

## UTILIZATION AND CONSERVATION OF *Nepenthes ampullaria* Jack IN THE TRADITION OF KENDURI SKO COMMUNITY OF KERINCI, JAMBI

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### ABSTRACT

It is common for ethnic Malay in Indonesia and Malaysia to use *Nepenthes ampullaria* as food containers. However, the use of *Nepenthes* as part of a cultural tradition has been found only in Kerinci Regency, Jambi. This study explores the local wisdom in utilizing and maintaining the presence of *N. ampullaria* in Kerinci. Data collection through open-ended and deep interviews through participatory observation methods. Data analysis and presentation are delivered descriptively. Lemang is a compulsory item to be served in traditional ceremonies of kenduri sko. There are two types of lemang in Kerinci, lemang bamboo and lemang kancang beruk. The latter is found only during the kenduri sko tradition in Kecamatan Gunung Raya and Bukit Kerman. Therefore, the existence of lemang kancang beruk in these two sub-districts has become obligatory and has no other comparable substitute. In Gunung Raya and Bukit Kerman, the Kenduri sko is held four times a year. The need for *N. ampullaria* for kenduri sko in these two sub-districts is enormous. For the event, each household needs at least 500 to 2000 pitchers of *N. ampullaria*. The people of Kerinci harvest *N. ampullaria* directly from the wild to fulfill the need. The population of *N. ampullaria* that still survives in its natural habitat is evidence of the success of the local community in maintaining the existence of *N. ampullaria* in Kerinci. Method and schedule arrangements can allow the population of *N. ampullaria* to recover.

Key words: *Nepenthes*, Kenduri sko, Lemang kancang beruk

### INTRODUCTION

The use of plants in traditional rituals is the hallmark of most surviving traditional ethnic groups (Rana *et al.* 2016). Part of local beliefs and wisdom that survives as a form of respect for ancestors. The value of traditional knowledge describes the use of plant species for the community. It describes the community's dependence on a plant species' economic value and other traditional use values (Teka *et al.* 2020). People's perceptions and interactions with plants and the environment occur in different patterns, resulting in the uniqueness of a culture (Schaal 2018). Cultural diversity and biodiversity are interrelated and hold the key to ensuring resilience in both social and ecological systems (Halmy 2017).

Culturally based biodiversity conservation is often more effective and sustainable than based solely on government laws and regulations (Liu *et al.* 2002). Culture results from a long-term understanding of a belief passed down from generation to generation (Negi 2010). Cultural traditions and beliefs of indigenous peoples are an essential part of understanding the wisdom of traditional communities in plants for the traditional rituals (Geng *et al.* 2017). Traditional ecological knowledge developed by indigenous peoples plays a vital role in maintaining cultural identity and

sustainable natural resource management at the site level (Maroyi 2017).

The Kenduri Sko tradition is the most significant traditional event for the Kerinci community. It is a routine activity for people who have a history of elders from depati ninik Mamak and heirlooms from their ancestors (Nasution 2017). One of the traditional food requirements in implementing the kenduri sko is lemang. Lemang is a traditional food made from glutinous rice and coconut milk in a container of bamboo Talang (*Schizostachyum brachycladum*). In addition to using bamboo containers, the people of Kerinci also use the pitcher of *N. ampullaria* (kancang beruk) as a container for cooking lemang. Lemang kancang beruk is a characteristic of implementing kenduri sko in the lower reaches of the Kerinci Regency (Helida *et al.* 2016).

The use of *N. ampullaria* as part of the cultural tradition in Kerinci Regency has been going on throughout the history of implementing kenduri sko. To meet the needs of *N. ampullaria*, the people of Kerinci harvest *Nepenthes* directly from the wild. This study aims to explore the local wisdom in utilizing and maintaining the presence of *N. ampullaria* in Kerinci so that the community still gets the value of the benefits of this plant in implementing the kenduri sko tradition they have been doing for generations.

## RESEARCH METHOD

This research was carried out from July to August 2019 and January to February 2020 in sixteen sub-districts in Kerinci Regency, Jambi Province (01°41' - 02°26'N, 101°08' - 101°50'E Altitude, 100 – 3805 asl.). This area has a humid tropical climate with a yearly dry season of 1-3 months. The average rainfall ranges from 150.6 – 171.1 mm per year, with an average temperature of around 21.6° – 24.9° Celsius. The topography of this area consists of hills, active volcanoes, and valleys with various sizes of lakes (BPS Kabupaten Kerinci 2019). Tools for collecting data in the study included: stationery, question guide, GPS Garmin 76CSx map, voice recorder, camera, and laptop.

The assessment of socio-cultural aspects and the utilization of *Nepenthes ampullaria* in Kerinci Regency used a descriptive qualitative method through the ethnobotanical approach of Martin (1995) and Hamilton (2013). Data collection using participatory observation methods through free interviews (open-ended) and in-depth interviews with key informants. Key informants consist of traditional leaders, community leaders, elders, and community members who are worthy and able to provide accurate information. Determination of informants using a snowball sampling technique. Table 1 shows the demographic characteristics of the 128 informants involved in this study. Data analysis and research results are presented in descriptive narrative form (Irawan 2006; Neuman, 2014). Research data analysis and presentation in descriptive narratives (Irawan 2006; Neuman, 2014). Other supporting data extracts from publications in books, reports, or journals.

## RESULT AND DISCUSSION

1. *Bioecology of Nepenthes ampullaria*

*Nepenthes ampullaria* is a carnivorous pitcher plant from the family Nepentheaceae. Identifying *N. ampullaria* in the field is relatively easy because it has a unique morphological appearance. Pitchers of *N. ampullaria* are urn-shaped and grow abundantly around the stem base. Most pitchers of *N. ampullaria* grow in clusters of 3-7 pitchers at the stem nodes. These clusters grow uniformly along the trunk and on adventitious branches originating from the central rootstock (Clarke 2001). This growth habit of *N. ampullaria* usually produces a large number of pitchers. Pitchers also appeared on the mid-stem and climbing stem (Figure 1).

The morphological characteristics of *Nepenthes ampullaria* describe as follows. **Stems:** cylindrical on the rosette, erect, or climbing. **Leaves:** thick coriaceous, oblong-lanceolate 19-19,5 x 4.3-4.7 cm, gradually attenuate to the amplexicaul base. Petioles either short or absent. Longitudinal veins 3-5 on each side of the midrib. Tendrils 15 cm long. **Rosette pouch and lower pitcher:** urceolate, with two broad wings and long fringe element, running from top to bottom, 0.8-1.0 cm. Mouth round or ovate, and horizontal throughout. Peristome thin and expanding to the inside of the pitcher. Lid linear-elliptical, no appendages, reflexed greater than 90° away from the mouth. Spur unbranched. **Upper pitcher:** rarely produced, infundibular throughout, wings reduced to ribs. All other parts similar to those of lower pitchers. **Inflorescence:** a dense panicle. **Indumentum:** All parts of plants are densely covered with short caducous brown hair when young (Hernawati and Akhriadi 2006).

Table 1. Demographic characteristics of key informants.

Demographic characteristic		Numbers	Percentage (%)
Age	20 – 40	28	21.9
	41 – 60	55	43.0
	61 – 80	41	32.0
	>80	4	3.1
Gender	Male	60	46.9
	Female	68	53.1
Educational level	No school	10	7.8
	Elementary school	33	25.8
	Junior high school	30	23.4
	Senior high school	37	28.9
	University	18	14.1
Profession	Farmers	76	59.4
	Craftsman	3	2.3
	Traditional healers	7	5.5
	Merchant	23	18.0
	Public employee	19	14.8

The main geographical distribution of *N. ampullaria* is in the tropics, starting from Thailand, Peninsular Malaysia, Singapore, Sumatra, Borneo, Maluku, Papua, and Papua New Guinea (Cheek dan Jebb 2001). The primary habitat of this species is freshwater swamps and peat swamps. *N. ampullaria* grows well at an altitude of 0 - 300 m. However, some reports state that *N. ampullaria* is growing at an altitude of 2,100 m above sea level (Clarke 2018). In Kerinci District, *N. ampullaria* (commonly referred to as kancang beruk by the local community) only grows around swamps and small lakes in Kecamatan Gunung Raya and Bukit Kerman (Hernawati 2004)

**2. Utilization of Plants in the Kenduri Sko Tradition**

Plants are an essential part of every traditional ritual in the kenduri sko tradition (Suswita *et al.* 2013). The results of interviews and observations in the field show that the people of Kerinci use at least 113 plant species to implement Kenduri sko.

**a. The Existence of Lemang in the Kenduri Sko Tradition**

Lemang is a mandatory food and is one of the requirements in implementing the kenduri sko tradition. Lemang is part of the sajin (offerings) during the malimau pusako ritual and is the main dessert at a banquet celebrating the coronation of depati ninik Mamak (Sunliyensar 2016; Syaputra 2019). Lemang also serves as a gift for guests attending the coronation ceremony. Table 2 shows the species of plants used in making lemang in the Kerinci District.

In Kerinci District, there are two kinds of lemang. First lemang bamboo, second lemang kancang beruk. Lemang kancang beruk has a unique appearance and is very different from lemang Bambu (Figure 2). Lemang kancang beruk is only found in the kenduri sko tradition in Kecamatan Gunung Raya and Bukit Kerman. According to the indigenous people of Gunung Raya and Bukit Kerman, lemang kancang beruk has existed throughout the history of implementing the kenduri sko

tradition in this region and has become a hereditary inheritance. For the people in the two sub-districts, the implementation of the kenduri sko is identical to the availability of lemang kancang beruk.

**b. Needs of *Nepenthes ampullaria* in the Kenduri Sko Tradition**

Sub-district Gunung Raya and Bukit Kerman comprise 26 villages grouped into eleven sko kenduri groups. There are three groups in Gunung Raya and eight in Bukit Kerman (Table 3). Of the eleven groups, only eight served lemang kancang beruk as a dish at the kenduri sko (three groups in Gunung Raya and five groups in Bukit Kerman). In Gunung Raya, there is only one kenduri sko in a year (kenduri sko is arranged every three years for each group). On the other hand, the people of Bukit Kerman hold kenduri sko three times a year. Once in Talang Kemuning-Bintang Marak Village (group IV), once in Pondok-Muak Village (group V) and once in Lolo area. There are three kenduri sko in the Lolo Community, and each group has the opportunity to hold a sko kenduri every three years. The need for *N. ampullaria* for the kenduri sko tradition depends on the frequency of kenduri implementation, the number of households (KK) in the implementing group, and the amount of glutinous rice to make lemang. Each household in Gunung Raya and Bukit Kerman spends 5 to 20 liters of glutinous rice to make lemang kancang beruk. 5 to 20 liters of glutinous rice requires 500 – 2000 pitchers of *N. ampullaria*. The formula to calculate the need for *N. ampullaria* to implement one kenduri sko in the two sub-districts is Total need for *N. ampullaria* = (Σ HH) x (Σ Liter of glutinous rice). Assuming 5 liters of glutinous rice requires 500 pitchers of *N. ampullaria*. For one sko kenduri implementation with 929 households, the minimum requires (929) x (500) = 464.500 pitchers, and the maximum requires (929) x (2000) = 1,858,000 pitchers of *N. ampullaria* (Figure 3).



Figure 1. *Nepenthes ampullaria* Jack in Payo Aia Mati, Kerinci.

Table 2. Plants species for making lemagng in Kerinci District.

Scientific name	Family	Vernacular name	Part of the plant used
<i>Oryza sativa</i> var. <i>glutinosa</i>	Poaceae	Sipuluik	Fruit
<i>Cocos nucifera</i>	Areaceae	Kelapa	Fruit
<i>Schizostachyum brachycladum</i>	Poaceae	Bambu telang	Stem
<i>Musa acuminata</i> X <i>M. balbisiana</i>	Musaceae	Pisang tembatu	Leaf
<i>Nepenthes ampullaria</i>	Nepenthaceae	Kancung beruk	Pitchers

Table 3. Kenduri sko groups in Sub-districts of Gunung Raya and Bukit Kerman

Kenduri Sko Group	Sub-district Gunung Raya		Sub-district Bukit Kerman	
	Village	Household*	Village	Household*
Group I	Selampaung	230	Pasar Kerman	137
	Masgo	250	Lolo Gedang	300
	Perikan Tengah	189		
	Sungai Hangat	260		
Group II	Air Mumu	197	Lolo Kecil	364
	Kebun Baru	243	Tanjung Syam	148
	Kebun Lima	92		
Group III	Lempur Mudik	174	Lolo Hilir	282
	Manjuntto Lempur	102	Muaro Lolo	177
	Lempur Hilir	112		
	Dusun Baru Lempur	237		
Group IV	Lempur Tengah	458		
Group V			Talang Kemuning	261
			Bintang Marak	206
Group VI			Pondok	202
			Muak	203
Group VII			Pengasi Lama	289
			Pengasi Baru	205
Group VIII			Pulau Pandan	246
			Karang Pandan	226
			Pulau Sangkar	198

\*Source: BPS Kerici 2019



Figure 2. Lemang a) display of lemagng kancung beruk; b) lemagng bamboo and lemagng kancung beruk in the kenduri sko tradition.

In one kenduri sko, the people of Kerinci spend an average of 10 liters of glutinous rice to make lemagng kancung beruk. Figure 3 shows the need for an *N. ampullaria* pitcher for one period of kenduri sko. Based on the average value of using 10 liters of glutinous rice for one period of kenduri sko (Selampaung (I), Pasar Kerman (I), Talang Kemuning (IV), Pondok (V), then

the estimated total need for *N. ampullaria* pitchers in these two sub-districts in one year is  $(929,000 + 437,000 + 467,000 + 405,000 = 2,238,000)$ . A huge number for a group of plants from the family Nepenthaceae.

**c. Harvesting of *Nepenthes ampullaria* for The Kenduri Sko Tradition**

The community in Gunung Raya Sub-district harvests *N. ampullaria* once a year, following the frequency of implementing the sko kenduri tradition in this area. Harvesters were located in three natural habitats of *N. ampullaria*: Danau Lingkat, Payo Aia Mati, and Tabek Jambi. In Bukit Kerman, the community harvests *N. ampullaria* annually, but each group harvests *N. ampullaria* in different locations. The people of Talang Kemuning and Bintang Marak harvest *N. ampullaria* in Rawa Sikijang. The Lolo and Pondok-Muak communities harvest *Nepenthes* in Rawa Aia Malintang and Danau Padang.

The community shares work to harvest *N. ampullaria* directly from its natural habitat. Some people who do not have time ask for help from others. The fee for collecting 500 pitchers of *N. ampullaria* is fifty thousand rupiahs (Majid J 15 January 2020, personal communication). According to locals, there is no practice buying and selling *Nepenthes* in the kenduri sko. Kenduri sko is a traditional communal event in which the overall cost of implementation is the responsibility of all households in each group of kenduri sko (Helida dan Abubakar 2018).

**3. Estimated Habitat Area of *Nepenthes ampullaria* in Kerinci District**

Table 4 shows that the most extensive *N. ampullaria* habitat in Kerinci is Payo Aia Mati. Payo Aia Mati is part of the Lingkat freshwater swamp area, which has an area of approximately 384 hectares (Pemda Kabupaten Kerinci 2012). Estimated habitat area of *N. ampullaria* in Payo Aia Mati  $\pm 25$  Ha. The condition of Payo Aia Mati is still natural, with dense woody vegetation. Few people have access to the swamp because the condition of the muddy swamp is quite profound. The second most extensive habitat is the Rawa Sikijang, with an area of  $\pm 50$  Ha. Based on research data by Akhriadi (2007), the habitat of *N. ampullaria* in the Rawa Sikijang covers an area of  $\pm 10$  Ha. The area of Tabek Jambi is  $\pm 10$ , and the estimated habitat area of *N. ampullaria* in the swamp area is  $\pm 3$  Ha. The local community uses the Tabek Jambi for buffalo grazing. The area of Danau Lingkat is  $\pm 7.5$  Ha. *N. ampullaria* in Danau Lingkat is located on the north side with an estimated 0.5 Ha. Danau Padang and the adjacent swamp is  $\pm 30$  Ha, the estimated habitat of *N. ampullaria* in this area is  $\pm 5$  Ha. Rawa Aia Malintang is the smallest area of  $\pm 5$  ha, and rice fields surround this site. The population of *N. ampullaria* spread throughout the swamp.

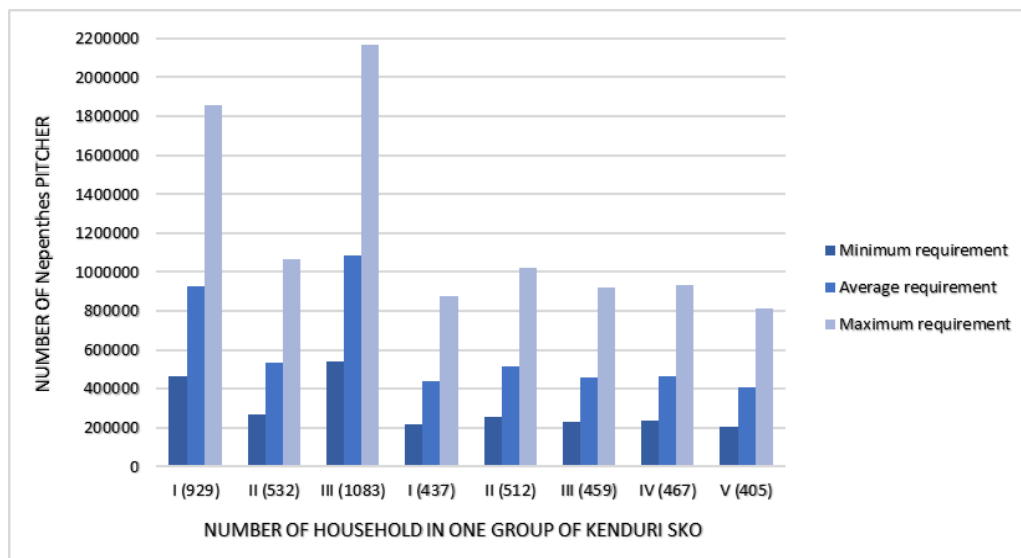


Figure 3. The estimated need for *N. ampullaria* pitcher at each kenduri sko in Kecamatan Gunung Raya and Bukit Kerman

Table 4. Estimated area of the habitat of *N. ampullaria* in Kerinci District.

Habitat of <i>N. ampullaria</i>	Nearest access	Estimated Area (Ha)	Estimated Area (Ha)*
Danau Lingkat	Lempur Mudik	7.5	0.5
Payo Aia Mati	Lempur Hilir	384**	25
Tabek Jambi	Lempur Hilir	10	3
Rawa Sikijang	Talang Kemuning	50	10(-7)
Rawa Aia Malintang	Muaro Lolo	5	5
Danau Padang	Lolo Gedang	30	5

\*Survey 2020

\*\*Pemda Kerinci 2012

#### 4. Kenduri Sko and Conservation of *Nepenthes ampullaria* in Kerinci

The utilization of *N. ampullaria* manifests the local community's traditional knowledge about the value of *N. ampullaria* for human life. Communities with pure cultural traditions know about using natural resources and are directly involved in collecting and using plants in cultural rituals (Anderson 2004). In Kerinci District, *N. ampullaria* grows in swamps and the edges of small lakes at an altitude of 960 – 1168 m above sea level. This habitat is outside the optimal range for *N. ampullaria*, which usually grows at an altitude of 0-300 m above sea level. Furthermore, the Kerinci area is not an optimal habitat for *N. ampullaria* because most of the area of the Kerinci District is hilly and active mountains with an average altitude above 1500 m above sea level. Therefore, species abundance outside the optimal habitat is lower than in the main geographic distribution area (Gerst et al. 2011).

The existence of lemong kancang buruk as a traditional dish in the sko kenduri tradition can positively or negatively impact the population of *N. ampullaria* in Kerinci. Positive impact because *N. ampullaria* has benefits for the community. The value of the benefits indirectly increases public awareness of protecting *N. ampullaria*. On the other hand, repeated harvesting of *N. ampullaria* for kenduri sko in large quantities four times a year can reduce the population. According to Liberty et al. (2013), large-scale consumption and exploitation of plants are detrimental to plant species' existence and sustainability.

The traditional knowledge of the Kerinci people passed down from generation to generation enables the community to recognize the morphological characters to distinguish *N. ampullaria* from other *Nepenthes* species in Kerinci. They knew the habits and habitats where it grows so that it could determine when and where to harvest *N. ampullaria* to meet the needs of the sko kenduri tradition. Traditional communities have adequate knowledge about their plants, becoming an essential reference for conservation and sustainable plant use (Upriyati et al. 2012). Traditional knowledge determines the importance of plants in cultivation and provides practical methods to prevent overexploitation of plants by regulating their use and protection (Kathambi et al. 2020).

The critical value of *N. ampullaria* in the cultural tradition of the Kerinci community resulted in a mutual agreement to maintain the existence of *N. ampullaria* for the benefit of traditional rituals (Susanti et al. 2019). The realization of the indigenous people of Kerinci's agreement is through the following actions: a) maintaining and not changing the natural habitat of Akhriadi P. 2007. Kajian taksonomi hibrid alami *Nepenthes* (Nepenthaceae) di Kerinci [tesis]. Padang: Universitas Andalas.  
Anderson MK. 2004. Traditional ecological knowledge : an important facet of the natural definition of

*Nepenthes* into agricultural land, b) only harvesting *Nepenthes* during the sko feast and not harvesting after that so that the *Nepenthes* population recovers, c) only harvesting *Nepenthes* for the implementation of the kenduri sko, and not for other commercial purposes, d) only harvesting the pitcher and not destroying *Nepenthes* as a whole. This agreement effectively minimizes the negative impact of utilization on the presence of *N. ampullaria* in Kerinci.

#### 5. Habitat disturbance from outside

The pressure on the population of *N. ampullaria* in Kerinci does not only come from ecological conditions and harvesting. Habitat change and degradation have a significant impact on population decline. The results of field observations show that habitat degradation is the main cause of the decline in the population of *N. ampullaria* in Kerinci. Habitat degradation was observed in Danau Lingkat and the Rawa Sikijang-Talang Kemuning, but drastic changes in habitat conditions were seen in the Rawa Sikijang.

Rawa Sikijang is a freshwater swamp with the highest *Nepenthes* diversity in Kerinci. This swamp contains six species of *Nepenthes* (*N. ampullaria*, *N. mirabilis*, *N. gracilis*, *N. reinwardtiana*, *N. spathulata*, and *N. tobaica*) and four natural hybrids (Akhriadi 2007). However, field observations in early 2020 showed that most *Nepenthes*' habitats in Rawa Sikijang had turned into a stretch of *Dicranopteris* in the swamp that had dried up and burned.

## CONCLUSION

The importance of *Nepenthes ampullaria* in the sko kenduri tradition resulted in an agreement among indigenous peoples to maintain the presence of *N. ampullaria* in the Kerinci area. The agreement to maintain the existence of *N. ampullaria* is a form of traditional knowledge and local wisdom of indigenous peoples to minimize the negative impact of utilization on the existence of *N. ampullaria* in Kerinci. The agreement of the indigenous peoples to regulate the time and method of harvesting is quite effective in maintaining the sustainability of *N. ampullaria* throughout the history of the sko kenduri in Kerinci. Pressure on the sustainability of *N. ampullaria* in Kerinci does not only come from limited ecological conditions and utilization but also due to habitat degradation. Habitat degradation and change due to infrastructure development have a worse impact on the sustainability of *N. ampullaria* in Kerinci.

## REFERENCES

- ethnobiology. National Plant Data Center. <http://plants.usda.gov> [accessed 2021 December 15].  
[BPS] Badan Pusat Statistik Kabupaten Kerinci. 2019. *Kabupaten Kerinci dalam angka 2019*. Sungai Penuh: BPS Kabupaten Kerinci.

- Cheek M, Jebb M. 2001. *Flora Malesiana Series I, Nepenthaceae*. The Netherlands: National Herbarium Nederland, Universiteit Leiden branch.
- Clarke C. 2001. *Nepenthes of Sumatra and Peninsular Malaysia*. Natural History Publications. Borneo.
- Clarke, C.M. 2018. *Nepenthes ampullaria*. The IUCN Red List of Threatened Species 2018: e.T39640A19630773. <http://dx.doi.org/10.2305/IUCN.UK.2018-1.RLTS.T39640A19630773.en>. [accessed 14 Februari 2021]
- Geng Y, Hu G, Ranjitkar S, Shi Y, Zhang Y, Wang Y. 2017. The implications of ritual practices and plant use on nature conservation: a case study among the Naxi in Yunnan Province, Southwest China. *Journal of Ethnobiology and Ethnomedicine*. 13(53): 2-11.
- Gerst KL, Angert AL, Venable D.L. 2011 'The effect of geographic range position on demographic variability in annual plants. *Journal of Ecology*. 99: 591–599. DOI: 10.1111/j.1365-2745.2010.01782.x.
- Halmy MWA. 2017. Traditional knowledge associated with the desert ecosystem in Egypt. in Roué M, Césard N, Yao YCA, Yeboah AO, editor. *Knowing our Lands and Resources: Indigenous and Local Knowledge of Biodiversity and Ecosystem Services in Africa*. UNESCO. Paris.107-143.
- Hamilton A. 2013. New developments in plant conservation and the relevance of ethnobotany. *Plant Diversity and Resources*. 35(4): 424-430
- Helida A, Zuhud EAM, Hardjanto, Purwanto Y, Hikmat A. 2016. Perhelatan kenduri sko sebagai sebuah pesan kebudayaan masyarakat Kerinci di Taman Nasional Kerinci Seblat. *Masyarakat, Kebudayaan dan Politik*. 29(1): 35–45.
- Helida A, Abubakar R. 2018. Valuasi ekonomi kenduri sko masyarakat Kerinci Kabupaten Kerinci Provinsi Jambi (Studi kasus di Dusun Baru Lempur Kecamatan Gunung Raya, Kerinci). *Sylva* 7: 14–21.
- Hernawati. 2004. A conservation expedition of *Nepenthes* in Sumatera Island. [http://www.conservationleadershipprogramme.org/media/2014/11/110101\\_Indonesia\\_FR\\_NepenthesProject](http://www.conservationleadershipprogramme.org/media/2014/11/110101_Indonesia_FR_NepenthesProject) [accessed 2018 November 22).
- Hernawati, Akhriadi P. 2006. *A Field Guide to the Nepenthes of Sumatera*. Pili NGO Movement. Bogor.
- Irawan P. 2006. *Penelitian kualitatif dan kuantitatif untuk ilmu-ilmu sosial*. Jakarta, Indonesia.: Departemen Ilmu Administrasi Fakultas Ilmu Sosial dan Ilmu Politik Universitas Indonesia.
- Kathambi V, Mutie FM, Rono PC, Wei N, Munyao JN, Kamau P, Gituru RW, Hu GW, Wang QF. 2020. Traditional knowledge, use, and conservation of plants by the communities of Tharaka-Nithi County, Kenya. *Plant Diversity* 42: 479–487.
- Liberty JT, Ugwushiwo BO, Bassegy GI, Eke VN. 2013. Effects of natural resource utilization on the ecosystem and its remedies in Nigeria. *International Journal of Scientific & Engineering Research*. 4(8): 2115–2122.
- Liu, HM, ZF Xu, YK Xu, JH Wang. 2002. Practice of Conservation Plant Diversity through Traditional Beliefs: A case study in the Xishuangbanna, Southeast China. *Biodiversity and Conservation*. 11: 705–13.
- Maroyi A. 2017. Diversity of use and local knowledge of wild and cultivated plants in the Eastern Cape province, South Africa. *Journal of Ethnobiology and Ethnomedicine*. 13 (43):1–16.
- Martin G. 1995. *Ethnobotany: a method manual*. London: Chapman & Hall.
- Nasution S. 2017. Tradisi kenduri sko dan memandikan benda-benda pusaka dalam perspektif hukum Islam (Studi kasus di Kelurahan Dusun Baru Kota Sungai Penuh). *Jurnal Islamika*. 17(2): 75–96.
- Negi CS. 2010. Traditional culture and biodiversity conservation: Examples from Uttarakhand, Central Himalaya. *Mountain Research and Development*. 30(3): 259–265.
- Neuman W. 2014. *Social Research Methods: Qualitative and Quantitative Approaches*. Seventh Ed. Pearson Education Limited.
- [Perda] Peraturan Pemerintah Daerah Kabupaten Kerinci No. 24 Tahun 2012 tentang Rencana Tata Ruang Wilayah Kabupaten Kerinci Tahun 2012-2032.
- Rana S, Sharma D, Paliwal P. 2016. Ritual plants used by indigenous and ethnic societies of district Banswara (South Rajasthan), India. *American Journal of Ethnomedicine*. 3(1): 26–34.
- Schaal B. 2018. Plants and People: Our shared history and future. *Plants, People, Planets* 1: 14-19
- Sunliyensar H. 2016. Ritual Asyeik Sebagai Akulturasi Antara Kebudayaan Islam dengan Kebudayaan Pra-Islam Suku Kerinci. *Siddhayatra*. 21(2): 107–128.
- Susanti T, Murtadlo A, Warti R. 2019. Persepsi masyarakat Kerinci terhadap kelestarian *Nepenthes* ditinjau dari kondisi sosial keagamaan, ekonomi dan budaya, *Jurnal Biotek*. 7(2): 122–135.
- Suswita D, Syamsuardi, Arbain A. 2013. Studi etnobotani dan bentuk upaya pelestarian tumbuhan yang digunakan dalam upacara adat kendurisko di beberapa kecamatan di Kab. Kerinci, Jambi. *Jurnal Biologi*. 2(1): 67–80.
- Syaputra D. 2019. Ritus dan manuskrip: analisis korelasi naskah dengan kenduri sko di Kerinci. *Hadharah: Jurnal Keislaman dan Peradaban*. 13(2):79–102
- Teka A, Asfaw Z, Demissew S, Van Damme P. 2020. Medicinal plant use practice in four ethnic communities (Gurage, Mareqo, Qebena, and Silti) in south-central Ethiopia. *Journal of Ethnobiology and Ethnomedicine*. 16(27): 1–16.
- Uprety Y, Asselin H, Bergeron Y, Doyon F, Boucher JF. 2012. Contribution of traditional knowledge to

ecological restoration: Practices and applications.

*Ecoscience*. 19(3): 225 – 237