aroma and taste (Mancini et al., 2020). When sliced or cooked, shallots release various volatile compounds, including sulfur derivatives that form the aroma and taste profile of the dish (Liu et al., 2022). Meanwhile, *Jheih* (*Z. officinale*) is used as a spice in cooking. However, according to the community, ginger can enhance aroma, add flavor, and reduce the fishy smell of fish or meat. Ginger contains active compounds such as gingerol, shogaol, and zingerone as well as essential oils, giving it a warm, spicy taste and distinctive aroma (Rembet, 2024). Ginger is usually added during marinating, sautéing, or boiling to ensure its aroma and properties are properly absorbed. In addition, the consistent use of ginger in cooking demonstrates its important role in *Ancak's* culinary traditions and reflects local knowledge of food processing techniques.

Seledri (*A. graveolens*) has the highest UVs value of 2 as listed in Table 3, which shows its role as an important ingredient and base material in the manufacture of *Ancak*. This plant is widely used to enhance the aroma of dishes due to its phthalide compound content, which gives it a distinctive, fresh, and slightly sweet aroma (Sellami et al., 2012). In addition to being added as a flavoring, celery is often used as an aromatic ingredient in stir-fries, soups, and broths to add depth of flavor. *Lobbek* (*R. sativus var. hortensis*) and *Selada air* (*N. officinale*) each have a UVs value of 1. Generally, people use both as stir-fry vegetables and as accompaniments to *Ancak* dishes. Watercress provides a crisp texture and umami flavor, and helps reduce the oil content in food (Chen, 2021). Meanwhile, watercress is usually served as a side dish or in a salad and complements dishes (Rahman et al., 2017).

The results of the RFC analysis, which show the varying levels of importance of different types of plants in the *Ancak* tradition, are shown in Figure 2. Some plants are mentioned frequently because of their integral role in this tradition. Padi (*O. sativa*) has the highest RFC value of 1, which

indicates that the entire community mentions this plant without exception. This high RFC value reflects the very dominant and irreplaceable role of rice in *Ancak* dishes, because rice, as a processed product, is the main staple that is always present in every serving. The presence of rice in the *Ancak* dish is not only functional but also closely related to the values of community life, so its use is consistent and universal at the household level (Sekine, 2021).

Kedbellih (*G. max*) obtained an RFC value of 0.95, indicating that almost all respondents mentioned this plant as an important component in the composition of *Ancak* cuisine. This high RFC value reflects the widespread use of soybeans within the community, mainly because they are processed into various complementary food ingredients that can be easily combined with the main components of dishes (Romulo, 2021). In addition, *Temon* (*C. sativus*) has an RFC value of 0.35, which indicates that only some people in Kalipuro and Gombengsari villages mention its use as one of the ingredients in the composition of the *Ancak* dish. This RFC value shows that the use of cucumber is selective and not always present in every serving. Thus, cucumber is not a main component, but rather an additional ingredient whose use depends on the habits and needs of each community. Plants that other species can replace generally function as supporting or complementary elements in a dish (Ugwu, 2021).

Benefits in Health

Acem (*T. indica*) plays several roles in the body's health functions. The people of Kalipuro and Gombengsari believe that tamarind has properties that help cleanse the blood and relieve coughs and colds. In addition to being used as a cooking ingredient, tamarind is also processed into drinks or simple herbal remedies that are considered to improve health and support recovery when one is unwell. According to research conducted by Firdaus (2022), the compounds in tamarind have potential antioxidant and anti-inflammatory properties, which is why tamarind is often used in traditional medicine.

The community uses *Kajhub manis* (*C. verum*) to support heart health, relieve back pain, and help lower blood sugar levels. The use of this plant is generally based on generations of experience, so cinnamon is often considered part of home remedies for minor pain complaints. This is in line with the statement by Wang and Yang (2009), that cinnamon has anti-hyperglycemic potential through its ability to increase insulin sensitivity and help regulate glucose metabolism. This community knowledge provides a scientific basis that reinforces the use of cinnamon as a natural health supplement. *Pa'ala* (*M. fragrans*) is often used by communities in traditional medicine to

relieve coughs, lower cholesterol levels, and increase sexual desire. It is generally used through simple processing methods, such as boiling, making herbal concoctions, or mixing it into warm drinks. This application has been developed based on generations of experience and the belief that nutmeg's aroma and active compounds can provide a calming effect, aid breathing, and support overall health (Al-Rawi et al., 2024).

Bhebeng mera (*A. cepa*) are believed by the community to relieve colds, nausea, and fever. According to research by Mohamed (2013), red onions are believed to contain phenolic compounds and flavonoids with antioxidant properties that protect body cells from free radical damage. Consuming red onions directly is one effective way because their antioxidant content is still optimally preserved. In contrast, high-temperature processing can reduce the content of these substances. Meanwhile, *Bhebeng pote* (*A. sativum*) is more commonly used to treat toothaches, lower cholesterol levels, and help overcome libido disorders. These benefits are due to the presence of bioactive compounds contained in garlic. These bioactive compounds are the main components that play a role in helping to fight infection and prevent blood clotting (Trifunski et al., 2015). After that, *Jheih* (*Z. officinale*) is used not only as a kitchen spice but also as an herbal medicine. In traditional medicine, ginger is used to relieve nausea, treat colds, and relieve coughs. This use is based on generations of experience and observations of ginger's rapid effects on digestive and respiratory complaints. The gingerol content in ginger acts as an anti-inflammatory, antipyretic, gastroprotective, cardiogenic, antioxidant, anticancer, antiangiogenic, and antiatherosclerotic agent (Rembet, 2024).

Benefits in Culture

Based on the ICS values presented in Table 2, spice plants vary in cultural importance in the *Ancak* tradition, with ICS values reflecting the extent to which each type of spice plays a role and is preserved in the cuisine. *Bhebeng mera* (*A. cepa*) and *Bhebeng pote* (*A. sativum*) have the highest ICS values (30). These high values indicate that these two spices are considered almost irreplaceable in people's lives, not only as seasonings and traditional medicines, but also as essential elements in cultural practices, traditional ceremonies, and culinary traditions. In Javanese tradition, both are crucial symbols of hope for a harmonious and blessed household, reflecting local values such as happiness and loyalty, and serving as a medium for preserving local wisdom and spirituality (Septia, 2024). Also, *Jheih* (*Z. officinale*) has an ICS value of 12, indicating its significant and almost irreplaceable cultural role in community life. This plant is multifunctional, serving as a home

remedy and in several simple health rituals, as well as being part of locally inherited knowledge passed down from generation to generation. In addition, ginger is also widely used in traditional ceremonies and rituals in various regions, particularly among the Alas people in Aceh, where *Jheih* (*Z. officinale*) is used in the majun ceremony (Sari, 2024).

The results of the ICS analysis of plants used as ingredients and basic materials in the manufacture of *Ancak*, as listed in Table 3, show different levels of cultural importance for each type of plant. *Padi* (*O. sativa*) has the highest ICS value, namely 50, and plays a role as both the composition and main base material in the production of *Ancak*. This high ICS value indicates that rice is an almost irreplaceable element in the *Ancak* tradition and in the daily life of the community. This high value stems from rice's central role, not only as a primary food source but also as a symbol of culture and identity for the local community. In various traditional practices, rice symbolizes harmony, offerings, celebrations, and ceremonies, as well as prosperity and balance in the relationships among humans, nature, and God. In addition, rice is reflected in local philosophy as an important part of cultural heritage passed down from generation to generation (Darlan, 2019).

This is followed by *Nyior* (*C. nucifera*), with an ICS value of 9, indicating that it plays an important, relatively high role in the community's lives. This high value stems from the fact that coconuts are not only used for food and drink but also play a significant cultural role, especially in religious rituals. This is in line with the conditions in Nusa Penida and Bali, where coconut is a very important domestic tree in religious ceremonies and almost no ceremony can be performed without coconuts or their leaves (Giambelli, 2021).

Bhebeng pre (*A. fistulosum*) have an ICS value of 6, indicating their significant role in community life. This relatively high value stems from the fact that leeks are used not only as a seasoning in everyday cooking but also have cultural significance in local traditions. This plant is often featured in special dishes at various celebrations and traditional ceremonies and has symbolic meaning in local culture, such as in wedding processions and traditional rituals. Although its role has not been explicitly documented, its use is part of local ecological knowledge passed down from generation to generation (Pugra et al., 2025).

Broadly speaking, the use of various types of plants in *Ancak's* culinary traditions not only reflects the wealth of local knowledge, but also plays an important role in preserving culture and biodiversity. The sustainable use of local plants encourages communities to continue cultivating

and conserving biological resources, while passing on traditional culinary knowledge and traditions from generation to generation. Through this tradition, local plants are not only regarded as food sources but also as an integral part of the cultural identity and knowledge system of local communities (Sulistiyowati, 2022).

However, the sustainability of *Ancak's* culinary traditions faces various challenges, including a shift in consumption patterns towards instant and modern ingredients, a decline in younger generations' interest in traditional cuisine, and limited availability of local plants due to changes in land use. Therefore, the results of this study have important implications for biology education and conservation efforts, particularly as a source of ethnobotanical learning that integrates local knowledge with the concepts of biodiversity, natural resource utilization, and food crop conservation. Data on UVs, ICS, and RFC values can provide a scientific basis for formulating conservation strategies and policies grounded in local wisdom. Thus, the sustainability of *Ancak's* culinary traditions and the preservation of biological resources can be maintained amid the social and cultural dynamics of the community (Luo et al., 2024).

CONCLUSION

There are 19 types of spice plants and 20 plant compositions and basic ingredients used in *Ancak* cuisine. The spice with the highest UVs value is (*T. indica*) with a value of 6, followed by (*C. verum*) with a value of 5, and (*M. fragrans*) with a value of 2, while the highest ICS values are found in (*A. cepa*) and (*A. sativum*) with 30 each and (*Z. officinale*) with 12. In addition, in terms of composition and basic ingredients, the highest UVs value was found in (*A. graveolens*) with a value of 2, followed by (*R. sativus var. hortensis*) and (*N. officinale*) with a value of 1 each. The highest ICS value was found in (*O. sativa*) at 30, followed by (*C. nucifera*) at 9, and (*A. fistulosum*) at 6. The highest RFC value was found in (*O. sativa*) at 1, followed by (*G. max*) at 0.95, and (*C. sativus*) at 0.35. These findings indicate that *Ancak* cuisine reflects the community's ethnobotanical richness and has strong cultural value in the community's lives.

Based on the UVs, ICS, and RFC values obtained, further research is recommended to conduct a comparative study on the utilization of plants and their cultural significance in *Ancak* cuisine between regions and generations. In addition, further research can examine differences in plant utilization based on social groups or levels of community knowledge, as well as trace changes in the cultural value of plants over time. Plants with the highest UVs and ICS values can be the focus of studies to understand the dynamics of ethnobotanical knowledge transmission. The high

RFC values of several species can also be used to analyze the social and ecological factors that influence the frequency of plant utilization, as well as to formulate community-based conservation and cultivation strategies to maintain the sustainability of biological resources and preserve local culinary traditions.

ACKNOWLEDGMENTS

We would like to thank the Kembang Galengan team and Markas Ekoliterasi Merdeka (MEM) for helping the author by providing direction in the field and providing support to the author.

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