Documentation of ritual plants used among the Aceh tribe in Peureulak, East Aceh District, Indonesia

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Abstract. Sutrisno IH, Akob B, Navia ZI, Nuraini, Suwardi AB. 2020. Documentation of ritual plants used among the Aceh tribe in Peureulak sub-district, East Aceh, Indonesia. Biodiversitas 21: 4990–4998. Traditional ceremonies as part of human cultural products at a practical level cannot be separated from the use of natural resources, mainly plants. Concerning the use of plants in traditional ceremonies, the knowledge and use of plants by the community are decreasing. This study aims to document the ritual plants used by the Aceh tribe in the East Aceh district of Indonesia. The study was conducted in Peureulak sub-districts, East Aceh district, Indonesia. A field survey was involved 125 respondents were selected using random sampling. The interview used a questionnaire including plant species, vernacular names, uses, parts use, and ritual tradition. A total of 51 ritual plant species consisting of 47 genera and 34 families was used as ritual ceremonies in the study area. Ninety-two percent were cultivated and 8% were found to be growing wild. Most of the plants used for wedding ceremonies (18 species), followed by birth ceremonies (8 species), funeral ceremonies (5 species), and pregnancy ceremony (3 species). Socio-cultural aspects can be considered as being used for the conservation of ritual plants in the East Aceh region.

Keywords: Ceremonial, East Aceh, Peureulak, peusijek, traditional knowledge

INTRODUCTION

The relationship between human beings and their environment is quite adjacent and has been going on for a long time (Hakim 2014). Human population growth associated with land-use change has had a serious impact on nature. Alteration of habitats and related biological changes has affected the existence of important plant species. Plants play a very important role in a larger number of human populations, particularly in rural communities. In the rural area, plants are the important source of food, medicine, condiment, and construction material to build houses (Navia et al. 2015; Suwardi et al. 2018; Navia et al. 2019a; Elfrida et al. 2020; Navia et al. 2020a; Navia et al. 2020b; Suwardi et al. 2020a). In addition, several plants are part of various ritual purposes (Sharma and Pegu 2011; Iskandar and Iskandar 2017), as well as a source of livelihood for the local people (Rajbhandary and Ranjitkar 2006; Navia et al. 2019b; Suwardi et al. 2020b). Plants have many cultural aspects, e.g. language, history, art, religion, politics, and social structure (Kakudidi 2004). Knowledge of the cultural significance of plants and forests can be gathered from ethnobotanical and ethnomedical studies (Suwardi et al. 2019; Navia et al. 2020a; Suwardi et al. 2020c). Conservation of natural resources is very important and effective when expertise is combined with understanding and awareness of the cultural practices of local communities (Sheybani et al. 2015; O’Neill et al. 2017). Ritual beliefs of indigenous peoples are one of the most important tools for understanding local communities and offering help to conserve nature (Geng et al. 2017). Many communities maintain their tradition across folklore and adopt ritual beliefs (Sharma and Pegu 2011), which can provide useful information and links to biodiversity conservation. Conserving biodiversity based on culture and religion is more reliable and efficient than legislation or regulation (Liu et al. 2002).

Plants in local Indonesian ethnicity have an important meaning, especially those used in different religious ceremonies (Hulyati et al. 2014; Helida et al. 2015; Anggraini et al. 2018; Ristanto et al. 2020), including in the Aceh tribe. The number of plants used in ceremonies is different and varied and often has symbols that may vary from one species to another (Putri et al. 2014). The role of one species cannot be replaced by other species in ritual ceremonies. Besides the primary purpose related to symbols, this feature is as a path of guidance, peace of mind, comfort in ritual life, so use these plant species believed can trigger disasters for local people (Koentjaraningrat 2009). Numerous plants have been used in traditional ceremonies, such as *Oryza sativa* L., *Manihot esculenta* Crantz., *Areca catechu* L., *Allium sativum* L., *Kaempferia galanga* L., *Carica papaya* L., *Cocos nucifera* L., *Curcuma longa* L., and *Arenga pinnata* Merr. (Mutaqin et al. 2018). These species have a main function related to symbolism (Supinah 2006; Iskandar and Iskandar 2017).

Technology and information developments are reported to have led to a decline in traditional knowledge of local communities in different regions (Putri et al. 2017; Navia et
al. 2020b; Suwardi et al. 2020c). The condition may also have an impact on the Acehnese tradition in Peureulak, in particular the use of various plants in ritual ceremonies, given that modernization has influenced the lifestyle of the young generation. In addition, documentation on the use of plants used in traditional ceremonies is limited, and knowledge transfer from generation to generation is mostly conducted orally (Surata et al. 2015). However, traditional knowledge of environmental management is crucial for the conservation of biodiversity (Iskandar and Iskandar 2017). This study aims to document the ritual plants used by the Aceh tribe in the East Aceh district of Indonesia.

MATERIALS AND METHODS

Study area

The study was conducted in Peureulak sub-districts (04°80’N, 97°89’E, 50 m a.s.l.), East Aceh district, Indonesia as shown in Figure 1. Peureulak sub-district has an area of 318.02 km² with a total population of 74,697 people, comprising 50.1% men and 49.9% women. These areas have a tropical humid climate with a dry season predominantly occurring from January to July while the rainy season lasts from August to December. The average temperature is around 26°C – 30°C. The topography is generally sloping and the zone is characterized by a cropping system where rice and vegetables make up the primary crops (The Central Bureau of Statistics of East Aceh District 2020).

Data collection

The study was conducted in Peureulak sub-districts, East Aceh district, Indonesia. A field survey was involved 125 respondents were selected using random sampling (Table 1). The interview was conducted face to face and each interview lasted between 30 and 60 minutes. The interview used a questionnaire including plant species, vernacular names, uses, parts use, and ritual tradition.

Plant identification is performed directly on the field. If a species of the unknown scientific name has been recognized in the survey, plant specimens have been collected, local names are recorded and identified in the Biology Laboratory of the Samudra University. Plant identification refers to identification books such as the Flora of Java (Backer and Bakhuizen van den Brink 1980), Key to the families of flowering plants of the world (Hutchinson 1967), and the Indonesian useful plants (Heyne 1987). The botanical names have been updated using The Plant List (www.theplantlist.org), Plants of the World (www.plantsoftheworldonline.org), and the International Plant Name Index (www.ipni.org).

Data analysis

The data were analyzed by determining the Cultural Significance Index (CSI) value using the technique developed by Turner (1988) with the following formula:

\[
CSI = \sum_{i=1}^{n} (q_i \times i \times e) \times \eta_i
\]

Where: CSI = Cultural Significance Index; q = quality value; i = intensity value; e = exclusivity value.

Figure 1. Map of East Aceh District, Aceh Province, Indonesia, showing the study area
RESULTS AND DISCUSSION

Floristic composition of ritual plants

The survey results revealed the Aceh tribe possessed of the traditional ritual plants. A total of 51 species consisting of 47 genera and 34 families was used as ritual ceremonies in the study area (Table 2).

Poaceae was the largest family of six species, followed by Arecales (4 species), Rosaceae, Rutaceae, and Sapindaceae (3 species each), Amaranthaceae, Myrtaceae, and Zingiberaceae (2 species each), while other families contributed as many as 1 species. Ninety-two percent were cultivated and 8% were found to be growing wild. Twenty (39%) species were found growing in the home garden, 15 (29%) species in farmland, and 13 (26%) species occurred in both the home garden and farmland, and 3 (6%) species purchased from the traditional market. The number of species recorded in this study (51 species) was comparable to the 50 ritual plant species reported in Bandung, Indonesia (Iskandar and Iskandar 2017), but lower than that in Bali, Indonesia, i.e., 125 species (Sujarwo et al. 2019) and 60 species in East Nusa Tenggara, Indonesia (Sada and Jumari 2018). However, it was higher than the 36 ritual plant species reported in the Banswara district, India (Rana et al. 2016), in Jambi, Indonesia, i.e., 32 species (Hariyadi and Ticktin 2012), in Yunnan Province, Southwest China, i.e., 32 species (Geng et al. 2017), in Nigeria, i.e. 31 species (Kadiri et al. 2014), and 21 ritual plant species reported in the Pangandaran, Indonesia (Mutaqin et al. 2018). Most of the plants used for wedding ceremonies (36%), followed by birth ceremonies (16%), funeral ceremonies (10%), pregnancy ceremony (6%), and remain plant species have multipurpose (Figure 2). The results showed that the use of fruits was more dominant than other parts of the plant (Figure 3).

According to data analysis, the Cultural Significance Index (CSI) of 51 ritual plant species ranged from 6-60. The highest CSI value was for *Oryza sativa* and *Musa paradisiaca* (60). This species is used at almost all stages of the ceremony, as well as being the main component that is very important and cannot be replaced by other species. While *Artocarpus heterophyllus*, *Averrhoa carambola*, *Carica papaya*, *Citrus lanatus*, *Citrus maxima*, *Dimocarpus longan*, *Durio zibethinus*, *Malus domestica*, *Manilkara zapota*, *Nephelium lappaceum*, *Phoenix dactylifera*, *Pogostemon cablin*, *Pyrus communis*, *Syzygium aqueum*, and *Vitis vinifera* have the lowest CSI value (6). This indicates that these species may be replaced by other species as a component of the ritual ceremony. Species with low CSI values reveal that these species meet only secondary needs with low preference levels (Mirawati 2014).

Plants in ceremonial of the Aceh tribe

The Aceh tribe has unique traditions, such as wedding, pregnancy, birth, funeral, and others, which are always preserved, and several local plants available are an important part of these rituals. The various plant species used by the Aceh tribe during traditional ceremonies are shown in Table 3.

| Parameter | Specification | Freq. | Percent. |
|-----------|---------------|-------|----------|
| Gender    | Male          | 52    | 41.6     |
|           | Female        | 73    | 58.4     |
| Age       | 15-25         | 21    | 16.8     |
|           | 26-35         | 28    | 22.4     |
|           | 36-45         | 26    | 20.8     |
|           | 46-55         | 29    | 23.2     |
|           | 56-65         | 17    | 13.6     |
|           | >65           | 4     | 3.2      |
| Education | None          | 24    | 19.2     |
|           | Elementary School | 39 | 31.2 |
|           | Yonir High School | 32 | 25.6 |
|           | Senior High School | 18 | 14.4 |
|           | University    | 12    | 9.6      |

Figure 2. Percentage of plant material for ritual ceremonies

Figure 3. Percentage of plant part used for ritual ceremonies
| Scientific name | Family | Local name | Life form | Location | Status | Part used | Ceremonies | CSI |
|----------------|--------|------------|-----------|----------|--------|-----------|------------|-----|
| Accra calamus L. | Acoraceae | Jerengo | Herb | HG | Wild | Leave | Birth | 20 |
| Aerva lanata (L.) Juss. ex Schultz | Amaranthaceae | Manek manoe | Herb | HG | Cultivated | Flowers | Wedding, birth | 40 |
| Amaranthus hybridus L. | Amaranthaceae | Bayam | Herb | HG, FL | Cultivated | Whole plants | Birth | 10 |
| Ananas comosus (L.) Merr | Bromeliaceae | Nanas | Herb | HG, FL | Cultivated | Fruits | Wedding | 8 |
| Areca catechu L. | Areaceae | Pinaung | Palm | HG, FL | Cultivated | Leaves, seeds | Wedding, birth | 40 |
| Artocarpus heterophyllus Lam. | Moraceae | Nangka | Tree | HG | Cultivated | Fruits | Birth | 6 |
| Averrhoa carambola L. | Oxalidaceae | Belimbing | Tree | HG | Cultivated | Leave | Funeral | 6 |
| Bambusa sp. | Poaceae | Bambu | Shrub | HG, FL | Wild | Stems | Birth | 8 |
| Bougainvillea spectabilis Willd. | Nyctaginaceae | Bunga kertas | Shrub | HG | Cultivated | Flowers | Wedding, funeral | 32 |
| Bryophyllum pinnatum (Lam.) Oken | Crassulaceae | Cocom bebek | Herb | HG, FL | Cultivated | Leaves | Wedding, birth | 32 |
| Cananga odorata (Lam.) Hook. f. & Thomson | Annonaceae | Kenanga | Tree | HG | Cultivated | Flowers | Birth, funeral | 40 |
| Carica papaya L. | Caricaceae | Pepaya | Tree | HG, FL | Cultivated | Flowers | Wedding | 6 |
| Citrus lanatus (Thunb.) Matsum. & Nakai | Rutaceae | Semangka | Vein | FL | Cultivated | Fruits | Wedding | 6 |
| Citrus hystrix DC. | Rutaceae | Jeruk purut | Tree | FL | Cultivated | Fruits | Wedding | 20 |
| Citrus maxima (Burm.) Merr. | Rutaceae | Jeruk bali | Tree | FL | Cultivated | Fruits | Pregnancy | 6 |
| Citrus aurantium L. | Rutaceae | Jeruk | Tree | FL | Cultivated | Fruits | Birth | 8 |
| Cocos nucifera L. | Areaceae | Kelapa | Palm | HG, FL | Cultivated | Flowers and leaves | Pregnancy, birth | 40 |
| Codiaeum variegatum (L.) Rumph. ex A.Juss. | Euphorbiaceae | Puring | Shrub | HG | Cultivated | Leaves, stems | Wedding | 8 |
| Colocasia esculenta (L.) Schott | Araceae | Keladi | Herb | HG, FL | Cultivated | Leave | Birth | 8 |
| Curcuma longa L. | Zingiberaceae | Kunjiti | Herb | HG, FL | Cultivated | Tubers | Wedding | 20 |
| Cydonon dactylon (L.) Pers. | Poaceae | Naleung samboe | Graminoid | HG | Wild | Whole plants | Wedding, birth | 40 |
| Cyrtostachys renda Blume | Areceae | Pinang merah | Palm | HG | Cultivated | Seeds | Wedding | 10 |
| Dimocarpus longan Lour. | Sapindaceae | Kelengkeng | Tree | HG | Cultivated | Fruits | Wedding | 6 |
| Durio zibethinus L. | Malvaceae | Durian | Tree | FL | Cultivated | Fruits | Pregnancy | 6 |
| Eleusine indica (L.) Gaertn. | Poaceae | Rumput beluang | Graminoid | HG | Wild | Whole plants | Wedding, birth | 40 |
| Jasminum sambac (L.) Aiton | Oleaceae | Melati | Shrub | HG | Cultivated | Flowers | Birth, funeral | 40 |
| Kaempferia galanga L. | Zingiberaceae | Cekur | Herb | HG | Cultivated | Tubers | Wedding | 20 |
| Lansium parasiticum (Osbeck) K.C.Sahni & Bennet | Sapindaceae | Duku | Tree | FL | Cultivated | Fruits | Wedding, pregnancy | 12 |
| Lawsonia inermis L. | Lythraceae | Inai | Herb | HG | Cultivated | Leaves | Wedding, birth | 40 |
| Magnolia champaca (L.) Baill. ex Pierre | Magnoliaceae | Cempaka | Tree | HG | Cultivated | Flowers | Wedding, birth | 20 |
| Malus domestica Borkh. | Rosaceae | Apel | Tree | MR | Cultivated | Fruits | Wedding | 6 |
| Mangifera indica L. | Anacardiaceae | Mangga | Tree | HG, FL | Cultivated | Fruits | Wedding, pregnancy, birth | 12 |
| Manilkara zapota (L.) P.Royen | Sapotaceae | Sowo | Tree | HG, FL | Cultivated | Fruits | Pregnancy | 6 |
| Musa paradisiaca L. | Musaceae | Pisang | Herb | FL | Cultivated | Flowers and fruits | Wedding, pregnancy, birth | 60 |
| Nephelium lappaceum L. | Sapindaceae | Rambutan | Tree | HG, FL | Cultivated | Fruits | Birth | 6 |
| Nicotiana tabacum L. | Solanaceae | Tembakau | Shrub | HG, FL | Cultivated | Leave | Wedding | 8 |
| Species                                      | Family     | Type       | Habitat | Use                      | Frequency |
|----------------------------------------------|------------|------------|---------|--------------------------|-----------|
| Oryza sativa L.                              | Poaceae    | Graminoid  | FL      | Cultivated Fruits        | 60        |
| Oryza sativa var. glutinosa                  | Poaceae    | Graminoid  | FL      | Cultivated Fruits        | 40        |
| Pandanus amaryllifolius Roxb. ex Lindl.      | Pandanaceae| Palm       | HG      | Cultivated Leave         | 20        |
| Phoenix dactylifera L.                       | Arecaceae  | Palm       | HG, FL  | Cultivated Fruits        | 6         |
| Piper betle L.                               | Piperaceae | Vine       | HG      | Cultivated Leave         | 20        |
| Pogostemon cablin (Blanco) Benth.            | Lamiaceae  | Shrub      | FL      | Cultivated Leave         | 6         |
| Pyrus communis L.                            | Rosaceae   | Tree       | MR      | Cultivated Fruits        | 6         |
| Rosa chinensis Jacq.                         | Rosaceae   | Shrub      | HG      | Cultivated Fruits        | 40        |
| Saccharum officinarum L.                     | Poaceae    | Tebu       | FL      | Cultivated Whole plants  | 40        |
| Salix tetrasperma Roxb.                      | Salicaceae | Jaleoh     | HG, FL  | Cultivated Leave         | 20        |
| Santalum album L.                            | Santalaceae| Shrub      | FL      | Cultivated Stems         | 16        |
| Syzygium aqueum (Burm.f.) Alston             | Myrtaceae  | Jambu      | Tree    | Cultivated Fruits        | 6         |
| Syzygium aromaticum (L.) Merr. & L.M.Perry   | Myrtaceae  | Cengkeh    | Tree    | Cultivated Flowers       | 8         |
| Uncaria gambir (W. Hunter) Roxb.             | Rubiaceae  | Gambir     | FL      | Cultivated Sap           | 20        |
| Vitis vinifera L.                            | Vitaceae   | Anggur     | MR      | Cultivated Fruits        | 6         |

Note: Habitat: HG: Home garden; FL: Farmland; MR: Market
Wedding ceremony

Meulakee

Meulakee is a tradition that has been passed down through generations in Peureulak when a man is proposing to a woman. Meulakee must be with the intermediary Seulangke (people who represent the family of the prospective groom) because the parents of both men and women must not come face to face in this event. Respondent state that, in Meulakee, the Seulangke incorporates various kinds of fruit, for example, S. aqueum, C. lanica, M. paradisiaca, C. papaya, Ananas comosus, M. indica, M. domestica, Lansium parasiticum, P. communis, V. Vinifera, D. longan, as souvenirs.

Kong haba

Kong haba is a tradition of engagement for the Aceh tribe with the primary purpose of declaring that a man is serious concerning marrying a woman (Rosaili 2019). Family prospective grooms (linto baro) carrying Piper betle leaf which has been prepared (ranub deng) and decorated with Areca catechu seed and other fittings, such as lime and Uncaria gambir (Yuni 2019). The A. catechu represents exaltation, while the U. gambir symbolizes courage (Rahimah et al. 2018). During the discussion, respondents argued that the P. betle is a symbol of “love,” that is, a prospective groom who gives a P. betle to a prospective bride, which means a prospective groom gives “love” to a prospective bride. They also bring souvenirs (bungong jarou) containing cloth, makeup, cake (penajoh), gold ring (jeunamae), Oryza sativa, and Curcuma longa (Yuni 2019). O. sativa symbolises hardness, while C. longa symbolizes prosperity. In Aceh, a girl is considered to have legally become a candidate for a man’s wife after being handed over to her home by the man’s family.

Meugaca

The Meugaca ceremony is a tradition of decorating certain body parts of the bride, such as the nails of the hands and the legs and the palms of the hands, with different traditional patterns using henna (Lawsonia inermis) (Putri et al. 2017). Meugaca takes place before the wedding party. Based on the interviews with respondents indicated that the use of L. inermis in the Meugaca ceremony was commonly used by the bride in Peureulak and as a symbol that the bride is ready for marriage. At the Meugaca ceremony, the L. inermis leaves will be placed on a large plate and then crushed and placed on the finger of the prospective bride (Putri et al. 2017). This activity is carried out for three nights.

Meukeureuja

Meukeureuja is a wedding reception performed by the Aceh tribe, as is commonly practiced by other tribes in Indonesia. In this procession, the tribe of Aceh will perform the ceremony of the Peusejuk Dara Baro. Peusijuek is among the traditions of the Aceh tribe that has been going on for generations. Peusijuek as a symbol of praying for safety, peace, and happiness in daily life (Riezal et al. 2018). Peusijuek is an acculturation of the culture of Acehnese with Islam. According to the historical record, Peusijuek is a form of Hindu cultural heritage in Aceh, however, several parts that have been changed in Peusijuek Aceh, for example, certain prayers or mantras previously used in the Peusijuek procession have been replaced by prayers in Islam (Riezal et al. 2018). This tradition is often performed in all traditional and cultural activities of Aceh, such as weddings, and other traditional ceremonies (Ismail 2003).

Table 3. Plant species used in traditional ceremonies

| Categories | Ceremonial | Species |
|------------|------------|---------|
| Wedding    | Meulakee   | Syzygium aqueum, Citrus lanatus, Musa paradisiaca, Carica papaya, Ananas comosus, Mangifera indica, Malus domestica, Lansium parasiticum, Pyrus communis, Vitis vinifera, Dimocarpus longan |
| Kong haba  | Meugaca    | Piper betle, Areca catechu, Uncaria gambir, Oryza sativa, Curcuma longa |
| Peusejuk Dara Baro | Meugaca | Cydonia dactylon, Bryophyllum pinnatum, Aerva lanata, Areca catechu, Eleusine indica, Lawsonia inermis |
| Pregnancy  | Ba Boh Kayee | Manilkara zapota, Durio zibethinus, Lansium parasiticum, Mangifera indica, Citrus maxima, Saccharum officinarum, Cocos nucifera |
| Birth      | Me Bu      | Oryza sativa, Musa paradisiaca, Oryza sativa var glutinosa |
| Birth      | Koh Pasat  | Bambusa sp, Piper betle, Areca catechu, Uncaria gambir, Acorus calamus, Kaempferia galanga |
| Peusiccap  | Cuko Òk    | Oryza sativa var glutinosa, Oryza sativa, Cocos nucifera |
| Peutron Aneuk | Meugaca | Aerva lanata, Areca catechu, Bryophyllum pinnatum, Cocos nucifera, Cydonia dactylon, Eleusine indica, Lawsonia inermis, Musa paradisiaca, Saccharum officinarum |
| Funeral    | Funeral ritual | Citrus hystrix, Magnolia champaca, Cananga odorata, Jasminum sambac, Rosa chinensis, Bougainvillea spectabilis, Pandanus amaryllifolius, Averrhoa carabola |
Aceh tribe has been using various plants in traditional ceremonies, including peusiak Dara Baro. During the discussion, the respondent stated that there were 5 (five) main species used in the Peusiak procession, including Cynodon dactylon, Bryophyllum pinnatum, Aerva lanata, A. catechu, Eleusine indica, and L. inermis. C. dactylon is believed to be a symbol of solidity and ethics, both in religious and social life, because of these plants that are strong and difficult to uplift. B. pinnatum leaves are used as a symbol of the coolness of the heart, both in happiness and pain. A. lanata has white flowers spread across branches (like beads) that symbolize prosperity and well-being.

**Pregnancy ceremony**

**Ba Boh Kayee**

Boh Kayee is a tradition of Mak Tuan (mother-in-law) visiting Dara Baro (daughter-in-law) who is 3 months pregnant. The in-laws were accompanied by several women who were close relatives. During the visit, they brought various fruits as souvenirs such as Manilkara zapota, Durio zibethinus, L. parasiticum, M. indica, Citrus paradisiaca, Saccharum officinarum, and Cocos nucifera (Samad 2015). At the age of 3 months of pregnancy, women usually like fruit that tastes sour. (Samad 2015). At the age of 3 months pregnant, women who were close relatives of bathing the corpse in the form of a procession. After that, the child is taken out of the house to the woman who gave birth (Sufi 2002). The peucicap is carried out by Tengku (people with a high level of religious knowledge), admired and of good character, hoping that the child will become pious and have good morals in the future.

**Me Bu**

The Me Bu ceremony is a tradition of Mak Tuan (mother-in-law) visiting Dara Baro (daughter-in-law) who is 7-8 months pregnant and bringing Bu Kalah (Samad 2015). Bu Kalah is rice (O. sativa) wrapped in M. paradisiaca leaves, shaped like a pyramid (Hoesin 1970). Other than Bu Kalah, her husband also brought a meal, glutinous rice (Oryza sativa var glutinosa), and cakes that had been put in a tray (Sufi 2002). According to the respondents, the Me Bu ceremony aims to ensure that Dara Baro receives adequate nutrition and motivates her to face childbirth.

**Birth ceremony**

**Koh Pusat**

Koh Pusat is a traditional ritual of cutting a newborn's placenta (Samad 2015). Traditionally, the placenta is cut using a bamboo knife (Bambusa sp) (Fuadi 2015). The water consisting of a mixture of chewed P. betle, charcoal, and C. longa is then placed on the baby's navel. This method is intended to make the remaining placenta dry quickly and separated from the baby's navel. During the discussion, the respondent states that C. longa, which is yellow, is a symbol of glory. Then the baby is bathed in warm water, then sprayed with P. betle water mixed with A. catechu, lime, U. gambir, Acorus calamus, and Kaempferia galanga. This procession is believed to provide strength and avoid interference from the devil, and to be a substitute for the powder to prevent colds (Samad 2015).

**Peucicap**

The Peucicap ritual is a procession to introduce the taste of food to the baby. Respondents state that the materials used in this ceremony were honey bees, M. zapota, M. indica, Nepheleum lappaceum, M. paradisiaca, Artocarpus heterophyllus, and S. officinarum. These fruits are squeezed to drink water, then rubbed with honey on the baby's lips. In addition, Amaranthus hybridus is often added to the water. All these materials were prepared by the woman who gave birth (Sufi 2002). The peucicap is carried out by Tengku (people with a high level of religious knowledge), admired and of good character, hoping that the child will become pious and have good morals in the future.

**Cuko Ōk**

The cuko ōk is a ritual to shave off the hair of a baby after 1 month of age. This ritual is not usually accompanied by a celebration. Sometimes only two or three neighbors are invited to celebrate this event. Base on the interview, the respondent state that the materials required for this ritual were O. sativa var glutinosa, O. sativa, C. nucifera, and chicken. C. nucifera fruit was carved into their shape. These materials are prepared by the child's father or grandma. The shaved hair was put in the C. nucifera fruit and then buried in the back of the house near the M. paradisiaca plant. According to the respondents, this activity is a symbol for the child to be able to face all problems patiently in the future.

**Peutron Aneuk**

The peutron aneuk ritual is the first time a child has stepped on the ground (Nurfajri et al. 2016). This ritual is a symbol to introduce children to the environment. The peutron aneuk begins with a peusiak procession led by the Tengku. C. dactylon, B. pinnatum, A. lanata, A. catechu, E. indica, and L. inermis have been used in this procession. After that, the child is taken out of the house to perform the plah boh u procession. During the procession, the child is held by male Teungku (for the male child) or female Teungku (for the female child). Moreover, when the Teungku held the baby, the person standing near the Teungku, split the fruit of the C. nucifera over the head of the child as a symbol for a brave child. The respondents state that especially for male babies, the stems of M. paradisiaca and S. officinarum have also been cut as a symbol for babies who are expected to be brave enough to fight backward.

**Funeral ceremonies**

The funeral is a series of rituals that take place from death to burial, generally involving more people and having a characteristic of gathering and praying (Aaufa and Phill 2017). In East Aceh, the use of plants is commonly used, particularly in the procession of bathing the corpse. In East Aceh, plants are commonly used in the procession of bathing the corpse in the form of a water concoction called Air Sembilan. According to the respondents, Air Sembilan is a water concoction containing various plant
species such as *Citrus hystrix*, *Magnolia champaca*, *Cananga odorata*, *Jasminum sambac*, *Rosa chinensis*, *Bougainvillea spectabilis*, *Salix tetrasperma*, *Santalum album*, and *Pandanus amaryllifolius*. *Air Sembilan* splashed nine times on the body during the procession of the bathing corpse. After the procession of the bathing corpse is completed, the body corpse is given a shroud. The shroud is made up of clothes, pants, and waistcloth, then three pillows filled with *Averrhoa carambola* leaves are added. The pillow is placed on the head, the waist, and the knees of the corpse. The pillow is used as a holder so that the corpse does not shake or turn around. After the corpse has finished being wrapped in a shroud, the corpse is then placed in a *keurundu* and covered with a long batik cloth, and then taken to the *Meunasah* or Mosque for prayer. After being prayed, the corpse was taken to the burial site for burial.

**Transfer traditional knowledge among the Aceh tribe**

Culture plays a critical role in rural tribal livelihood, especially for the use of various ritual plants (Samad 2015; Nurfajri et al. 2016; Geng et al. 2017). The ritual ceremony for the use of various plant species in Peureulak has been passed down from generation to generation. The results showed that 68% of respondents were aware of the use of plants in traditional ceremonies. The intensity of use and knowledge of the plants was reported to be a function of a characteristic of the used plants and people way of life in terms of their social, cultural, religious, and economical domains (Shrestha and Dhillion 2006; Pardo-deSantayana et al. 2007; Suresh et al. 2014; Navia et al. 2020b).

However, this study found a tendency to decrease traditional knowledge in the use of ritual plants. The percentage of species identified by each age group of the respondent ranged from 8% (15–25 years of age) to 100% (> 65 years of age). During the discussion, the respondents stated that, in the *Meugaca* procession, most of the younger generation preferred modern motifs, such as those originating in India, North America, or Arabia, compared to Acehnese motifs. In addition, instant hena, which is widely produced and sold, has reduced the use of plants (*L. inermis*) as a material in the *Meugaca* procession. The study is consistent with that reported by Sada and Jumari (2018) in the province of East Nusa Tenggara. The gathering of plant species is performed in accordance with appropriate customary procedures so that the essence of their sacred values is not lost.

Local communities that practice and preserve their traditional ceremonies, either directly or indirectly, can maintain genetic resources, particularly related to the use of various plants in traditional ceremonies (Mutaiqin et al. 2018). The Aceh tribe in Peureulak cultivating various ritual plants in their home garden, farmland, or on the side of the roads around the village, in order to maintain the availability of ritual materials and the effort of ritual plant conservation. In addition, this plant is also multipurpose, besides being used in traditional ceremonies as well as food, spices, medicines, building materials, handicrafts, animal feed, and other necessities. For example, besides being used for wedding ceremonies, *K. galanga* is also used as a spice. In addition, *C. esculenta* and *A. hybridus* are used as vegetables. As a result, the community cultivates plant species around their home garden or farmland. However, several plant species, such as *C. dactylon*, grow naturally along the village roads. Cultivating various plants with multiple purposes, either consciously or unconsciously, can preserve the existence of these plants in nature. Comparable studies suggest that indigenous peoples are making effective contributions to the conservation of natural resources using their indigenous knowledge (Anthwal et al. 2006; Gandile et al. 2017).

Traditional communities that already maintain traditional culture and social norms are very useful in the conservation of natural resources (Sada and Jumari 2018). Most indigenous people have been consciously or unconsciously controlling most of the natural resources through their traditions, with a strong ethic of conservation (Advice 2009). Ceremonies based on traditional knowledge and belief and in the terms of cultural biodiversity have been strongly practiced by the Aceh tribe. This can be indicated that a variety of ritual plant species would be conserved since these species were necessary for the performance of rituals. In essence, socio-cultural aspects must be considered as being used for the conservation of ritual plants in the East Aceh region.

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