

Ritual plant diversity and traditional knowledge in the Aneuk Jamee Tribe, Aceh, Indonesia

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Abstract. Saudah, Rubiah, Zumaidar, Fitriyana L. 2025. Ritual plant diversity and traditional knowledge in the Aneuk Jamee Tribe, Aceh, Indonesia. *Asian J Ethnobiol* 8: 347-366. Ritual plants are essential in maintaining biocultural identity among indigenous communities. However, traditional knowledge related to ritual plant use is under threat from modernization and remains poorly documented. This study aimed to systematically document the diversity of ritual plants, analyze their cultural significance, and assess their conservation relevance among the Aneuk Jamee Tribe in South Aceh, Indonesia. Ethnobotanical data were collected through semi-structured interviews with 100 key informants selected via purposive snowball sampling. Use Value (UV), Relative Frequency of Citation (RFC), and Index of Cultural Significance (ICS) were calculated to quantify the importance of each species. A total of 78 plant taxa belonging to 42 families were identified, with Poaceae being the most represented family (10 taxa). Two additional names were recognized as synonyms and therefore not counted as separate taxa. Herbaceous plants dominated (43.2%), and most species (77.2%) were cultivated, mainly in home gardens. *Oryza sativa* var. *glutinosa* (UV=0.86; RFC=0.86; ICS=179.5), *Piper betle* (UV=1.47; RFC=0.51; ICS=179.5), and *Cocos nucifera* (UV=1.54; RFC=0.76; ICS=179.5) emerged as the top three species, functioning as cultural keystone plants. These plants are used in various rituals, including weddings, births, circumcisions, agricultural rites, and mystical ceremonies. Findings emphasize the deep cultural embeddedness of ritual plant use and the urgent need to safeguard this knowledge. Home gardens serve as reservoirs of culturally significant plants, and engaging younger generations is vital for transmission and conservation.

Keywords: Aneuk Jamee Tribe, biocultural conservation, ritual plant diversity, South Aceh, traditional knowledge

Abbreviations: ICS: Index of Cultural Significance, RFC: Relative Frequency of Citation, UV: Use Value

INTRODUCTION

Indonesia is renowned for its remarkable cultural diversity, where traditions are often expressed through ritual practices (Mailin et al. 2023). Rituals are symbolic activities performed in specific sequences, that carry deep spiritual and cultural meaning (Kapoor et al. 2022). They serve as a medium for communities to connect with their ancestors, the natural world, and the divine. Within these traditions, plants play a central role, representing both the symbolic relationship between humans and nature and the unique cultural wisdom of each ethnic group (Hakim 2014; Teixidor-Toneu et al. 2018; Chaachouay et al. 2021; Bria et al. 2023).

Ritual plants function is not only as symbolic and spiritual elements, but also as resources valued for their medicinal, ecological, and ethnopharmacological importance (Chaachouay et al. 2021; David et al. 2022; Moricca et al. 2023). They are often believed to influence physical, emotional, and spiritual well-being (Fan 2016; Ma et al. 2024). Their integration into ceremonies highlights their role in strengthening cultural identity and

supporting biodiversity conservation (Quiroz et al. 2016). In Indonesia, plants are used spans diverse ceremonies, including weddings, harvest rituals, protective offerings, and healing practices. Yet, rapid modernization and declining intergenerational knowledge transfer threaten the continuity of this tradition (Putri et al. 2017; Navia et al. 2020b; Suwardi et al. 2020a).

Ethnobotanical studies in Aceh and surrounding regions underscore the importance of documenting traditional plant knowledge. Research among the Gayo people revealed extensive use of medicinal and ritual plants linked to ecological management (Iskandar and Iskandar 2017). In South Aceh, Suwardi et al. (2020b) recorded coastal community practices that integrate ritual symbolism and daily plant use. Postpartum traditions in Aceh Besar also demonstrated the significance of medicinal and protective plants for maternal care (Zumaidar et al. 2019a; Nursamsu et al. 2024). Despite these contributions, research has largely concentrated on food security and medicinal uses, with less attention to plants in ritual symbolism. This gap highlights the need to study ritual plants more comprehensively within Aceh's diverse cultural landscape.

One ethnic group that has managed to maintain its traditional practices in Aceh is the Aneuk Jamee Tribe.

The Aneuk Jamee Tribe is located primarily in South Aceh District, such as Tapaktuan, Samadua, Labuhan Haji, and Sawang Districts, with smaller populations in West Aceh, Southwest Aceh, Aceh Singkil, Simelue and Banyak Islands, represents an ethnic group where ritual plant knowledge remains underexplored. Their population, estimated at 74.000-78.000 individuals ($\pm 14\%$ of Aceh's population), constitutes nearly 30% of the South Aceh District. Descended from Minangkabau migrants, they have blended Acehese and Minangkabau traditions into distinctive cultural practices (Wulanda et al. 2021; Sefriyono et al. 2024). While ritual ceremonies remain vibrant, knowledge of plants used is passed down orally and increasingly vulnerable to erosion (Baker et al. 2020; Sutrisno et al. 2020).

The ritual plant knowledge of the Aneuk Jamee Tribe demonstrates sophisticated ecological knowledge shaped by symbolic meaning, medicinal value, and accessibility of species. These practices reflect cultural resilience while contributing to sustainable natural resource use (Nursamsu et al. 2024). This study aimed to systematically document and analyze the diversity, cultural functions, and conservation relevance of ritual plant use by the Aneuk Jamee Community in South Aceh, Indonesia. Specifically, it identifies the plant species used in ritual contexts, explores their symbolic and functional roles, and situates this knowledge within broader ethnobotanical research and biodiversity conservation discourses. By filling a critical gap in Aceh's ethnobotanical research, the study contributes to preserving cultural heritage and reinforcing the role of ritual plants in biodiversity conservation.

MATERIALS AND METHODS

Study area

This research was conducted in Kota Bahagia Sub-district, South Aceh District, Aceh Province, Indonesia. The district is geographically located between $02^{\circ}23'24''$ - $03^{\circ}44'24''$ N and $96^{\circ}57'36''$ - $97^{\circ}56'24''$ E, at an elevation of 0-25 m above sea level (m asl). The climate of Kota Bahagia is classified as humid tropical, with an average annual rainfall of 2,634.5 mm (219.5 mm per month), while more recent records from BPS indicate an average monthly rainfall of 289.5 mm and about 18 rainy days per month. The average daily temperature of 29°C (Mufti et al. 2017; BPS 2024).

The district has an area of 252.6 km² and had a population of 7,460 peoples, consisting of 3,742 males and 3,718 females. Geographically, Kota Bahagia is unique because it lies within the buffer zone of Gunung Leuser National Park, bordered by both extensive coastlines and mountains. This ecological setting provides a rich diversity of flora and fauna, including an abundance of medicinal and ritual plants. Demographically, the Aneuk Jamee Tribe is one of the three major ethnic groups in South Aceh District, alongside Acehese and Kluet. They constitute approximately 30% of the district's total population (BPS 2024). Although no specific census data exist for the Aneuk Jamee population in Kota Bahagia, field observations and previous ethnobotanical surveys confirm their strong presence in this sub-district. The research was conducted in October 2024, covering four villages within Kota Bahagia Sub-district i.e., Jombo Keupok, Alur Duamas, Ujong Tanoh, and Beutong Villages (Figure 1).

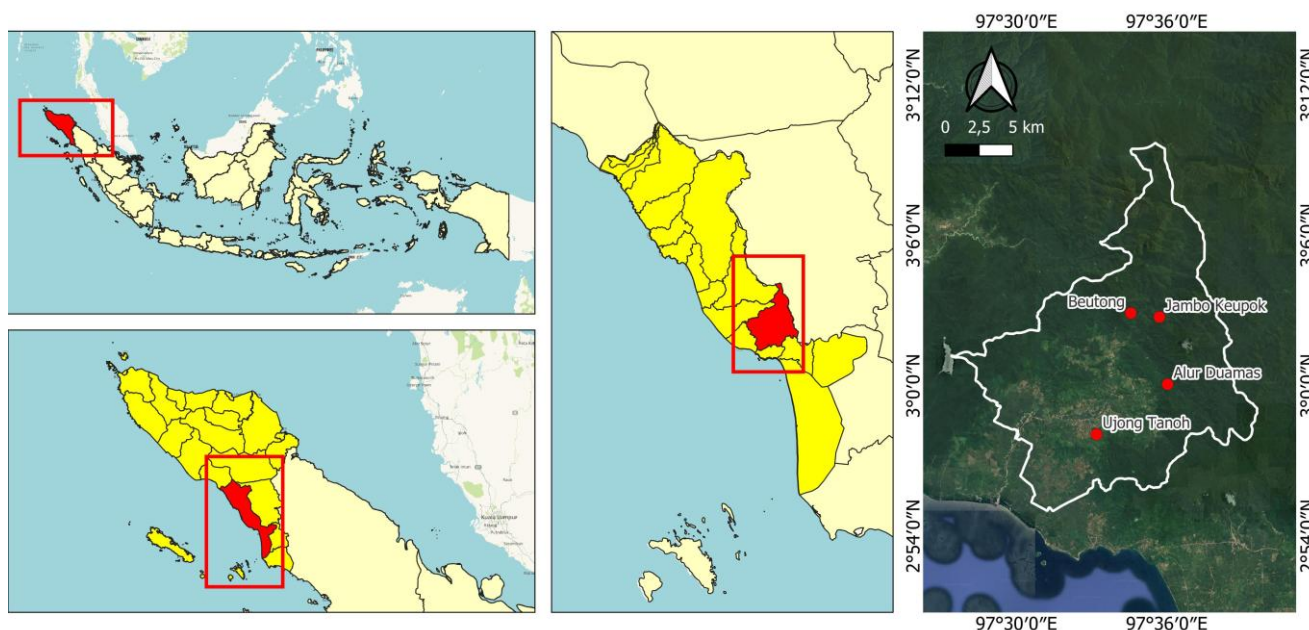


Figure 1. Research sites in Kota Bahagia Sub-district, South Aceh District, Aceh Province, Indonesia

Informant selection

A total of 100 key informants were selected using purposive snowball sampling (Table 1), a technique widely used in ethnobotanical studies (Albuquerque et al. 2014). This method was chosen because ethnobotanical knowledge is often unevenly distributed, typically concentrated among specific social groups or family lineages. Starting with initial key informants, participants were asked to refer other knowledgeable individuals, facilitating access to trust-based, culturally embedded knowledge. Efforts were made to ensure demographic variation across age and gender groups. The majority of informants (74%) were female, reflecting gendered divisions of ritual knowledge and household herbal practices. While this provided rich insights, it may also bias the results toward female-associated uses and underrepresent male ritual domains. Older respondents were more represented, potentially underestimating youth perspectives and emerging changes in ritual plant use.

Data collection

Ethnobotanical data were collected through field surveys and semi-structured interviews. Respondents were asked to identify plant species, provide local names, specify plant parts used, describe ceremonial applications, and explain preparation methods. In addition to functional details, they were encouraged to share oral narratives, symbolic meanings, and cultural associations of each plant, thus capturing intangible heritage and lived experiences (Wang 2023). This approach served as both a scientific tool and a mechanism for cultural preservation, highlighting the role of ritual plants in community identity, social cohesion, and spiritual expression (Lulekal et al. 2014; Espinoza-Pérez et al. 2021).

Plant identification

Plant identification was conducted through a combination of direct fieldwork and herbarium verification. Initial identification relied on local names and uses, supported by photographs and field notes (López-Patiño et al. 2022). Plants were documented through photographs and contextual notes. Specimens with uncertain scientific identity were collected and taxonomically verified at the Herbarium Acehense, Syiah Kuala University. Species names were standardized using the online database Plants of the World Online (POWO 2025).

Data analysis

This study applied both qualitative and quantitative ethnobotanical approaches. Qualitative data from interviews were grouped according to plant type, part used, and ritual function, while quantitative analysis employed three indices: Use Value (UV), Relative Frequency of Citation (RFC), and the Index of Cultural Significance (ICS).

Use Value (UV)

The Use Value quantifies the relative importance of each species, reflecting how frequently a plant is cited by informants (Phillips and Gentry 1993). It was calculated as:

$$UV = U/N$$

Where, U: Number of citations per species, N: Total number of informants. UV values range from 0 (no reported use) upwards, with values >1 indicating highly important and frequently used species. In this study, UV values were categorized as: low (0–0.5), moderate (0.5–1.0), and high (>1.0) (Phillips and Gentry 1993).

Relative Frequency of Citation (RFC)

The Relative Frequency of Citation (RFC) reflects the proportion of informants mentioning a plant species:

$$RFC = FC/N$$

Where, FC: Number of informants citing a species, and N: Total number of informants. RFC values range from 0 to 1; species with values closer to 1 are more popular and widely recognized within the community (Tardio and Pardo-de-Santayana 2008).

Index of Cultural Significance (ICS)

The Index of Cultural Significance (ICS) evaluates the cultural weight of each plant species by integrating aspects of frequency, intensity, usefulness, and exclusivity of use (Turner 1988):

$$ICS = \sum (Q \times I \times U \times C)$$

Where, Q: Number of informants citing the species, I: Intensity of use, U: Usefulness, and C: Cultural importance. Higher ICS values identify plants that are not only widely used but also central in ritual symbolism and cultural expression.

Ethical statement

Prior informed consent was obtained from all informants before interviews. Local community leaders approved this study, and data collection followed ethical guidelines for research involving indigenous knowledge.

Table 1. Demographic structure of respondents in Kota Bahagia Sub-district, South Aceh District, Aceh Province, Indonesia

Parameter	Specification	Frequency	Percentage
Gender	Male	26	26
	Female	74	74
Age	15–25	11	11
	26–35	14	14
	36–45	15	15
	46–55	19	19
	56–65	19	19
	>65	22	22
Education	No Schooling	12	12.1
	Elementary School	17	17.2
	Junior High School	28	28.3
	Senior High School	28	28.3
	University	14	14.1

RESULTS AND DISCUSSION

Socio-demographic characteristics

A total of 100 respondents were interviewed in four villages in Kota Bahagia Sub-district, South Aceh District, Aceh Province, Indonesia, consisting of Jambo Keupok, Alur Duamas, Ujong Tanoh, and Beutong with 20 respondents from each village. Of these, 26 were males (26%) and 74 were females (74%) (Figure 2). The predominance of female respondents reflects their central role in managing household rituals, medicinal practices, and their responsiveness during interviews, a pattern also noted in previous ethnobotanical studies in Aceh (Navia et al. 2020a).

Respondents ranged in age from 15 to >65 years (Figure 3), with the largest groups being >65 years (22.2%), 46-55 years (19.2%), and 56-65 years (19.2%). These old age groups were crucial for accessing traditional knowledge, as most information is transmitted orally across generations. In terms of education, the majority had junior secondary (28.3%) and senior secondary (28.3%) education, followed by primary school (17.2%), no schooling (12.1%), and college (14.1%) (Table 1). This variation in educational backgrounds provided a diversity of perspectives, enriching the dataset on ritual plant knowledge.

The demographic profile highlights that older community members, especially female, are the primary custodians of ritual plant knowledge. Their lived experiences and repeated participation in ceremonies enabled them to respond more effectively to interview questions compared to younger groups, whose knowledge is more limited (Sutrisno et al. 2020). These findings echo studies in Laos, Malaysia, and Kalimantan, which show that modernization and formal education often disrupt traditional knowledge systems, leading to a decline in intergenerational transmission (Aswani et al. 2018; Navia et al. 2020a). The age, gender and education distribution of respondents (Figures 2 and 3; Table 1) thus underscores the urgency of conserving ritual plant knowledge. Preserving this biocultural heritage is essential not only for sustaining cultural resilience but also for supporting biodiversity conservation strategies rooted in local wisdom.

Plants in ceremonial

A total of 78 taxa of ritual plants belonging to 42 families were recorded among the Aneuk Jamee Community in South Aceh District, which are used in various ritual traditions typical of the Aneuk Jamee Tribe (Table 2; Figure 4). Two additional names were recorded as synonyms (*Oryza sativa* var. *glutinosa* and *Zea mays* var. *saccharata*) and therefore were not counted as separate taxa. The most commonly used family is Poaceae, which includes 10 taxa. Poaceae is the dominant family found in this study due to its dominant geographical conditions of rice fields and plantations (Nursamsu et al. 2024). The family is one of the most important flowering plant

families because of its wide distribution and abundance (Gebashe et al. 2020; Farouk et al. 2023). Apart from the family Poaceae being used as an ingredient in typical rituals in the Aneuk Jamee Tribe, it is also the staple food of the Aneuk Jamee Tribe, which is usually planted seasonally by the community, such as rice and corn, where rice is considered a symbol of prosperity for the community (Sharif et al. 2014; Fukagawa and Ziska 2019; Sen et al. 2020).

It should be noted that the species identification observed was relatively higher compared to the previous study conducted by Sutrisno et al. (2020) which found that the Aneuk Jamee Tribe of South Aceh has extensive knowledge of the use of plants in various rituals, with more than 51 taxa used as ingredients in various traditional rituals of the Aneuk Jamee Tribe. The Karo tribe in North Sumatra utilizes as many as 47 plant taxa consisting of 24 families used in traditional rituals of the Karo Tribe (Apriani et al. 2023). From the Dayak Kanayatn tribe in Kalimantan, by utilizing 26 taxa from 12 plant families used for traditional rituals of gawai, birth, death, opening fields, and marriage (Kholifah et al. 2020; Musmuliadi et al. 2022). The Sasak tribe in West Nusa Tenggara utilizes 22 taxa from 15 families used in the peraq api ritual (Rahayu et al. 2023). The Javanese tribe in Central Java utilizes 22 taxa in the ubarampe ritual, which shows a close relationship between indigenous knowledge and biodiversity (Adinugraha et al. 2024). The Osing tribe in Banyuwangi, East Java, utilizes 78 taxa from 41 families (Nurchayati and Ardiyansyah 2018). This data shows that there is still a variety of plant utilization in terms of rituals. In addition, the number of species found and documented indicates that the vegetation and knowledge of ritual plants in the study area are still preserved (Zemede et al. 2024).

In addition to references from tribes in Indonesia, there are also references to knowledge of ritual plants from other countries, such as the Moroccan people have a good knowledge of ritual plants and a large diversity of plants used in various rituals and religious ceremonies in Morocco. A total of 112 plant taxa grouped into 21 families are used for socio-religious rituals and ceremonies. The most frequently mentioned plant family was Apiaceae (10 species), followed by Fabaceae and Lamiaceae. This study shows that many plant species play an important role in socio-religious rituals and ceremonies in Morocco (Chaachouay et al. 2021). Turning to Brazil, there are 86 species belonging to 37 botanical families utilized by communities in Terreiro, Brazil, that are used in various religious rituals (Pagnocca et al. 2020).

Plant habitus

Based on the plant habitus, herbs dominate with the highest percentage, which is 43.2%. It was followed by trees (13.6%), vines (13.6%), shrubs and bushes (11.1%), and palms (7.4%). This distribution shows the diversity of plant growth forms in the observed ecosystem (Figure 5).

Table 2. Plants in the ceremonial of the Aneuk Jamee Tribe in South Aceh, Aceh, Indonesia

Families	Botanical name	Local name	Habitus	Status	Location found	Part used	Ritual of Aneuk Jamee Tribe	UV	RFC	ICS
Acanthaceae	<i>Barleria noctiflora</i> L.f.	<i>Daun madu</i>	Herb	Wild	Forest edge	Flower	<i>Pernikahan</i>	0.63	0.36	2.6
	<i>Clinacanthus nutans</i> (Burm.f.) Lindau	<i>Sugi putiah</i>	Shrub	Wild	Yard, forest edge	Leaf	<i>Tampung tawar, tulak bala, kanduri ubek padi</i>	1.07	0.88	169.5
	<i>Justicia gendarussa</i> Burm.f.	<i>Sugi itom</i>	Shrub	Wild	Yard, forest edge	Leaf, stem	<i>Tampung tawar, tulak bala, kanduri ubek padi</i>	0.89	0.90	169.5
Amaranthaceae	<i>Amaranthus spinosus</i> L.	<i>Bayam duri</i>	Herb	Wild	Garden, forest edge	Whole plant	<i>Lahiran</i>	0.66	0.74	2.30
	<i>Celosia argentea</i> L.	<i>Bungo bayom</i>	Herb	Wild	Yard	Leaf, flower	<i>Lahiran</i>	0.62	0.53	4.2
Amaryllidaceae	<i>Allium cepa</i> L.	<i>Bawang siah</i>	Herb	Cultivated	Garden	Rhizome	<i>Sunatan, pernikahan</i>	0.62	0.75	83.2
	<i>Allium sativum</i> L.	<i>Bawang putiah</i>	Herb	Cultivated	Garden	Rhizome	<i>Sunatan, pernikahan</i>	0.63	0.73	103.6
	<i>Crinum asiaticum</i> L.	<i>Babakuong</i>	Herb	Wild	Yard, forest edge	Flower	<i>Pernikahan</i>	0.65	0.71	5.2
Annonaceae	<i>Annona muricata</i> L.	<i>Dien lando</i>	Tree	Cultivated	Yard	Leaf, flower	<i>Tulak bala</i>	0.63	0.52	31.8
Apocynaceae	<i>Catharanthus roseus</i> (L.) G.Don	<i>Bungo dara</i>	Shrub	Wild	Yard	Flower	<i>Pernikahan, mandi baluluak, sunatan</i>	0.74	0.53	46.8
Araceae	<i>Colocasia esculenta</i> (L.) Schott	<i>Keladi</i>	Herb	Cultivated	Yard, garden	Tuber, stem, leaf	<i>Pernikahan dan sunatan</i>	0.7	0.56	25.8
Araliaceae	<i>Polyscias scutellaria</i> (Burm.f.) Fosberg	<i>Tapak leman</i>	Shrub	Cultivated	Yard, forest edge	Leaf	<i>Tulak bala, kanduri ubek padi</i>	0.56	0.6	22.8
Arecaceae	<i>Areca catechu</i> L.	<i>Pinang</i>	Tree	Cultivated	Yard, garden	Leaf, flower, seed, fruit	<i>Pemulia jame, tulak bala, turun tanah, tampung tawa</i>	0.55	0.84	154.5
	<i>Arenga pinnata</i> (Wurmb) Merr.	<i>Ijuok</i>	Tree	Cultivated	Forest edge, forest	Leaf	<i>Tulak bala, tampung tawa, kanduri ubek padi</i>	0.65	0.58	56.1
	<i>Cocos nucifera</i> L.	<i>Karambie</i>	Tree	Cultivated	Yard	Leaf, fruit, flower	<i>Pambaok umah kanduri, pernikahan, sunatan, turun tanah, tulak bala, mandi baluluok, antek linto</i>	1.54	0.76	179.5
	<i>Metroxylon sagu</i> Rottb.	<i>Sagu</i>	Tree	Cultivated	Riverbank	Stem	<i>Rapat ninik mamak, rapat umum, malimpiang</i>	0.63	0.73	27.2
	<i>Salacca zalacca</i> (Gaertn.) Voss	<i>Salak</i>	Tree	Cultivated	Forest edge, swamp edge	Fruit	<i>Molod</i>	0.79	0.75	21
Asparagaceae	<i>Cyrtostachys renda</i> Blume	<i>Pinang siah</i>	Tree	Cultivated	Yard	Whole plant	<i>Pernikahan</i>	0.63	0.44	6.3
	<i>Cordyline fruticosa</i> (L.) A.Chev.	<i>Junjuang</i>	Shrub	Wild	Yard, rice field	Leaf	<i>Tampung tawa, tulak bala, kanduri ubek padi.</i>	0.84	0.71	143.2
Aspleniaceae	<i>Thelypteris afra</i> (Christ) C.F.Reed	<i>Paku cemin aie</i>	Herb	Wild	Riverbank, forest edge, forest	Leaf	<i>Tulak bala</i>	0.69	0.31	29.2
Asteraceae	<i>Ageratum conyzoides</i> L.	<i>Simamih</i>	Herb	Wild	Garden, forest edge, rice field	Leaf	<i>Lahiran</i>	0.64	0.47	32.6
Basellaceae	<i>Bidens pilosa</i> L.	<i>Bungo adet-adet</i>	Herb	Wild	Forest edge, forest	Flower	<i>Pernikahan</i>	0.57	0.44	22.4
	<i>Basella alba</i> L.	<i>Limayuong</i>	Climber	Cultivated	Yard	Leaf, flower	<i>Lahiran</i>	0.61	0.72	28.1
Bromeliaceae	<i>Ananas comosus</i> (L.) Merr	<i>Noneh</i>	Herb	Cultivated	Yard	Fruit	<i>Molod</i>	0.58	0.48	62.8
Cannaceae	<i>Canna indica</i> L.	<i>Bungo tasbih</i>	Herb	Wild	Forest edge	Leaf, flower	<i>Pernikahan</i>	0.75	0.75	9.8

Caricaceae	<i>Carica papaya</i> L.	<i>Botiek</i>	Herb	Cultivated	Yard, rice field, garden	Leaf, fruit, flower	<i>Lahiran, tulak bala</i>	0.69	0.55	98.4
Combretaceae	<i>Combretum indicum</i> (L.) DeFilipps	<i>Pocah pingan</i>	Climber	Wild	Yard	Flower	<i>Mandi baluluok</i>	0.71	0.44	68.4
Convolvulaceae	<i>Ipomoea batatas</i> (L.) Lam.	<i>Ubi jala</i>	Vine	Cultivated	Garden	Tuber	<i>Rapat ninik mamak, rapat umum</i>	0.57	0.43	67.6
Crassulaceae	<i>Kalanchoe pinnata</i> (Lam.) Pers.	<i>Sidingin</i>	Herb	Cultivated	Yard	Leaf	<i>Turun tanah</i>	0.59	0.72	64.4
Cucurbitaceae	<i>Citrullus lanatus</i> (Thunb.) Matsum. & Nakai	<i>Malikai</i>	Climber	Cultivated	Rice field, garden	Fruit	<i>Molod, pernikahan</i>	0.85	0.79	75.2
	<i>Cucurbita moschata</i> Duchesne	<i>Labu bosi</i>	Climber	Cultivated	Garden	Fruit	<i>Rapat ninik mamak, rapat umum</i>	0.59	0.71	49.2
	<i>Lagenaria siceraria</i> (Molina) Standl.	<i>Labu aie</i>	Climber	Cultivated	Yard, garden	Fruit	<i>Kanduri ubek padi</i>	0.63	0.43	52.8
Cyperaceae	<i>Cyperus rotundus</i> L.	<i>Umpuik sowuik</i>	Herb	Wild	Yard, rice field	Whole plant	<i>Tampung tawar, tulak bala, kanduri ubek padi</i>	0.72	0.36	22.8
Dioscoreaceae	<i>Dioscorea hispida</i> Dennst.	<i>Gaduong tanah</i>	Climber	Wild	Forest edge	Tuber	<i>Lahiran</i>	0.83	0.75	62.4
Euphorbiaceae	<i>Acalypha hispida</i> Burm.f.	<i>Ekor kucing</i>	Herb	Wild	Yard, forest edge	Leaf, flower	<i>Lahiran</i>	0.65	0.65	56.1
	<i>Manihot esculenta</i> Crantz	<i>Ubi togak</i>	Shrub	Cultivated	Yard, garden, rice field	Tuber	<i>Rapat ninik mamak, rapat umum, malomang</i>	0.63	0.46	23
	<i>Codiaeum variegatum</i> (L.) Rumph. ex A.Juss.	<i>Bungo kubuo</i>	Shrub	Wild	Yard	Leaf	<i>Tulak bala</i>	0.61	0.46	6.3
Fabaceae	<i>Vigna radiata</i> (L.) R.Wilczek	<i>Kacang ija</i>	Shrub	Cultivated	Rice field, garden	Seed	<i>Rapat ninik mamak, rapat umum</i>	0.61	0.53	43.2
Lamiaceae	<i>Clerodendrum chinense</i> (Osbeck) Mabb.	<i>Bungo susun</i>	Shrub	Wild	Forest edge	Flower	<i>Pernikahan</i>	0.61	0.46	43.2
	<i>Clerodendrum thomsoniae</i> Balf.	<i>Kantin</i>	Climber	Wild	Yard	Flower	<i>Pernikahan</i>	0.65	0.63	33.2
Lythraceae	<i>Lawsonia inermis</i> L.	<i>Inai</i>	Shrub	Cultivated	Yard	Leaf	<i>Pernikahan, sunatan, turun tanah, aqiqah</i>	1.34	0.87	154.5
Malvaceae	<i>Durio zibethinus</i> L.	<i>Dien</i>	Tree	Cultivated	Garden, forest edge, forest	Leaf	<i>Tulak bala, kanduri ubek padi</i>	0.62	0.59	28.1
	<i>Hibiscus arnottianus</i> A.Gray	<i>Bungo ayo putiah</i>	Shrub	Cultivated	Yard	Flower	<i>Pernikahan, takono</i>	0.61	0.45	47.1
	<i>Hibiscus rosa-sinensis</i> L.	<i>Bungo ayo siah</i>	Shrub	Cultivated	Yard	Flower	<i>Pernikahan, takono</i>	0.52	0.30	9.8
Menispermaceae	<i>Cyclea barbata</i> Miers	<i>Cincau</i>	Climber	Wild	Forest edge	Leaf	<i>Pernikahan</i>	0.61	0.66	98.4
Moraceae	<i>Artocarpus heterophyllus</i> Lam.	<i>Cibodak</i>	Tree	Cultivated	Garden, forest	Leaf, Fruit	<i>Pernikahan, sunatan</i>	0.91	0.4	26.4
Musaceae	<i>Musa acuminata</i> Colla	<i>Pisang Abin</i>	Herb	Cultivated	Yard, garden	Fruit, Stem	<i>Turun tanah, pernikahan, sunatan</i>	0.67	0.64	31.8
	<i>Musa balbisiana</i> Colla	<i>Pisang wak</i>	Herb	Cultivated	Yard, garden	Fruit, Stem	<i>Turun tanah, pernikahan, sunatan</i>	0.61	0.58	25.2
Myrtaceae	<i>Syzygium malaccense</i> (L.) Merr. & L.M.Perry	<i>Jambu boy</i>	Tree	Cultivated	Yard, garden, forest edge	Leaf	<i>Pernikahan, sunatan</i>	0.83	0.52	56.1
Oxalidaceae	<i>Averrhoa bilimbi</i> L.	<i>Limbieng</i>	Tree	Cultivated	Yard	Leaf, Fruit	<i>Lahiran, pernikahan</i>	0.71	0.66	24.6
Nyctaginaceae	<i>Mirabilis jalapa</i> L.	<i>Bungo kombang subuh</i>	Shrub	Wild	Yard	Flower	<i>Pernikahan, mandi baluluak, sunatan</i>	0.64	0.40	12.8
	<i>Bougainvillea spectabilis</i> Willd.	<i>Bungo kotek</i>	Bush	Cultivated	Yard	Flower	<i>Pernikahan, mandi baluluak, sunatan</i>	0.62	0.53	15.2

Pandanaceae	<i>Pandanus amaryllifolius</i> Roxb.	<i>Panden musang</i>	Herb	Wild	Yard, forest edge	Leaf	<i>Mandi baluluok, mandi ayi yayo, aie sembilan</i>	0.63	0.60	37.8
Piperaceae	<i>Pandanus tectorius</i> Parkinson	<i>Panden duri</i>	Herb	Wild	Yard, forest edge	Leaf	<i>Turun tanah</i>	0.84	0.47	24.4
	<i>Piper betle</i> L.	<i>Sirih</i>	Vine	Cultivated	Yard, garden	Leaf	<i>Pernikahan, antek tando, turun tanah, tampung tawa, sunatan, angkek umah, rapek ninik mamak, rapek umum, pemulia jame</i>	1.47	0.51	179.5
Poaceae	<i>Piper sarmentosum</i> Roxb.	<i>Sirih air</i>	Shrub	Wild	Forest edge	Leaf	<i>Tulak bala</i>	0.65	0.73	23.2
	<i>Piper nigrum</i> L.	<i>Lado ketek</i>	Climber	Cultivated	Yard, garden	Fruit	<i>Lahiran</i>	0.63	0.33	9.8
	<i>Bambusa bambos</i> (L.) Voss	<i>Buluoh</i>	Herb	Cultivated	Forest edge, riverbank	Stem	<i>Tampung tawar, tulak bala, kanduri ubek padi, malomang, mak meugang</i>	0.61	0.62	37.2
	<i>Bambusa vulgaris</i> Schrad. ex J.C.Wendl.	<i>Buluoh kuniang</i>	Herb	Cultivated	Forest edge, riverbank	Stem	<i>Tampung tawar, tulak bala, kanduri ubek padi</i>	0.62	0.48	39.2
	<i>Cymbopogon citratus</i> (DC.) Stapf	<i>Sereh</i>	Herb	Cultivated	Yard, garden, rice field	Leaf, Stem	<i>Tulak bala, kanduri ubek padi, Lahiran</i>	0.61	0.68	25.8
	<i>Imperata cylindrica</i> (L.) Raeusch.	<i>Daun padang</i>	Herb	Wild	Garden, rice field, forest edge	Whole Plant		0.66	0.69	35.2
	<i>Oryza sativa</i> L	<i>Padi</i>	Herb	Cultivated	Rice field	Seed	<i>Tampung tawar, malimpiang, antek fitrah</i>	0.82	0.64	179.5
	<i>Oryza sativa</i> L. (syn. <i>Oryza sativa</i> var. <i>glutinosa</i>)	<i>Padi puluik</i>	Herb	Cultivated	Rice field	Seed	<i>Pernikahan, sunatan, turun tanah, tampung tawar, angkeh umah, kandui padi, malom naik kaji, malom patomet kaji, bukak lahan, tulak bala, molod, lahiran, takono, mak meugang, buek teraktak, aqiqah, malomang</i>	1.57	0.86	179.5
	<i>Saccharum officinarum</i> L	<i>Tobu botuong</i>	Herb	Cultivated	Riverbank, forest edge	Stem	<i>Turun tanah, molod, antek linto</i>	0.61	0.77	74.7
	<i>Saccharum officinarum</i> L.	<i>Tobu siah</i>	Herb	Cultivated	Yard, rice field	Stem	<i>Turun tanah, molod, antek linto</i>	0.82	0.45	65.4
Rosaceae	<i>Zea mays</i> L.	<i>Jaguang</i>	Herb	Cultivated	Rice field, garden	Seed	<i>Tampung tawa</i>	0.67	0.71	71.4
	<i>Zea mays</i> L. (syn. <i>Zea mays</i> var. <i>saccharata</i>)	<i>Jaguong manih</i>	Herb	Cultivated	Rice field, garden	Seed	<i>Rapat ninik mamak, rapat umum</i>	0.61	0.72	37.6
Rubiaceae	<i>Malus domestica</i> (Suckow) Borkh.	<i>Apel</i>	Tree	Cultivated	Garden	Fruit	<i>Molod, lahiran</i>	0.83	0.43	65.7
Rutaceae	<i>Coffea canephora</i> Pierre ex A.Froehner	<i>Kopi</i>	Bush	Cultivated	Yard, garden	Seed	<i>Pernikahan, sunatan, turun tanah, angkek umah, buek teratak, antek linto</i>	0.71	0.50	52.8
	<i>Morinda citrifolia</i> L.	<i>Mengkudu</i>	Tree	Cultivated	Yard	Leaf	<i>Tulak bala</i>	0.64	0.38	59.1
	<i>Uncaria gambir</i> (W.Hunter) Roxb.	<i>Gambie</i>	Tree	Cultivated	Forest edge	Fruit	<i>Pernikahan, pemulia jame</i>	0.62	0.51	43.4
	<i>Citrus × aurantiifolia</i> (Christm.) Swingle	<i>Asom kaco</i>	Tree	Cultivated	Garden	Fruit	<i>Pernikahan</i>	0.63	0.57	25.2

	<i>Citrus hystrix</i> DC.	<i>Asom limau purut</i>	Tree	Cultivated	Garden	Fruit	<i>Mandi ayi yayo, aie sembilan</i>	0.84	0.33	27.2
	<i>Citrus maxima</i> (Burm.) Merr.	<i>Jeruk bali</i>	Herb	Cultivated	Yard	Fruit	<i>Pernikahan</i>	0.7	0.4	49.2
Selaginellaceae	<i>Selaginella doederleinii</i> Hieron.	<i>Paku ayom</i>	Shrub	Wild	Forest edge	Whole Plant	<i>Tulak bala</i>	0.65	0.43	25.6
Solanaceae	<i>Capsicum frutescens</i> L.	<i>Lado godang</i>	Shrub	Cultivated	Yard, garden	Fruit	<i>Lahiran, pernikahan</i>	0.63	0.62	68.7
	<i>Capsicum annuum</i> L.	<i>Lado unggeh</i>	Herb	Cultivated	Yard, garden	Fruit	<i>Lahiran</i>	0.61	0.38	61.8
Zingiberaceae	<i>Alpinia galanga</i> (L.) Willd.	<i>Langkuweh</i>	Herb	Cultivated	Yard, garden	Rhizome	<i>Lahiran</i>	0.62	0.69	37.6
	<i>Kaempferia galanga</i> L.	<i>Bolei</i>	Herb	Cultivated	Yard, garden	Rhizome	<i>Pemulia jame, rapat ninik mamak, rapek umum, antek tando</i>	0.61	0.72	86.8
	<i>Curcuma longa</i> L.	<i>Kunik</i>	Herb	Cultivated	Yard, garden	Rhizome	<i>Lahiran, takono</i>	0.66	0.43	120.5

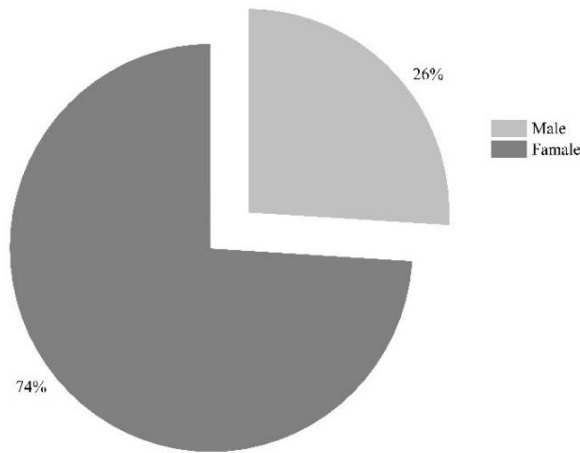


Figure 2. Gender distribution of respondents

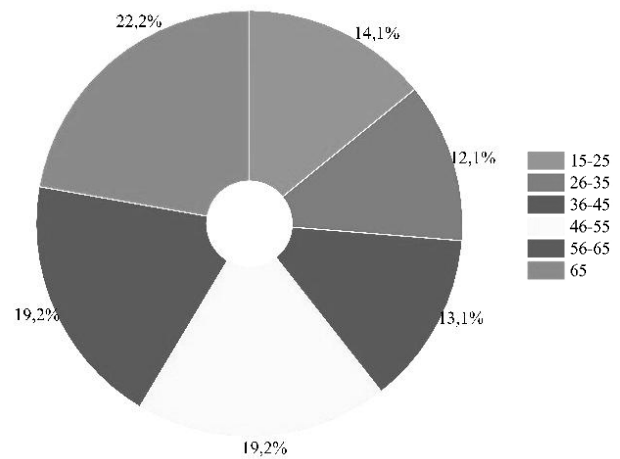


Figure 3. Distribution of respondents across age categories

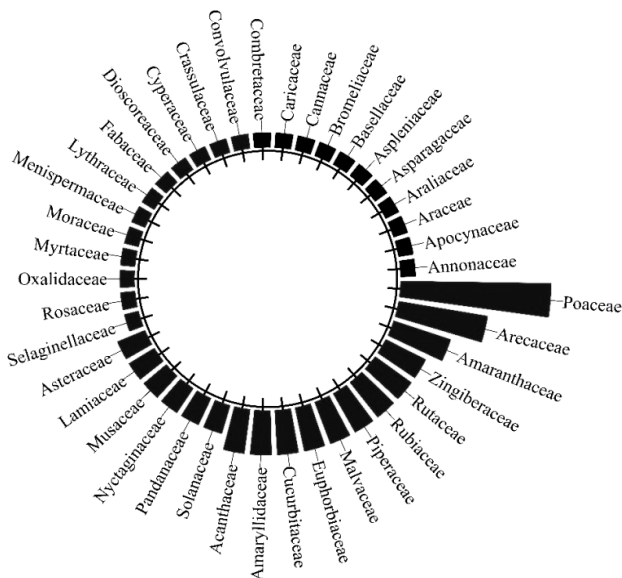


Figure 4. Distribution of ritual plant species across 42 families recorded among the Aneuk Jamee Community in South Aceh, Indonesia

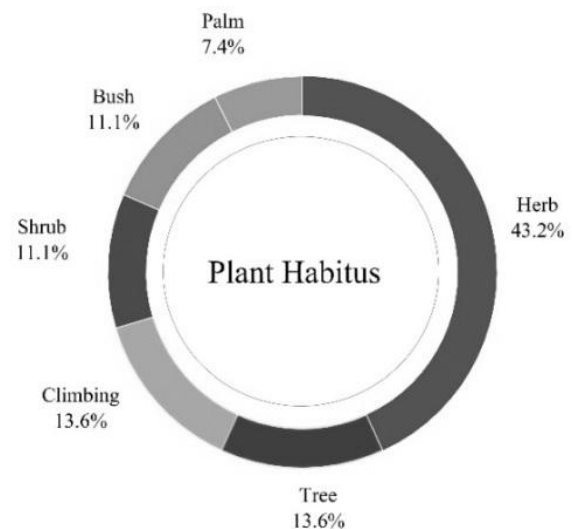


Figure 5. Distribution of plant habitus among ritual plants used by the Aneuk Jamee Tribe in South Aceh, Indonesia

This diversity of plant species indicates a rich ecosystem, where each category has a different role in the environment (Li et al. 2022). The dominance of herb species indicates their importance in providing ground cover, supporting soil stability, and being a food source for a variety of organisms. Trees, at a substantial percentage, contribute significantly to carbon sequestration, provide shade, and create habitat for wildlife. Vine plants add vertical structure to the ecosystem, allowing for increased light capture and biodiversity. Shrubs, although less numerous, offer important cover and food for many species, while the small percentage of grasses and palms demonstrate their specific ecological niche. Overall, this distribution emphasizes the interconnectedness between these plant groups and their contribution to a balanced and thriving ecosystem (Losapio et al. 2024).

Plant status and native habitat

Based on the plant status, cultivated species are more dominant when compared to wild plants, with the percentage of cultivated plants of 71 taxa (77.2%) and wild plants of 21 taxa (22.8%). Meanwhile, the habitat of ritual plants is dominated by yards with a percentage of 36.1%, followed by gardens (24.8%), forest edges (20.3%), rice fields (10.5%), forests (3.8%), riverbanks (3.8%), and wetland edges (0.8%) (Figure 6).

The status of wild and cultivated plants reflects the difference in sustainability and utilization conditions between naturally growing and cultivated plants. Cultivated plants are developed through human intervention, with the aim of increasing productivity, quality, or plant resistance to certain environmental conditions. Wild plants, on the other hand, often grow in their native habitats without human intervention, adapted to their surroundings and have

important ecological value as guardians of the biodiversity balance and providers of food sources and natural medicines for local fauna. Their status highlights the importance of maintaining a balance between the utilization of wild and cultivated plants, as well as the implementation of sustainable cultural practices that consider conservation and ecosystem balance. Cultivation of ritual plants in both cultivated and wild forests should also be commercially viable, as cultivation of ritual plants in forests does not alter the function of the forest as a producer of environmental services (Sutrisno et al. 2020).

The most common plants in this study were found in home garden, a garden land that is often utilized and easily accessible when needed and provides various ecosystem services, both directly and indirectly (Sarkar et al. 2019). Home-garden systems not only aim to provide materials for rituals, but also food security, nutrition, and daily household consumption (Whitney et al. 2017; Hanun et al. 2023). In addition, it is also utilized in growing other products such as medicinal materials, fuel, construction materials, and ornamental items that have important values (Wiryono et al. 2016). Home yards play an important role in supporting the livelihoods of local communities by utilizing the plants grown in the yard (Yadav et al. 2018).

Home yards are used to provide food and medicine to fulfill daily needs in Aceh (Mardudi et al. 2020; Ramaidani and Navia 2020a; Saudah et al. 2021, 2022; Suwardi et al. 2023; Nursamsu et al. 2024), while peoples in West Java utilize yard plants for food, medicine, ornamental plants, industrial materials, and other uses (Raihandhany and Purnomo 2025). In Kampung Masjid Ijok, Perak, Malaysia, homeyard agroforestry consists mainly of food, medicinal, and ornamental plants (Ramli et al. 2021). Home gardens in Sri Lanka provide low-cost food security throughout the year, especially for poor farmers (Moricca et al. 2023). Similarly, in rural Africa, home gardens support smallholder food security (Gifawesen et al. 2020).

The predominance of cultivated species (77.2%) further underscores the role of home gardens and agroecosystems as biocultural reservoirs that sustain both ecological availability and cultural continuity (Quiroz et al. 2016; Navia et al. 2020a). Staple crops such as *O. sativa* and *Z. mays* symbolize prosperity and fertility, while ritual ornamentals such as *Cordyline fruticosa* represent purification. This interdependence between ecological landscapes and ritual practices highlights how plant availability shapes cultural salience.

Quantitative indices of ritual plant use

Quantitative ethnobotanical indices, such as Use Value (UV), Relative Frequency of Citation (RFC), and Index of Cultural Significance (ICS), were applied to assess the cultural salience of ritual plants among the Aneuk Jamee Community. These indices, when combined, provide a comprehensive understanding of both the functional roles and symbolic meanings of plant species used in traditional ceremonies. Several species consistently scored high across all indices, reflecting their central roles in ritual life (Table 2). *Oryza sativa* var. *glutinosa* (UV=0.86; RFC=179.5; ICS=179.5) emerged as the most culturally significant

species, extensively used in ceremonies such as weddings, circumcisions, childbirth rituals, and harvest offerings. *Justicia gendarussa* (UV=0.90; RFC=169.5; ICS=169.5) and *Clinacanthus nutans* (UV=0.88; RFC=169.5; ICS=169.5) also demonstrated high values, reflecting their repeated use in protective rituals like *tampung tawar* and *tulak bala*. Similarly, *Lawsonia inermis* (UV=0.87; ICS=154.5) and *Areca catechu* (UV=0.84; ICS=154.5) are frequently incorporated into marriage and transitional life events. *Cocos nucifera* (UV=0.76; ICS=179.5) stands out for its multifunctionality across ceremonies, ranging from *pemulia jamee* to *mandi baluluok*. Additionally, *C. fruticosa* (UV=0.71; ICS=143.2) and *Curcuma longa* (UV=0.40; ICS=120.5) represent plants with both spiritual and medicinal significance, while *Piper betle* (UV=0.51; ICS=179.5) and *O. sativa* (UV=0.64; ICS=179.5) further emphasize the symbolic and material importance of staple and ritual plants.

The combination of high UV, RFC, and ICS values across these top ten plant species *O. s.* var. *glutinosa*, *O. sativa*, *C. nucifera*, *P. betle*, *J. gendarussa*, *C. nutans*, *L. inermis*, *A. catechu*, *C. fruticosa*, and *C. longa* highlights their dual roles as both materially useful and symbolically potent components of ritual practice (Table 2). Their cultural salience underscores the need to prioritize these species for conservation and ethnobotanical education, ensuring that traditional knowledge is preserved and transmitted across generations.

Similar findings have been reported among Malay, Thai, and Filipino communities, where plants such as rice, betel, and coconut carry layered meanings in birth, marriage, and death ceremonies (Teixidor-Toneu et al. 2018). Moreover, many ritual plants also hold medicinal value, including *C. longa*, and *J. gendarussa*. This functional overlap between ethnomedicine and ritual symbolism reflects a dual-purpose use of plants, wherein ceremonial practices also serve healing functions. Such ethnopharmacological convergence has been widely documented among Balinese, Thai hill tribes, and other Southeast Asian ethnic groups, where ritual and medicine often intersect (Boonma et al. 2023).

Use Value (UV)

The Use Value (UV) index was applied to assess the cultural importance and frequency of use of ritual plants among the Aneuk Jamee Community. UV values ranged from 0.52 to 1.57 (Figure 7, Table 2), with the highest recorded for *O. sativa* (1.57), followed closely by *C. nucifera* (1.54) and *P. betle* (1.47). These plants appeared across multiple ceremonial contexts, such as weddings, circumcisions, house blessings, and agricultural rituals, reflecting their multifunctionality and symbolic indispensability. Some species, such as *L. inermis* (1.34), *C. nutans* (1.07), and *Artocarpus heterophyllus* (0.91), also scored highly, indicating their ritual utility in specific functions, including body ornamentation, spiritual protection, and ritual meals. The high UV values of these plants suggest their embeddedness in traditional ceremonial systems and frequent, repeated application.

Relative Frequency of Citation (RFC)

The Relative Frequency of Citation (RFC) index was used to quantify the proportion of informants who cited each plant. RFC values ranged from 0.30 to 0.90 (Figure 7, Table 2). The highest RFC was observed for *J. gendarussa* (0.90), followed by *C. nutans* (0.88), *L. inermis* (0.87), and *O. sativa* (0.86). This suggests a strong degree of consensus within the community regarding the ritual importance of these species. Notably, *A. catechu* (0.84), *Citrullus lanatus* (0.79), and *Saccharum officinarum* (0.77) were also frequently mentioned, underscoring their significance in ceremonial offerings and transition rituals. The high RFC values reflect not only shared knowledge but also the continuity of these practices across generations.

Index of Cultural Significance (ICS)

The Index of Cultural Significance (ICS) offers a composite measure that includes frequency of use, diversity of use contexts, and perceived importance (Figure 8). The three species with the highest ICS, i.e., *C. nucifera*, *P. betle*, and *O. sativa*, each scored 179.5, identifying them as cultural keystone species in the Aneuk Jamee ritual system. These plants are universally incorporated across diverse rituals and are valued not only for their functional properties but also for their deep symbolic meanings. For instance, *C. nucifera* was used in cleansing, offerings, and protection; *P. betle* is central to social and communal ceremonies; and *O. sativa* is symbolic of prosperity and spiritual nourishment. Other plants with high ICS values

include *C. nutans* and *J. gendarussa* (169.5), *A. catechu* and *L. inermis* (154.5), *C. fruticosa* (143.2), and *C. longa* (120.5). These results suggest that while some plants are universally used, others hold specific ceremonial value that may be linked to particular rites or seasonal events (Table 2).

Part used

Plant parts are the main components utilized from a plant. Leaf (30.4%) is the most commonly used, followed by fruit (20.6%), flower (18.6%), stem (9.8%), seed (6.9%), all parts (4.9%), rhizome (4.9%), and tuber (3.9%) (Figure 9). This data highlights that leaves are the most commonly used part by the Aneuk Jamee Tribe due to their ease of processing in various types of rituals when compared to other plant parts (Ismail and Ahmad 2019; Helmina and Hidayah 2021; Nehru et al. 2024). Leaves are the most important plant organ and carry out vital physiological activities, such as photosynthesis, respiration, transpiration, photoreception, and the synthesis and supply of signal compounds, including growth regulators (Roth-Nebelsick and Krause 2023). Fruits represent the second most frequently used plant part after leaves. They serve as an essential source of nutrition for both humans and animals, providing carbohydrates, vitamins, antioxidants, trace elements, and dietary fiber (Liu et al. 2022). In addition, fruits are commonly incorporated into a wide variety of ritual dishes and ceremonial offerings (Suparman and Nuruahmad 2023; Yani et al. 2024).

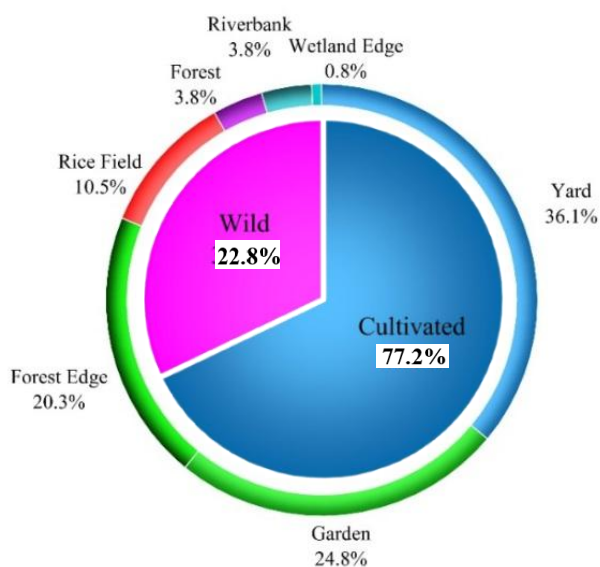


Figure 6. Cultivation status and habitats of ritual plants recorded among the Aneuk Jamee Tribe in South Aceh, Indonesia

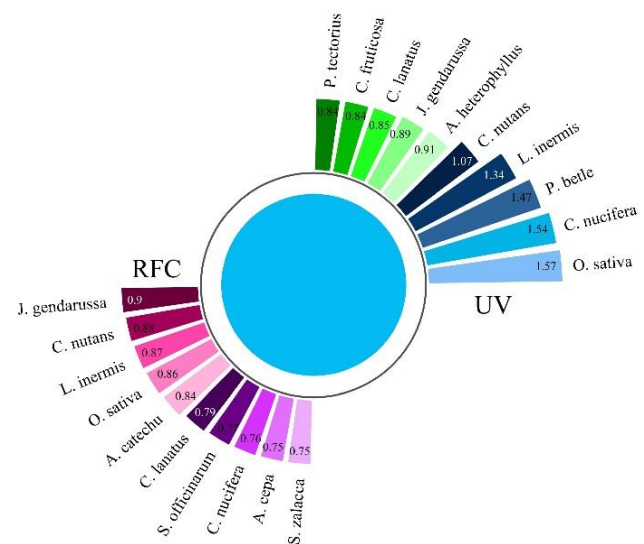


Figure 7. Use Value (UV) and Relative Frequency of Citation (RFC) of plants recorded in the Aneuk Jamee Tribe, South Aceh, Indonesia

Ritual categories and plant use patterns

The ethnobotanical survey revealed that ritual plant use is distributed across various ceremonial contexts. The highest number of plant taxa was associated with wedding ceremonies (WD) (70 taxa), followed by circumcision rituals (CC) (47 taxa), birth-related traditions (BR) (46 taxa), and mystical ceremonies (MT) (24 taxa). Fewer species were recorded for Islamic holidays (IH) (15 taxa), agricultural rites (RG) (12 taxa), and death ceremonies (DT) (4 taxa), while religious structures (RL) and buildings (BL) accounted for only 2 taxa each (Table 3; Figure 10). These results demonstrate that the most plant-diverse

rituals are centered on life transitions, such as marriage, childbirth, and coming-of-age, indicating their complexity and centrality in Aneuk Jamee cultural life. At the same time, certain species such as *J. gendarussa* and *Annona muricata* are specifically incorporated for mystical protection, reflecting localized cosmological beliefs rooted in ancestral reverence and Islamic mysticism traits less emphasized in Buddhist or animist communities of mainland Southeast Asia. This distinctive feature highlights a unique biocultural synthesis in which Islamic ecological ethics and local traditional knowledge intersect to shape ritual plant selection.

Table 3. Typology of ritual practices and associated plant use

Ritual type	Specific ritual name	Number of plant species	Key species	Cultural role
Wedding (WD)	<i>Pernikahan, mandi baluluok, tampung tawa, antek linto, rapat ninik mamak, rapat umum, pemulia jame, pambaok umah kanduri, buek teratak, antek tando</i>	70	<i>Piper betle, Oryza sativa, Cocos nucifera</i>	Prosperity, social unity
Circumcision (CC)	<i>Sunatan, tampung tawa, mandi baluluok, rapat ninik mamak, rapat umum, pemulia jame, pambaok umah kanduri, buek teratak</i>	47	<i>Clinacanthus nutans, Lawsonia inermis</i>	Rite of passage, purification
Birth (BR)	<i>Lahiran, tampung tawa, turun tanah</i>	46	<i>Curcuma longa, Capsicum annum</i>	Protection, maternal health
Death (DT)	<i>Aqiqah, basilek</i>	4	<i>Citrus hystrix, Pandanus amaryllifolius</i>	Funeral rite, farewell ritual
Agricultural (RG)	<i>Kanduri ubek padi, bukak lahan</i>	12	<i>Justicia gendarussa, Cordyline fruticosa</i>	Field blessing, pest deterrent
Islamic holidays (IH)	<i>Molod, mandi ayi yayo, antek fitrah, mak meugang, malomang</i>	15	<i>Oryza sativa, Bambusa bambos</i>	Thanksgiving, religious commemoration
Mystical (MT)	<i>Takono, tulak bala</i>	24	<i>Clinacanthus nutans, Thelypteris afra</i>	Ward off spirits, spiritual cleansing

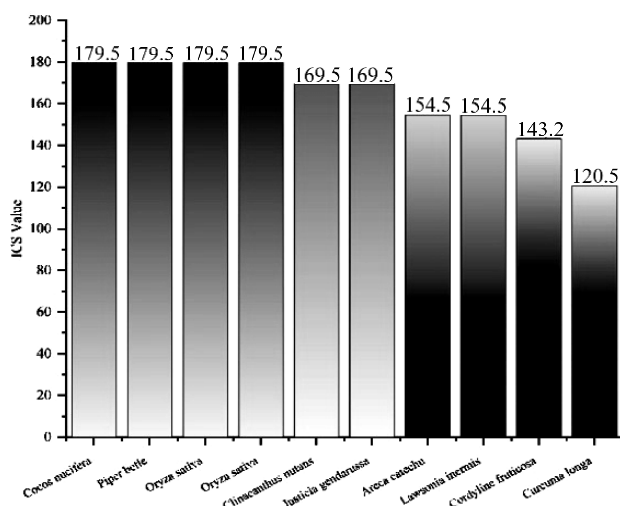


Figure 8. Index of Cultural Significance (ICS) of plants recorded in the Aneuk Jamee Tribe, South Aceh, Indonesia

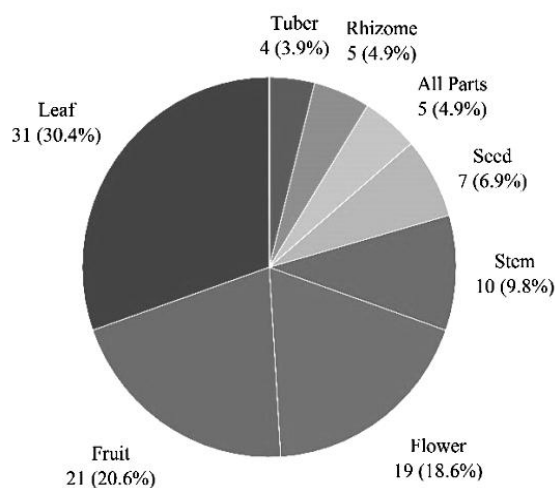


Figure 9. Part used in ritual practices among the Aneuk Jamee Community in South Aceh, Indonesia

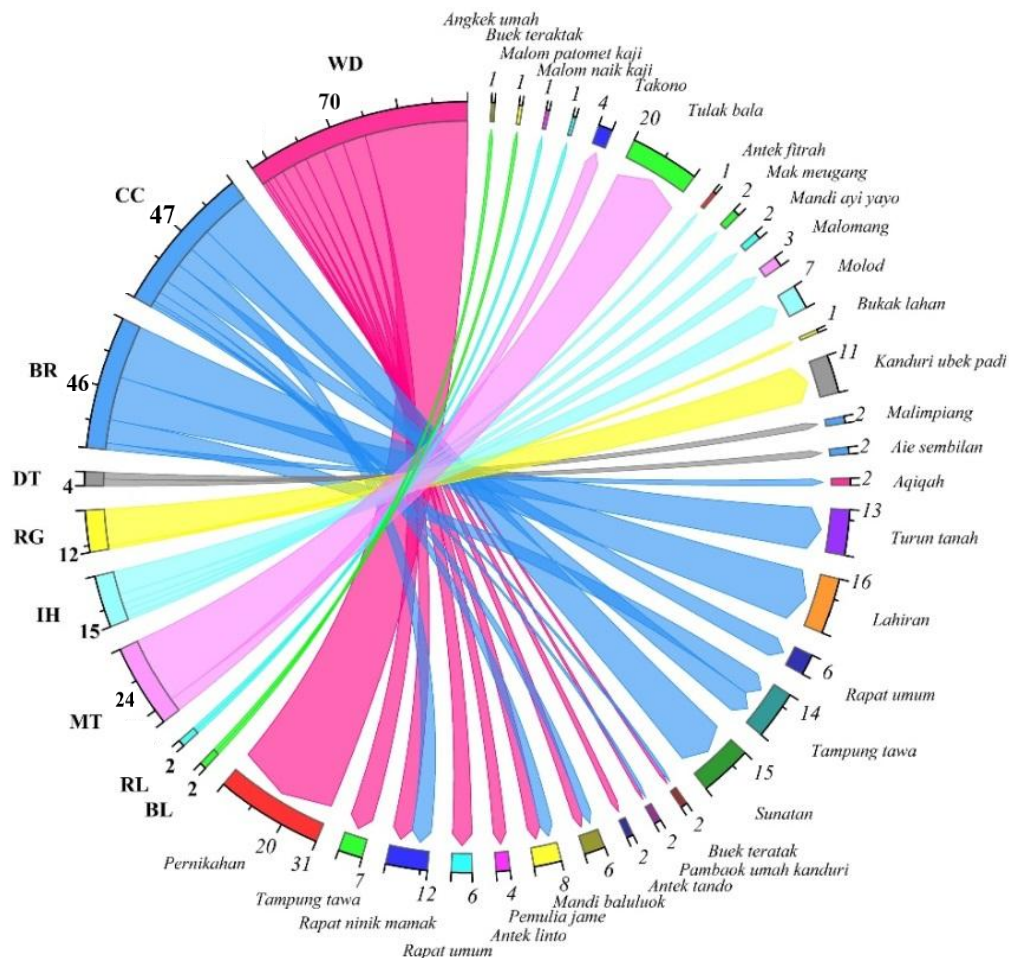


Figure 10. Plant used in the ceremonial among the Aneuk Jamee Community in South Aceh, Indonesia

Wedding ceremony

Antek tando

Antek tando is a tradition carried out by the Aneuk Jamee Tribe who want to propose to girls in order to tie a relationship that will later be married. In the *antek tando* tradition, from the male family, there must be an intermediary called Wali, and the male side must bring a betel pack as a word opener (*pemulia jamee*), which contains *P. betle*, *A. catechu*, *Uncaria gambir*, *Kaempferia galanga*, and *Citrus hystrix* (Figure 11.A). Betel nut is a symbol of respect and togetherness (Rismawati and Cahyuni 2023). It is no longer considered an actual plant, but was used as a symbol to convey meaning. Each region has its own beliefs and meanings in carrying out this tradition, and they develop their respective philosophies based on local cultural wisdom (Astuti et al. 2024). Betel nut has become a legacy passed down by the ancestors or *tete nene* ancestors to foster togetherness in unity and maintain harmony and kinship in the unity of indigenous peoples and also harmony, complementarity, and mutual improvement (Touwely et al. 2020).

Pemulia jamee

Pemulia jamee is usually a tradition to start a conversation (opening words) when someone is visiting or

when they want to propose to someone (Roslaili 2019). The groom's family (*anak linto*) usually brings betel (*P. betle*) leaves that have been prepared and decorated with areca nut (*A. catechu*) and other equipment, such as *bolai* (*K. galanga*), *gambier* (*U. gambir*), and *Citrus × aurantiifolia*, of course which, will be given to the girl's family (*anak daro*) (Nursita et al. 2020).

Rapat ninik mamak

Rapat ninik mamak is a tradition carried out by the community in the form of a large family meeting that wants to hold a feast at their home. This tradition is a form of family deliberation in order to get a solution and an overview of the *kenduri* event to be held.

Rapat umum

Rapat umum is a community tradition held in the form of a general meeting, usually organized in preparation for a communal feast (*kenduri*) at a community house. Unlike the more restricted *rapat ninik mamak*, general meetings are open to everyone, allowing broader community participation. This practice reflects the principle of mutual assistance, as attendees contribute monetary donations to ease the financial burden of the host family. Contributions are recorded and later reciprocated when other households

organize similar events, thus strengthening reciprocal social obligations. During the general meeting, food is traditionally served in the form of porridge made from mung beans (*Vigna radiata*), corn (*Z. mays*), and sweet potatoes (*Ipomoea batatas*), which is prepared in advance and distributed collectively as part of the shared labor (*gotong royong*). Such culinary traditions not only provide nourishment but also reinforce social bonds and cultural identity. Food practices function as daily affirmations of community values and symbolic expressions of rituals, traditions, and social events. Importantly, food culture is always context-specific, meaning that the traditions in one community may differ significantly from those in another (Wijaya 2019).

Buek teraktak

Buek teraktak is a tradition of making tents for families who are conducting a wedding party carried out by all young people and parents, especially men, while women prepare food in the form of yellow sticky rice (*O. s. var. glutinosa*) wrapped in banana leaves and served with black coffee. The yellow sticky rice symbolizes a noble goal and is supported by black coffee, which symbolizes the spirit of cooperation. Coffee is considered a source of stamina during the process of making party tents (Djami 2022). The tradition of drinking coffee in various activities makes it not just a drink, but a symbol of togetherness and cultural identity (Alamsyah et al. 2024).

Malom ba inai

Malom ba inai is a tradition of coloring the hands and feet of the bride and groom (*anak linto*) and the bride (*anak daro*) who are getting married, which is done in the evening before the peak event tomorrow. This event is usually carried out by girls and mothers who work together to pick and smooth henna leaves (*L. inermis*) before *malom ba inai* (Putri et al. 2017; Perrina 2022). Coloring the palms and feet of the bride has the meaning of fertility, beauty, and the bride is ready for marriage (Figure 11.R) (Sutrisno et al. 2020; Maharani and Fitri 2022).

Mandi baluluok

Mandi baluluok is a tradition of bathing with water that has been mixed with mud and flowers (*Catharanthus roseus*, *Mirabilis jalapa*, and *Bougainvillea spectabilis*), which is done before the bride and the child who wants to be circumcised wears a wedding dress (Indaty et al. 2018). This tradition has a meaning to be humbler and not forget their origin from the ground (Figure 11.B).

Balai daun jambu

Balai daun jambu is a traditional event decoration that is made when there is a marriage, which is usually placed next to the aisle or bridal throne. This *balai* is usually made from guava (*Syzygium malaccense*) leaves of which are decorated in such a way on small banana stems (*Musa acuminata* and *M. balbisiana*). This tradition has long been made with the meaning to obtain prosperity and success, like the *balai made*.

Acara puncak

Acara puncak is the culmination of the wedding, which at this peak event is considered the most sacred. Marriage is a complex form of tradition where there are many rituals that must be carried out. The wedding ceremony is usually carried out for up to seven days, starting from the general meeting to *antek linto*, namely delivering the bridegroom to the bride's house (Sutrisno et al. 2020).

Circumcision ceremony

Basunet

Basunet is a tradition carried out by the Aneuk Jamee Tribe for boys who are about to enter puberty (Sholeh and Zahiroh 2017). *Basunet* is the culmination of the *sunatan* event, which at this peak event is the most sacred which is done once in a lifetime for the child. Just as the traditional ritual process is carried out with marriage, circumcision is also carried out with a series of processes starting from the *rapat ninik mamak-rapat umum-buak teraktak-malom ba inai-basunet*. *Basunet* is a self-cleansing ritual for the child who has reached the end of puberty, who must undergo a period of circumcision to be cleansed from uncleanness (Figure 11.O) (Lestari et al. 2023; Nurlina et al. 2023).

Birth ceremony

Badapuo

Badapuo is a customary tradition carried out by mothers who have given birth to take a rest, not leave the house for 40 days, and cannot eat prohibited foods, such as oil, and itchy foods. During *badapuo*, there is a special food that is intended for mothers who are *badapuo*, namely majun, a type of food made from glutinous rice (*O. s. var. glutinosa*) which is steamed and then pounded until smooth and then added with turmeric (*C. longa*), pepper (*Piper nigrum*), and also cayenne pepper (*Capsicum annuum*). These foods aim to keep the mother's stomach warm (Zumaidar et al. 2019a, b).

Turun tanah

Turun tanah is performed when a boy has just finished childbirth, or in the local language called "*Duduk dapu*" where the child will be taken out of the house and stepped on the ground. The ritual of getting off the ground is the first moment a child sets foot on the ground (Nurfajri et al. 2016). This ritual is a symbol to introduce the child to the surrounding environment. In this first descent procession, in addition to introducing nature (land) as a place to stand. Uniquely for baby girls will be introduced to taste a little sugar on their lips and forehead as a symbol that later the child will grow up to be a sweet and beautiful child and for baby boys will be attached to rice on their foreheads as a symbol that later they will be strong in seeking sustenance and hard workers. The procession of this first descent will be carried out by religious leaders and role models in the community, where the family or parents will invite or bring the baby to the place of the pious or ulama to carry out the procession who will carry the baby from the kitchen to the door of the house (Figure 11.P) (Karimuddin 2022).

Basilek

Basilek is a series of traditions where religious leaders/community leaders who are seen to be performing martial arts or people call it “*basilek*” will carry the baby from the door of the house. After that, the child is taken outside and an old coconut (*C. nucifera*) is split right in front of the baby and the coconut that has been split into two parts will be thrown one side of the coconut from the front of the house to the back, and the other side of the coconut will be thrown from the right side to the left of the house. The symbol of throwing the coconut from the side of the house is interpreted as a way to drive away the devil and remove the bad side in the life of the future child. After that, the religious leader will perform *silat*, which will cut the banana (*Musa* sp.) which symbolizes a bland life. Followed by cutting an areca nut (*A. catechu*) tree which symbolizes a bitter life, and finally cutting a sugar cane (*S. officinarum*) which symbolizes a sweet life or glory. This tradition is carried out as a symbol of the child's life journey that will begin from that day (Figure 11.Q) (Sutrisno et al. 2020).

Aqiqah

Aqiqah is one of the sunnah *muakkadah* that is recommended to be carried out by Muslim parents as a form of gratitude to Allah for the birth of a child. The tradition involves slaughtering an animal, usually a goat, on the seventh day after the birth of the child, shaving the baby's hair, and giving the child a name (Siregar and Siregar 2024). Although *aqiqah* is not an obligation, this tradition has many benefits and wisdom behind it. The social benefit of *aqiqah* is to share happiness with others and help the poor. The spiritual benefits of *aqiqah* are to atone for sins and pray for the safety of the child (Sikumbang et al. 2024).

Death ceremony

Aie sembilan

Funerals are a series of rituals that take place from death to burial, which generally involve many people and are characterized by gathering and praying (de Grave 2018). In the Aneuk Jamee Tribe, the use of plants is often used, especially in the procession of bathing the corpse. The plants used in the form of a water mixture called “*aie sembilan*” contain various types of plants, such as *C. hystrix* and *Pandanus amaryllifolius*. Water that has been mixed with fragrances and plants will then be poured onto the corpse nine times during the procession of bathing the corpse (Sutrisno et al. 2020).

Malimpiang

Malimpiang is a tradition where *limpiang* (apam-like food) made from rice (*O. sativa*) is made for death events, such as the seventh night of the deceased. This food will be the main meal at the event, which is served with a sauce made of coconut milk (*C. nucifera*) and brown sugar (*Arenga pinnata*) (Figure 11.M).

Rice field and garden ceremony

Kanduri ubek padi

Kanduri ubek padi is a *kanduri* that is usually carried out during the season of newly planted rice fields with the aim of being more blessed so that the results are good and avoid drought, pests and animals that destroy rice plants. *Kanduri ubek padi* usually consists of several series of activities, starting from praying together to eating together. In this tradition, there are several plants that are used, including *C. nutans*, *J. gendarussa*, *Polyscias scutellaria*, *A. pinnata*, *C. fruticosa*, *Cyperus rotundus*, *Durio zibethinus*, *Bambusa bambos*, *B. vulgaris*, *Cymbopogon citratus*, and *Lagenaria siceraria*. This tradition is usually made after the community has planted rice simultaneously and is usually carried out close to irrigation and rice field irrigation sources (Figure 11.K).

Bukak lahan

Bukak lahan tradition is a *kanduri* and prayer activity carried out by people who want to open new land. This traditional activity has a meaning so that the newly opened land gets a blessing and the land opened gets fertility (Figure 11I).

Islamic holiday ceremony

Balei molod

Balei molod is a tradition of commemorating the birthday of the Prophet Muhammad SAW, which is carried out by the community as a form of love for the Prophet Muhammad SAW (Zhou 2024). This tradition is carried out in the month of the prophet's birth only which is made by the community to do the *maulid dhikr* together and will be served various types of food and fruits. At the time of the celebration, the Aneuk Jamee Tribe was very enthusiastic and usually made a “*balai*” (wooden frame) which was decorated as a place to put fruit and food, which would later be served to guests invited to the remembrance (Figure 11.T).

Antek boreh fitrah

Antek boreh fitrah is a tradition carried out at the time of Eid al-Fitr, where rice (*O. sativa*) is given as a symbol of purification of self and family. *Malomang* is a tradition that has long been carried out among the Aneuk Jamee Tribe where when they celebrate Eid al-Fitr or Eid al-Adha, the community simultaneously cooks *lemang* made of bamboo (*B. bambos*), which is filled with glutinous rice and banana leaves to welcome the feast as the main dish.

Mak meugang

Mak meugang is a tradition that has long been carried out among the Aneuk Jamee Tribe where when they want Eid al-Fitr or Eid al-Adha, the community simultaneously cooks *lemang* and gathers family before heading to the holy day of Eid al-Fitr and Eid al-Adha.



Figure 11. Ceremonial traditional documented among the Aneuk Jamee Community in South Aceh, Aceh, Indonesia: A. *Antek tando*, B. *Mandi baluluok*, C. *Pernikahan*, D. *Tampung tawa*, E. *Tampung tawa*, F. *Antek linto*, G. *Antek linto*, H. *Tampung tawa*, I. *Puluik kuniang*, J. *Malomang*, K. *Kanduri ubek padi*, L. *Bukak lahan*, M. *Malimpiang*, N. *Basunet*, O. *Basunet*, P. *Turun tanah*, Q. *Basilek*, R. *Malom ba inai*, S. *Tepak sirih*, T. *Balei molod*

Mandi ayi yayo

Mandi ayi yayo is a ritual bathing practice performed on the morning of Eid, using water infused with aromatic plants such as *C. hystrix* and *P. amaryllifolius*. This ritual is conducted before attending the Eid prayers and symbolizes renewal and purification. A traditional belief among the Aneuk Jamee holds that those who do not bathe on the morning of Eid will “grow horns,” an expression used by parents to teach children about cleanliness and personal hygiene during important religious celebrations.

A ceremony to ward off bad luck and mysticism *Tulak bala*

Tulak bala is a traditional communal ceremony practiced by the Aneuk Jamee Community to ward off misfortune and disease, with the aim of safeguarding the well-being and prosperity of all villagers. The ritual involves the collective participation of the community, who gather at a site believed to harbor negative energy or be inhabited by malevolent spirits (jinn). During the ceremony, participants recite verses from the Qur'an together as a spiritual act of purification and protection,

symbolizing the removal of harmful influences from the environment. As part of this tradition, a wide variety of plants are assembled into a single arrangement. These include *C. nutans*, *J. gendarussa*, *A. muricata*, *P. scutellaria*, *A. catechu*, *A. pinnata*, *Thelypteris afra*, *Carica papaya*, *Codiaeum variegatum*, *D. zibethinus*, *Piper sarmentosum*, *B. bambos*, *B. vulgaris*, *C. citratus*, *Morinda citrifolia*, *Selaginella doederleinii*, *K. galanga*, *P. nigrum*, *C. fruticosa*, *Z. mays*, *C. longa*, *Canna indica*, and *Combretum indicum*. Each plant contributes to the symbolic and ritualistic meaning of the ceremony, reinforcing its role as a collective act of cultural identity and spiritual resilience.

Takono

Takono is an incident where someone is sick, believed to be caused by jinn interference and this tradition is carried out as a symbol of peace between humans and jinn. The Aneuk Jamee Tribe believes that there are diseases caused by the jinn. Therefore, people who are sick due to jinn interference are made takono. In general, plants such as *Hibiscus arnottianus*, *H. rosa-sinensis*, and *O. sativa* are used, which will later be placed in locations that are considered to cause illness, usually near swamps and forests.

Conservation efforts in the sustainability of ritual plants

Ritual plant conservation efforts rely heavily on the active role of the community, including the younger generation, in conserving plants that have cultural and spiritual values. Culture certainly plays an important role in the lives of Aneuk Jamee people, especially in the use of various types of ritual plants (Samad 2015; Nurfajri et al. 2016; Geng et al. 2017). In local communities, the older generation has certainly practiced and preserved their traditional ceremonies, either directly or indirectly, and can maintain genetic resources, especially those related to the use of various plants in traditional ceremonies (Mutaqin et al. 2018).

The younger generation has an important role in preserving ritual plants by utilizing traditional knowledge that has been passed down and applying it in everyday life. Through education and counseling on the importance of ritual plant conservation, the younger generation can be taught to plant and care for these plants in their surrounding environment, such as in home gardens or other open areas. In addition, by utilizing technology and innovation, the younger generation can also develop new ways to introduce and promote ritual plants to the wider community, so as to ensure the sustainability of their utilization and conservation in the long term (Sutrisno et al. 2020). In this case, the younger generation not only acts as a successor to tradition, but also as an agent of change that brings local traditions and knowledge towards a more modern and relevant sustainability. Traditional communities and the younger generation certainly need to maintain traditional culture and social norms are very useful in natural resource conservation (Sada and Jumari 2018).

In conclusion, this study met its aim of documenting and interpreting the diversity and cultural roles of ritual

plants used by the Aneuk Jamee Community in South Aceh. The 78 recorded taxa highlight a rich biocultural tradition in which plants serve both practical and symbolic functions. The dominance of cultivated species reflects the importance of home gardens in sustaining ritual practices. Preserving this knowledge is essential for cultural continuity and biodiversity conservation. Strengthening education and community-based initiatives will be key to ensuring its transmission across generations.

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