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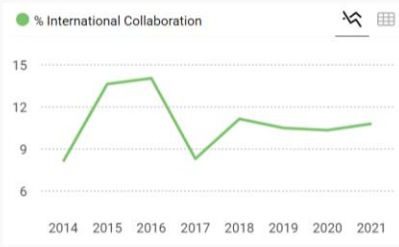

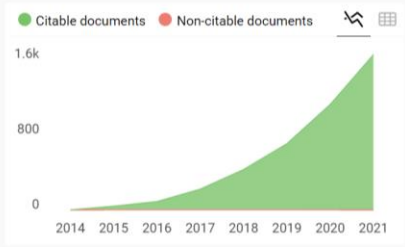

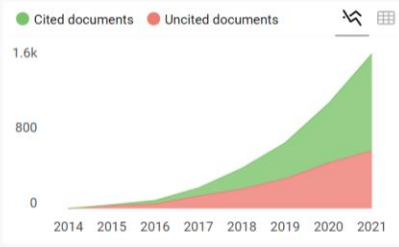

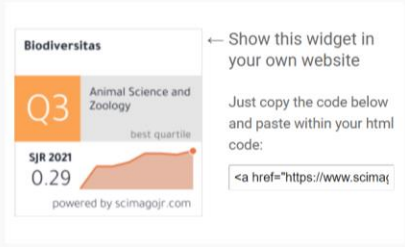

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The practice and plants used in *Besale* ritual healing by the Anak Dalam Tribe in Nyogan Village, Jambi, Indonesia

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Abstract. *Asra R, Silalahi M, Fijridiyanto IA. 2020. The practice and plants used in Besale ritual healing by the Anak Dalam Tribe in Nyogan Village, Jambi, Indonesia. Biodiversitas 21: 4529-4536.* The Anak Dalam Tribe (ADT) is an indigenous ethnic which inhabits the center of Sumatra, especially in Jambi and South Sumatra Provinces, Indonesia. The ADT communities still maintain their traditional rituals; one of them is the *Besale* ritual healing (BRH). This study aims to analyze the diversity of plants used in BRH by the ADT in Nyogan Village, Jambi Province, Indonesia. The study was conducted with an ethnobotany approach through surveys using interviews and participatory observations. The total number of informants was six persons, namely the leaders and performers of the BRH. The data were analyzed qualitatively using descriptive statistics. The BRH is carried out by a dukunorsidi (shaman), bujang pembayun (dancers), biduan (singers), and inang (assistant). They combine ritual and treatment simultaneously to cure people who have severe illnesses. There are 21 species belong to 20 genera and 12 families of plants used in the BRH. The plants are used to build a hall (place for the BRH), "bird" ornament, and offerings. The most widely used part of the plant is the flowers (34,61%). The plants used in the BRH are fresh materials, which are burned, smoked, hung, and eaten during the ritual.

Keyword: Anak Dalam Tribe, *Besale*, bujang pembayung

INTRODUCTION

There are more than 80 ethnic groups live in Sumatra (Bangun 2010). Various ethnic groups Sumatra have traditional ceremonies, including the Uras (Hariyadi and Tictin 2012), Kendurisko (Suswita 2013), Togak Belian (Ardina 2016), and Nyimur (Awaliah 2019). One of the ethnic groups in Jambi is the Anak Dalam Tribe (ADT). These tribes inhabit the South Sumatra and Jambi Provinces, whereas their majority in Jambi Province (Ibrahim 2013). The customs and habits of the ADT are different from the Malays, so the primitive assumption is still inherent today (Takiddin 2014).

In Indonesian, especially in Sumatra, there is a traditional ceremony by *Kendurisko* traditional ceremony in several sub-districts in Kerinci District, Jambi, found 37 species of plants in 22 families (Suswita 2013) and the people of Kanagarian Sontang Cubadak Padang, Gelugur Sub-district, Pasaman District, West Sumatra with 30 species of plants from 19 families (Des et al. 2019). The local communities in KasepuhanCiptagelar, West Java, carry out rituals nyimur as a healing media, and its relationship to healing/rejecting the method of bad luck has existed since hundreds of years ago (Awaliah 2019). Wakhidah et al. (2017) said that the utilization of plants in traditional ceremonies could produce a culture of sustainable plant resource management.

One of the traditional ceremonies that are still maintained until today is the *Besale* ritual healing (BRH) by the AnakDalam Tribe/ADT (Orang Rimba). The ADT is a tribe that still upholds the beliefs of their ancestors. Administratively, this tribe inhabits the South Sumatra and Jambi Provinces, whereas their majority in Jambi Province (Ibrahim 2013). Takiddin (2014) said that the customs and habits of the ADT are different from the Malays, so the primitive assumption is still inherent today. The BRH used plants, especially the flowers, which were taken from the forest. The flowers used for wedding ceremonies are different from the flowers used for this ritual (Takiddin 2014). The utilization of plants for traditional ritual indirectly has affected to biodiversity conservation (Liu et al. 2002; Gam and Nat 2012).

The ADT is one of the indigenous ethnic groups that live on the island of Sumatra and is considered the first tribe to inhabit Jambi Province (Effendi and Purnomo 2020). ADT is rich in local knowledge, especially the use, cultivation, and introduction of jernang (*Daemanorops* spp.) (Sulasmi et al. 2012), rattan (Mairida et al. 2016), and jelutung (*Dyera* spp.) (Aminah et al. 2016) and turn it into the primary income. ADT utilizes forest products and hunting as a livelihood and believes in magical things that are considered sacred as ancestral heritage (Effendi and Purnomo 2020), which are considered as their identities (Harnov et al. 2017). This can preserve the indigenous customs, culture, and knowledge from each population

through the documentation from their ancestors (Cakilcioglu andTurkoglu 2010; Heywood 2011). This study aims to analyze the diversity of plants have been by Anak Dalam Tribe to the *Besale* ritual healing in Nyogan Village, Jambi Province, Indonesia.

MATERIAL AND METHODS

Study area

The study was carried out at the ADT in the Nyogan Village, Jambi Province, Indonesia. The study was conducted during November-December 2019 at the Nyogan Village, Muaro Jambi District, Jambi Province, Indonesia (Figure 1). The Nyogan village is located at 103º30'0"-103º35'0" E, and 2º0'00" S at an altitude of 5-10 m above sea level and 55 km away from Jambi. The area of Nyogan Village is 7,872 km^2 and consists of 4 hamlets, namely Nyogan Hamlet, JeratHarimau Hamlet, Nebang Para Hamlet, and Selapik Hamlet. The population living in this area is 3.400 people, consisting of 1.637 women and 1763 men who come from 970 families. The local communities in the Nyogan Village consist of 50% ADT and 50% Melayu Jambi and Java Tribe. The ADT in Nyogan, initially lived on rafts along the river, so their main livelihood was fishing and selling it to other residents, as well as looking for non-timber forest products. But now they don't live on the raft anymore, because they have been given a place to live by the oil palm company there.

Interview and data collection

The survey used semi-structured interviews and observation participatory (Martin 1995; Cotton 1996). In its implementation, the BRH involves sufferers, shamans, dancers, drummers, and participants. In data collection, the researcher acts as a participant along with other communities and documents all processes from the start to the completion of the ritual ceremony. The informants were determined by purposive sampling, namely traditional healers who had performed *Besale* healing. The interview method was done to obtain information about the stages of BRH, types of plants, ways of utilization, and acquisition sources. Determination of informants also refers to Silalahi (2016), which states that in determining the criteria for informants who need note several things namely informants who have long and intensively integrated with activities of the researcher's attention; who is still involved intensively integrated with activities or activities that are the target of the researcher's attention; have enough time or opportunity to the information requested. A total of informants interviewed were six persons who were involved in the BRH. The minimum number of informants is due to the fact that the people involved in BRH are decreasing and have begun to be left behind, and the number of shamans is very limited. Data collected includes local names, parts used, and benefits of the plants used to Basale ritual healing. The plant collected is made voucher specimen and deposited in the Biology Departement of Jambi University. The plant identification was carried out at Andalas Herbarium, Andalas University, Padang.

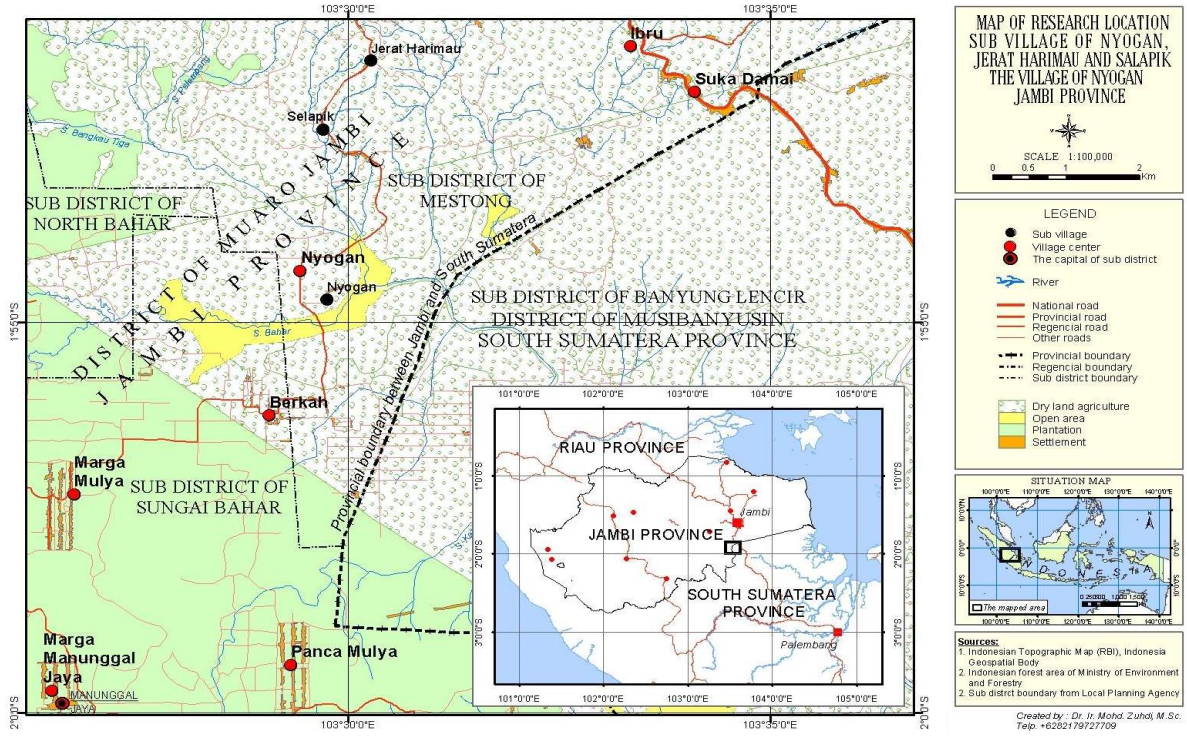

Figure 1. Study site at Nyogan Village, Muaro Jambi District, Jambi Province, Indonesia

Data analysis

The data obtained were in the form of quantitative data, namely the BRH process, the name of the plant used, the part of the plant used, and its function. The data were analyzed qualitatively using descriptive statistics (Silalahi and Nisyawati 2019). Descriptive statistics were conducted to obtain the most widely used plant species and families, also conservation behavior of BRH at Nyogan Village, Jambi Province. The qualitative analysis is carried out by explaining and describing the BRH process carried out in Ngoyan Village, Jambi.

RESULT AND DISCUSSION

***Besale* ritual healing**

The BRH has been practicing for a long time ago or since the ADT inhabited in the Ngoyan Village. This ritual is still carried out until the time of the research, but it tends to experience degradation. The most ADT in the Ngoyan Village believes that the disease is caused by the spirit of the ancestor who is "*angry*" with the sufferer so that the evil spirit enters the patient's body. This occurs because of violations committed by members of the community towards nature and against ancestral spirits. Therefore, to heal is done by expelling evil spirits from the sufferer's body. The ADT believes that to get rid of evil spirits, a ritual, led by a shaman, is carried out in a series of processes called BRH. In implementing BRH, the dukun is assisted by a shadow man (*pembayung*), a drummer, a dancer, and a host with different duties. The shaman is tasked with helping the shaman recite incantations (special reading to ward off evil spirits). The chanting of the incantation is accompanied by music (by the drummer) and dance (by the dancer). The dance movements are heavily influenced by the incantation speaker and the rhythm of the drums. The informant stated that sometimes dancers do not realize the movements they are doing, and the movements cannot be stopped alone but must be assisted by a shaman. The BRH process is divided into three stages. They are a request by the patient to shaman, *Bertakas* (preparations), and the BRH night procession. The following is an explanation of the three stages of the BRH (Table 1).

Ornaments and Balai (halls) in *Besale* ritual healing

During the *Besale* process, there are several important ornaments used in the event. These ornaments are called "*balai*". (Table 2). The *balai* (hall) is a house believed by SAD to be the place where ancestral spirits reside. Balai (hall) is a miniature house measuring 1 meter. Seven *balai* (halls) are needed in carrying out the *Besale* ceremony. They are namely: *Balai Pengadapan, Balai Pengasuh, Balai Kurung Resio, Balai Bertajuk Kembang, Balai Gelanggang Kuning, Balai Bebangun, and Balai Betanggo Malai*. Naming *balai* (hall) is closely related to the function of each *balai* (hall), such as a *Balai Penghadapan* (a front hall), which is useful as a place for patients to be faced. *Pengadapan* here means that the patients will face the evil spirits that cause disease in themselves.

Table 1. The stages of the *Besale* ritual healing

Activities	Executors	Place	Function
A Request by the patient to shaman	Citizens who want to seek treatment	Shamn's house	To diagnose the disease suffered by the person. After being diagnosed, then it is checked whether the *Besale* ritual can be carried out or not.
Bertakas (Preparation steps)			
Collecting material	All of citizens and patient's families	forest	To find natural materials that are used in making ornaments and offerings.
Making of offerings	All of citizens and patient's families	Patient's house	To prepare the offerings given to the spirits of the ancestors
Making of Ornament	All of citizens and patient's families	Patient's house	To make ornaments needed in ceremonies such as *balai* (hall building)
Giving *sirih petanyo*	Family members of the patient	Patient's house	To ask the shaman for help Or the traditional leader symbolically and to ensure that all the required materials are completely available.
Hanging of *balai* (hall building)	All of citizens and patient's families	Patient's house	To hang a *balai* on the wall of the house (as a place for patients to be treated) and six *balai* under the roof of the house.
BRH night procession			
Opening ceremony	Shaman	Patient's house	To govern the patient to sit under the *balai pengadapan* (tapping hall)
Expelling/releasing evil spirits	Shaman	Patient's house	To ward off evil spirits that cause disease in the patient
Closing ceremony	Shaman	Patient's house	To beg ritual that has been done successfully and give a break to the patient

Table 2. Ornaments used in the *Besale* ritual healing

Name of ornaments	Meaning	Function
Balai Pengadapan	A symbol of respect for the spirits of the ancestors	A place for the patient to be treated
Balai Pengasuh	Symbol of offerings to the spirits who have entered into a shaman	To treat children in order to have a balance in loving father or mother
Balai Kurung Resio	The innermost symbol of the human soul	As a place for ancestral spirits to reside during the ceremony
Balai Bertajuk Kembang	Symbol of the gathering of the spirits of the ancestors	For a place of respect for the ancestors for a place of respect for the ancestors
Balai Gelanggang Kuning	Symbols of "village watchman" such as genies and demons that roamed on the sea and air	To drive out the evil spirits so that they don't bother anymore
Balai Bebangun	Symbol of awakening the ancestors	To awaken the spirits of the ancestors so that the spirits can enter the body of the shaman
Balai Betanggo Malai	Symbol of exorcism of evil spirits	To ward off evil spirits that are inside the patient

The seven halls used are made of tamarind wood, which is nailed with bamboo as an adhesive to each other. The hall that was ready was then tied with bark and then hung. The hall is decorated with *yarlipan* (centipede finger) decorations. *Yarlipan* is made of light green coconut leaves. Each *balai* is also furnished with decorations. There are *Ocimum basilicum* L. leaves stuck on the roof of the *balai*, *Celosia argentea* L. to decorate the roof of the hall, *Bertih* (*Oryza sativa* L. were two years old), candle made from forest honey for lighting, *arangayun (*charcoal swing) made of copper and *sumping tamping*, which made from coconut leaves. The decorations that each hall is different, for example, *Balai Pengasuh* with five *arangayun* decoration and *Balai Kurung Resio* wrapped with white fabric.

The following are the stages of preparation carried out before the BRH, i.e. "*balai*" (hall building). The *balai* is a place for offerings needed in the *Besale* ceremony, which forms in the *Besale* ceremony similar to the miniature of the Jambi traditional house. According to Novriawati (2018), the four pillars of the *balai* symbolize the four figures involved in the ceremony, namely *sidi, inang, bujang pembayu* and *biduan. Sidi* is the shaman who leads the way BRH, *inang* is an assistant who helps Sidi in BRH, *bujang pembayu* is a person who is in charge of following the *sidi* when berating and *biduan* is the person who accompanies the BRH process overnight by beating the *redup* (a kind of drum which is made from tree bark). The four figures work together to maintain the *balai* to remain strong. The hall symbolizes the place of the sick so that the four figures involved must protect the patients in the *balai.*

The main *balai* is a *balai* as a candle holder (made of beehives), which is lit during the ceremony. The center uses the main pillars of the *payo asam* (*Eleiodoxa conferta*) stem and *Bambusa vulgaris* Schard culms. To decorate the hall used *payo asam* (*E. conferta*) leaf buds, *berti* (padded rice). Fibers from banana fronds are used to tie garnishes to the main stem of the *balai*.

In addition to the main *balai* in the BRH, another *balai* is also needed, which is called the *Balai Pangadap* (depot hall), the *Balai Pengasuh* (Caretaker Hall), the *Balai Betanggo Malai* (*BetanggoMalai* Hall), the *Balai Angkat Sembah* (*Angkat Sembah* hall), the *Balai Gelanggang Kuning* (Yellow Hall) (Figure 2). The *balai* is made from a variety of different types of plants between *balai*. *Balai Pengadap* contains a collection of *Areca catechu* and some birds and toys made from *Cocos nucifera* leaves, *Bambusa vulgaris* sticks, *berti*, *Celosia argentea* flowers, *Artocarpus integra* leaves, and *Pandanus amaryllifolius* leaves. These offerings are useful for feeding spirits that come into the *balai*. Behind this, a candle is placed from the honeycomb whose flame must be maintained until the ritual is complete. People who are sick are usually under this hall. The use of birds in BRH is suspected as a medium to bring disaster, in this case, a flying disease (out of the patient). To release the disease from the patient is preceded by singing and dancing. *Syair* or mantra in the song is uttered by *Sidi* accompanied by *redap.* The dancing movements performed in BRH are known as *berentak. Berentak* is the movement of walking straight forward, backward, going around, and jumping. The scrambled movements in BRH are short, heavy movements and contain four basic footsteps. Ananda (2019) states that the Sakai tribe in Sumatra uses bird swing ornaments made of coconut leaves at a healing ceremony. Almost the same thing was found at the BRH using a small house (hall) with plaited birds and coconut leaves on its head as a property. The hall was provided and functioned as a place for the evil spirits to leave after leaving the sufferer.

The *Balai Pengasuh, Betanggo Malai*, and *Angkat Sembah* have different names but in the implementation of ceremonies, have a single function as a place of offerings. That *balai* contains the types of offerings, such as *juwada* (glutinous rice with coconut milk), *wajik* (processed glutinous rice with palm sugar), *cace* (glutinous rice), *lemang* (glutinous rice cooked in bamboo), and boiled eggs. In the presentation, all offerings are placed on a banana leaf called a *temengkur* (like a rectangular bowl made of banana leaves). *Balai Gelanggang Kuning* is a yellow colored hall (the dye is made from turmeric extract). This hall contains offerings in the form of rice, grilled chicken, various flowers that produce a fragrant aroma (jasmine, ashoka, mato caterpillar, tangkul, Selasih).

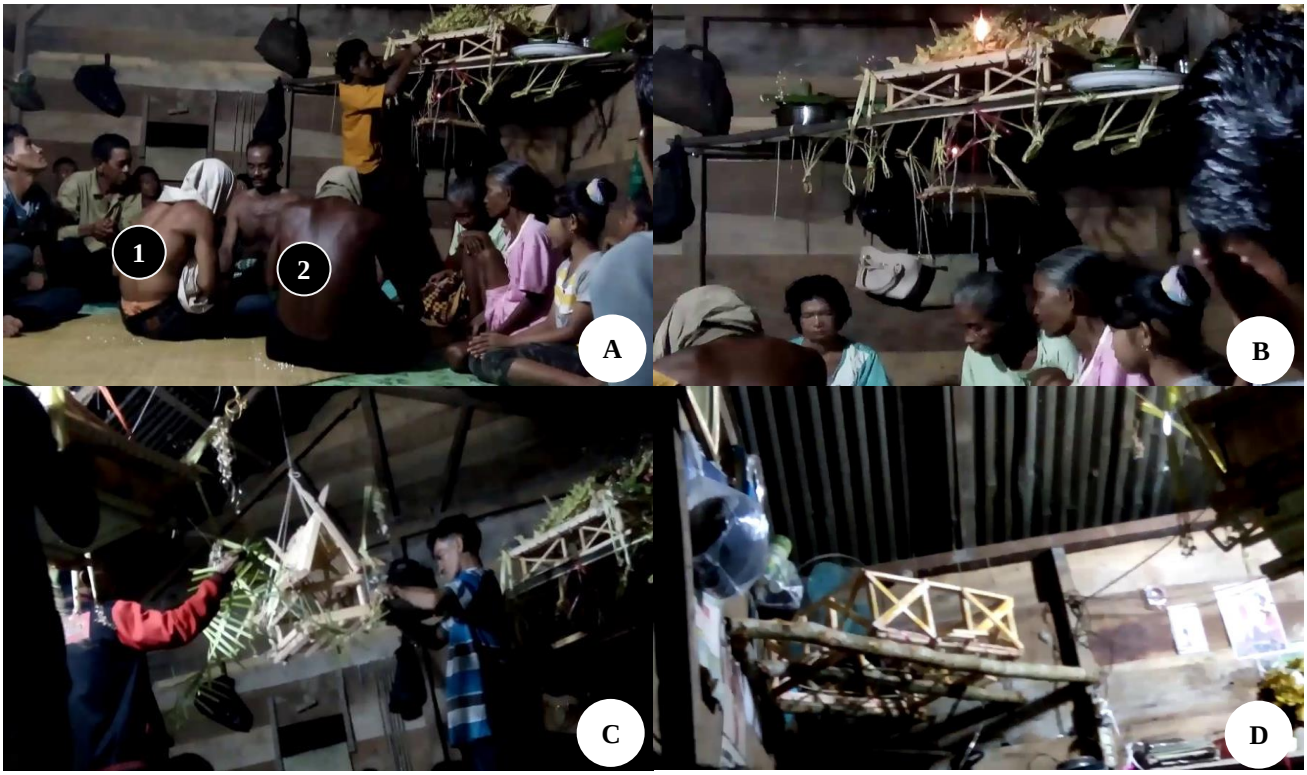

Figure 2. Ritual *Besale* and Balai used by a tribe of ADT in Nyogan Village, Muaro Jambi District, Jambi Province, Indonesia. A. *Besale* is ongoing; B. *Balai Pangadap*; C. *Balai Penghiasan*; D. *Balai Gelanggang Kuning*. 1: *Sidi*, 2: *Bujang Pembayun*

The *Besale* ceremony involves various components, namely *dukun* / *sidi* (1 person), *bujang pembayun* (2 persons), *biduan* (2 persons), and *inang* (1 person). The dukun is tasked with leading the ceremony that begins with the burning of the kemeyan sap in front of the dukun's house before night (the patient is in the dukun's house) and *Areca catechu* leaf midribs. One of the building blocks of the shaman's house wall was opened so that the public could witness the ritual and carry out the ceremony together. In the ADT tribe the shaman is hereditary. *Sidi* uses a white cloth on her head. A sidi is usually a man. Novriawati (2018) said that the white color symbolizes the angel's representative. Using white cloth on BRHs because humans have four protective angels so Sidi has been protected by the four angels.

During the *Besale* ceremony the *sidi* and *bujang pembayun* performed the dance together and recited spells to summon the spirits of their ancestors. The presence of these spirits is believed to cure the sufferer's illness and ward off disaster. Dance activities are carried out by the shaman by walking forward, backward, and circular (around the patient). The patient's position is under the hall by sitting or lying down. Circular and repetitive movements are sacred, united, and symbolize an unbroken wholeness, continuous. The circle is also a depiction of the *sidi*, the host, the choir, and the wager's servant connected to each other and unbroken because they are connected to each other.

The duration of the *Besale* ceremony is generally carried out for a night until dawn. the ADT community performs rituals at night because they believe that at night the devils spend. Scientifically, people choose to do the ceremony at night because in the morning until noon, the community conducts activities. After a few days after *Besale*, most sufferers will heal. At the time of this study, patients recovering after a few days of the BRHs. Although it is scientifically difficult to explain, empirical evidence shows that the healing of disease with *Besale* has been clearly seen. *Besale* is local wisdom from ADT to cure a serious illness facilitated by a shaman to summon the spirits of his ancestors to cure illnesses and keep them from calamity. Through this BRH, the community indirectly gets a message related to maintaining the values between them as a socio-cultural value system. One of them is the value of collaboration, starting from the preparation of the materials used in the riot *Besale* to the process of carrying out the ceremony. Collaboration occurs between ADT communities and *dukun*. BRH can also strengthen the relationship between the ADT communities.

The ADT communities will come together to attend the BRH at the patient's house.Even though the community knows religion (like Islam) and education, *Besale* ritual is not abandoned. The community believes that everything they get, both in the form of good, bad, success or disaster, and failure comes from the gods. As a form of appreciation and offerings to the gods and spirits, they carry out rituals according to their needs and expectations. One form of ritual that is often performed is this *Besale* ceremony.

Table 3. List of plants used in the of *Besale*ritual healing by ADT in Nyogan Village, Muaro Jambi District, Jambi Province, Indonesia

Plant family and species	Vernacular name	Annual / perennial	Part of used	Used
Amaranthaceae				
Celosia argentea L.	Tangkul merah	Annual	Flowers	Ornament of balai
Arecaceae				
Areca catechu L.	Pinang	Perennial	Midrib, flowers and fruits	Lamina of leaf as ornament and fruit as whistle
Cocos nucifera L.	Kelapa	Perennial	Leaves	Toys as "bird"
Elaeis guineensis Jacq.	Sawit	Perennial	Fruits	Oil
Eleiodoxa conferta (Griff.) Burret	Asam payo	Perennial	Stem and young leaves	Ornament and *Balai* material
Cyperaceae				
Actinoscirpus grossus (L.f.) Goetgh. & D.A.Simpson	Rumbe	Annual	Leaves	Ornament of *Balai*
Lamiaceae				
Ocimum basilicum L.	Selasih	Annual	Flowers	Offering
Moraceae				
Artocarpus integer (Thunb.) Merr.	Nangka	Perennial	Leaves	Ornament of *Balai*
Musaceae				
Musa paradisiaca L.	Pisang	Perennial	Stem and leaves	Binding rod and base of offerings
Oleaceae				
Jasminum sambac (L.) Aiton	Melati	Annual	Flowers	Offerings
Pandanaceae				
Pandanus amaryllifolius Roxb.	Pandan	Annual	Leaves	Ornament of *Balai*
Piperaceae				
Piper betle L.	Sirih	Perennial	Leaves	Food
Poaceae				
Bambusa vulgaris Schard	Bambu kuning	Perenial	Stem	Stick
Oryza sativa L.	Padi Juwa da	Annual	Friuts	Ornament of *Balai*
Oryza sativa L. var. glutinosa	Wajik, cace and lemang	Annual	Fruits	Offerings
Panicum virgatum L.	Rumput telebung	Perenial	All parts	Ornament of *Balai*
Rubiaceae				
Ixora sp.	Asoka	Annual	Flowers	Offerings
Uncaria gambir (W. Hunter) Roxb.	Gambir	Perennial	Sap	Food
Styracaceae				
Styrax benzoin Dryander	Kemenyan	Perennial	Sap	Scent
Zingiberaceae				
Curcuma longa L.	Kunyit	Annual	Rhizome	Resources of color
Globba pendula Roxb.	Pedas kancil	Annual	Flowers	Offering

Plant used in *Besale* ritual healing

The ADT was utilizing plants obtained from the surrounding environment for the BRH. Plant parts were used in the ritual, such as flowers, leaves, stems, and fruit. Some the local communities (not ADT) in the neighborhood such as the Malay ethnic in Palembangdid the *Besale*, especially for the people who are already desperate with medical treatment, but the ritual leader is conducted by the ADT. The BRH involves various components of the ADT community whose task is to prepare all the needs in the ritual. Healing in Basale is strongly influenced by the availability of overall requirements.

This research showed as many as 21 plant species belonging 20 genera, and 13 families have been used by Anak Dalam Tribe in BRH (Table 3). This research is the first to report the use of plant species in BRH. This result is different from Kurnian and Syafri (2018), which only explained the process of *Besale* without mentioned the use of plants in this ritual.

Parts of plant used in *Besale* ritual healing

The parts of the plant used in BRH are leaves, fruits, sap, stem, rhizome, midrib, steam, leave, and all parts (Figure 3). The most widely used is flowers (six species), followed by leaves (five species) and fruits (four species). The plants used in the BRH are fresh materials, which are burned, smoked, hung, and eaten during the ritual.

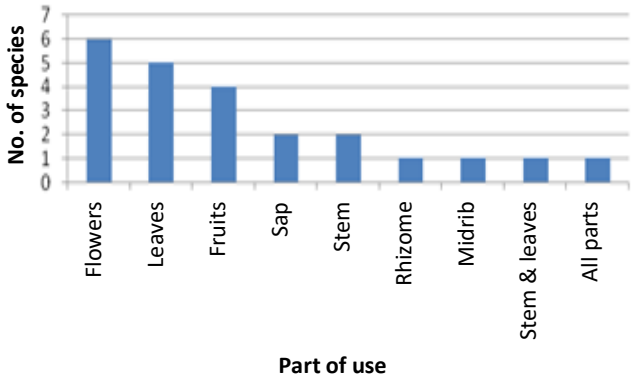

Figure 3. The relationship between the number of species and the parts of the plant used for *Besale* ritual healing

Discussion

The ADT is one of the indigenous ethnic groups living on the island of Sumatra and is considered the first tribe to inhabit the Province of Jambi (Effendi and Purnomo 2020). The AnakDalam tribe is often referred to as the *Orang Kubu*, *Orang Rimbo*, and *Orang Kelam* (Ahat and Auliahadi 2018). The *Orang Kubu* in Malay has two meanings of hiding places and stupid, so this title began to be abandoned because it was considered rude, while Orang Rimbo has the meaning of humans who live in the forest according to ADT customs (Ahat and Auliahadi 2018), but ADT is considered to be more popular in the community. The ADT is rich in local knowledge, especially the use, cultivation, and introduction of *jernang* (*Daemanorops* spp.) (Sulasmi et al. 2012), rattan (Mairida et al. 2016), and *jelutung* (*Dyera* spp.) (Aminah et al. 2016). These plants become their primary income.

The ADT utilizes forest products and hunting as a livelihood. They believe in mystical things that are considered sacred as ancestral heritage (Effendi and Purnomo 2020), which are considered as their identities (Harnov et al. 2017). Most of ADT live semi-nomadic or nomadic (Ahat and Auliahadi 2018). The *melangun* (moving to a new location or leaving an old location)) is done when a relative or citizen dies, avoids the enemy, and opens a new field. The ADT house or residence is called *sesudungon* (small stage huts) and *rumahg odong* (a large-sized hut) made of wood (floors, poles, walls) while the roof is made from leaves (Khamdevi 2019). Its language, customs, matrilineal familial inheritance system is similar to Minangkabau ethnicity in West Sumatra (Khamdevi 2019), so ADT is thought to be originated or related to Minangkabau ethnicity (Pratama and Auliahadi 2019).

The BRH has the meaning of cleansing the souls of people who are sick due to evil spirits that reside in a person and the cultural heritage of ADT in non-medical treatment (Kurniawan dan Syafri 2018; Sinaga dan Rustaman 2015). The BRH is closely related to the beliefs of animism and the unseen soul (Kurniawan and Syafri 2018). The implementing BRH requires a lot of material so that the costs are relatively expensive, especially when viewed from the income and profession of ADT as a gatherer (gathering and hunting to make ends meet). The ADT considers that if a family member or a sick relative is a sign that the deity has brought disaster down, so the ceremony is a sacred ceremony (Kurniawan and Syafri 2018). Hariyadi and Ticktin (2012) stated that to maintain their health, local communities in Jambi have a harmonious relationship between humans, nature, and invisible beings. Silalahi et al. (2015) said that supra-natural disease is a disease caused by a supra-natural spirit, karma, and bad attitude from someone, for example, hungry edema. Hungry edema is believed by the Simalungun Batak sub-ethnic tribe of North Sumatra as a result of stealing. There are also several tribes in Indonesia who treat disease by magic using one species of the plant directly without doing a traditional ritual, such as Batak Toba tribe, for example, using seeds from the *Eurycoma longifolia* (Silalahi and Nisyawati 2015).

Various local communities in Indonesia have been long used plants in rituals such as the Sarampas community in the Jambi, Tajio, Malays, Benuaq Dayak, Seberuang Dayak, Kayanatn Dayak, and Kenduri Siko (Andesmora et al. 2017; Fadilah et al. 2015; Falah et al. 2013; Hariyadi and Ticktin 2012; Hasanah et al. 2014; Rahyuni et al. 2013; Takoy et al. 2013). When viewed from the part used in *Besale* it is dominated by flowers (34.61%). The use of flowers in rituals is thought to be related to the proverb or the ADT saying, namely *ado rimbo ado bungo, ado bungo ado dewa* (there is a forest, there are flowers, there are flowers, there are gods). Empirically various ethnic groups in Indonesia such as Bali and Java utilize various flowers in traditional and religious ceremonies such as *Plumeria* sp. and *Clitoria ternatea* flowers. Purwanti (2017) found something different in the Saluan Tribe in Central Sulawesi, which used more stems and leaves for traditional rituals. In this healing ritual *Besale* most plant species are used as ritual offerings and symbols such as.

The BRH is local wisdom by ADT to treat severe illnesses through a ceremony to release evil spirits that disturb sufferers by utilizing plants as offerings and built of ritual ornaments. A total 21 species belonging 12 families, have been used in the BRH by ADT in Nyogan Village, Muaro Jambi District, Jambi Province, Indonesia. The most widely used plant parts are flower organs, with a percentage of 34.61%. The use of plants for the *Besale* ritual is by burning, stirring, hanging, and eating directly.

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REFERENCES

Ahat M, Auliahadi A. 2018. The history of conversion from aninism to Islam in the Anak Dalam Tribe in Soralangun, Jambi Province (2005-2013). Fuaduna 2 (2): 96-107.

Aminah, Zuhud EAM, Siregar IZ. 2016. Utilization of jelutung (*Dyera* spp.) among Anak Dalam Tribe in Bukit Duabelas National Park. Media Konservasi 21 (2): 168-173. [Indonesian]

Andesmora EV, Muhadiono, Hilwan I. 2017. Ethnobotanical study of plants used by people in Hiang Indigenous Forest Kerinci, Jambi. J Trop Life Sci 7 (2): 95-101.

Ananda WR, Sutiyono, Magfirah FZ. 2019. The balai terbang dance: from healing to dance movements. Adv Soc Sci Educ Humanities Res 444: 261-266.

Ardina R. 2016. Symbolic Meaning Of The Traditional Ritual Of Toful Treatment Buy In Koto Rajo Village Kecamatan Kuantan Hilir Seberang Kuantan Singingi District, Riau Province. JOM Fisip 3 (2): 1-12

Awaliah YR, Darajat D, Safitri EY. 2019. Nyimur ritual as a healing media and refusing bad luck in traditional knowledge system of Kasepuhan Ciptagelar Communities. Adv Soc Sci Educ Humanities Res 424: 257-261.

Bangun P. 2010. Bataks Culture. In: Koentjaraningrat Man and Culture in Indonesia. Djambatan, Jakarta.

Cakilcioglu U, Turkoglu I. 2010. An ethnobotanical survey of medicinal plants in Sivrice (Elazig Turkey). J Ethnopharmacol 132: 165-175.

Cotton CM. 1996. Ethnobotany: Principles and Applications. John Wiley and Sons Ltd., Chichester, England.

Des M, Rizki R, Hidayat H. 2019. Ethnobotany in traditional ceremony at Kanagarian Sontang Cubadak Padang Gelugur Sub-district, Pasaman District. IOP Conf Ser Mater Sci Eng 335 (1): 012018. DOI: 10.1088/1757-899X/335/1/012018.

Effendi GN, Purnomo EP. 2020. Collaboration government and CSR a case study of Suku Anak Dalam in Pompa Air village, Jambi-Indonesia. Int J Acad Res Business Arts Sci 2 (1): 19-39.

Fadilah, Lovadi I, Linda R. 2015. The use of plants in the traditional medicine of the Kanayatn Dayak people in Ambawa Village, Kubu District, Kubu Raya Regency. Jurnal Protobiont 4 (3): 49-59. [Indonesian]

Falah F, Sayektiningsih T, Noorcahyati. 2013. Diversity and utilization of medicinal plants by local community around Gunung Beratus Protection Forest, East Kalimantan. Jurnal Penelitian Hutan dan Konservasi Alam 10 (1): 1-18. [Indonesian]

Gam NK, Nath PC. 2012. Conservation of plant diversity through traditional beliefs and religious practices of Rural Mishing Tribes in Majuli River Island, Assam, India. Indian J Fundamental Appl Life Sci 2 (2): 62-68.

Hariyadi B, Ticktin T. 2012. "Uras" medicinal and ritual plant of Sarampas Jambi, Indonesia. Ethnobot Res Appl (10): 133-149.

Harnov H, Amzu E, Soekmadi R. 2016. Forest conservation learns from the ethical values and traditions of the Anak Dalam Tribe in Bukit Duabelas National Park, Jambi Province. Risalah Kebijakan Pertanian dan Lingkungan 3 (1): 24-38. [Indonesian]

Hasanah U, Linda R, Lovadi I. 2014. Utilization of plants in the Malay Tumpang Negeri traditional ceremony at Ismahayana Landak Palace. Protobiont 3 (3): 17-24.

Heywood VH. 2011. Ethnopharmacology, food production, nutrition and biodiversity conservation: Towards a sustainable future for indigenous peoples. J Ethnopharmacol 137: 1-15. DOI: 10.1016/j.jep.2011.05.027.

Khamdevi M. 2019. The PKM floating house design validatorof the Anak Dalam Tribe, by student innovation of Man Insan Cendekia Jambi. Jurnal Ilmiah Penelitian Marka 3 (1): 47-51. [Indonesian]

Kurniawan D, Syafri RA. 2018. *Besale* as the local wisdom of the Anak Dalam Tribe in Nyogan Village, Mestong Sub-district, Muaro Jambi District, Jambi. 3rd National Seminar on Management and Business, Management Study Program, Faculty of Economics and Business, Universitas Jember, Jember. [Indonesian]

Ibrahim. 2013. The life of the Anak Dalam Tribe in Air Hitam Sub-district Sarolangun Regency. Jurnal Antologi Geografi 1 (3): 1-15. [Indonesian]

Liu H, Xu Z, Xu Y, Wang J. 2002. Practice of conserving plant diversity through traditional beliefs: A case study in Xishuangbanna southwest China. Biodivers Conserv 11: 705-713.

Mairida D, Muhadiono, Hilwan I. 2016. Ethnobotanical study of rattans on Suku Anak Dalam community in Bukit Duabelas Nasional Park. Biosaintifika 8 (1): 64-72.

Martin GJ. 1995. Ethnobotany: A Method Manual. Chapman and Hall, London, England.

Novriawati A. 2018. Meaning and symbols concerning the *Besale* ceremony in the children of tribe in The Johor Baru Village, Bungku Village, Batanghari Jambi District. Joged 11 (1): 603-616. [Indonesian]

Pratama FS, Auliahadi A. 2019. The history of developing the Anak DalamTribe in Mentawak Village, Nalo Tantan Sub-district, Merangin District, Jambi Province. Tabuah 23 (2): 157-167. [Indonesian]

Purwanti, Miswan, Pitopang R. 2017. Ethnobotany study on the traditional ritual processes of the Saluan Tribe in the Pasokan Village, Tojo Una-Una District. Biocelebes 11 (1): 46-60. [Indonesian]

Rahyuni, Yniati E, Pitopang R. 2013. Ethnobotany study of the ritual plants of the Tajio Tribe in Kasimbar Village, Parigi Moutong Regency. J Nat Sci 2 (2): 46-54.

Sinaga LY, Rustaman NY. 2015. The values of local wisdom of the Anakdalam Tribe in Jambi Province on field in the Bukit Duabelas National Park forest as a source of biology learning. The XII National Seminar on Biology Education, Faculty of Teacher Training and Education, Universitas Sebelas Maret, Surakarta. [Indonesian]

Silalahi M. 2016. Ethnomedicin study in indonesia and approachesthe research. Journal Dinamika Pendidikan 9 (3): 117-124. [Indonesian]

Silalahi M, Jatna S, Walujo EB, Nisyawati. 2015. Local knowledge of medicinal plants in sub-ethnic Batak Simalungun of North Sumatra, Indonesia. Biodiversitas 16 (1): 44-54.

Silalahi M, Nisyawati. 2019. An ethnobotanical study of traditional steam-bathing by the Batak people of North Sumatra, Indonesia. Pac Conserv Biol 25 (3): 266-282.

Silalahi M, Nisyawati. 2015. The ethnobotany of pasak bumi (*Eurycoma longifolia*) in the Batak ethnicity, North Sumatra. Pros Sem Nas Masy Indon Biodiv 1 (4): 743-746.

Sulasmi IK, Nisyawati, Purwanto Y, Fatimah S. 2012. Jernang rattan (*Daemonorops draco*) management by Anak Dalam Tribe in Jebak Village, Batanghari, Jambi Province. Biodiversitas 13 (3): 151-160.

Suswita D. 2013. Studi Ethnobotany and Forms of Plant Preservation Efforts used in Kendo Sko Rituals in Some of Kerinci District, Jambi. [Thesis]. Postgraduate Program of FMIPA, University of Andalas, Padang. [Indonesian]

Takiddin. 2014. The values of local cultural wisdom of the Orang Rimba (study of the Rimba ethnic minority in Air Hitam Sub-district, Jambi Province). Sosio Didaktika 1 (2): 161-170. [Indonesian]

Takoy DM, Linda R, Lovadi I. 2013. Medicinal plants of the Dayak Seberuang Tribe in the f orest of Ensabang Village, Sepauk Sub-district, Sintang. Protobiont 2: 122-128.

Wakhidah AZ, Silalahi M, Dimas HP. 2017. Inventory and conservation plant of *oke sou* traditional ceremony; A welcoming tradition of maturity girl on the community of Lako Akediri Village, West Halmahera, Indonesia. Biodiversitas 18 (1): 65-72.