

## **Kuthomoro tradition: Using its potential ethnobotany for biology learning resources**

**Hendro Kusumo Eko Prasetyo Moro\*, Nida Dwi Handayani, Ayu Fitria**

Universitas Ahmad Dahlan, Jl. Ahmad Yani, Tamanan, Banguntapan, Bantul, DIY  
55191 Indonesia

\*Corresponding e-mail: kumoromoro@gmail.com

### **Abstract**

Ethnobotany is the study of plants from the point of view of local residents who still hold traditions from generation to generation. Kuthomoro tradition is a praying tradition to the ancestor by Karaton Yogyakarta, one of the kingdoms in Indonesia that still stands until today. The tradition largely uses plants as the ritual equipment, however, the research about the use of Kuthomoro context as a learning resource for senior high school biology learning is still limited. This study aims to determine the types of plants and the symbolic meanings used in the Kuthomoro tradition in the ancient tomb of Giriloyo and Imogiri. This study also identified the potential resources of biology learning for 10<sup>th</sup>-grade senior high school. It was a qualitative research, involving 6 respondents from *juru kunci* (the key keeper) and *abdi dalem* (Kingdom's employee) of Giriloyo and Imogiri tomb. The objects of this research are flowers and traditional dishes called *ubarampe* usually used for offering in Kuthomoro tradition. We used observation, in-depth interview, and documentation to collect the data, and used descriptive technique for the data analysis referring to Djohar's criteria to study the potential biology learning sources. The results showed that there were 44 types of plants used in Giriloyo and 50 types of plants used in Imogiri for the *ubarampe* offering purposes. The symbolic meaning of the plants used in this tradition is a prayer and wishes that the ancestors' sin would be forgiven and get a better condition in the afterlife. The various types of plants used in both tombs can be used as a resource for senior high school biology learning.

**Keywords:** ethnobotany, Kuthomoro tradition, learning resources.

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## **INTRODUCTION**

Yogyakarta is one of the cities in Indonesia which has status as a special region. Its government is run by the *Karaton Ngayogyakarta Hadiningrat*, the Kingdom of Yogyakarta, where the kingdom still maintains local wisdom that has ancestral values for generation to the moment. The community is still maintaining and preserving local culture, such as the tradition of Kuthomoro. Kuthomoro tradition is the envoy from the Karaton to send offerings to carry out the activities of *Sadranan* or *Nyadran*, an offering tradition for the ancestors. In Javanese society, any tradition is a means to establish relationships with various aspects involved in human life (Atmosudiro, 2010; Asmemare et al., 2015; Koentraningrat, 2004). The community joined the tradition which aimed to pray for his ancestors. That is why the region is always crowded during the festival (Ronald, 2014).

Kuthomoro's tradition was carried out in the month of *Ruwah*, one of the months in Hijri calendar right before the Ramadan fasting month. In this month,

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the society commonly hold the Sadranan festival. Like the common society, the Kingdom of Yogyakarta also carried out the similar tradition called Kuthomoro, which usually carried out by the Kingdom's employee called *abdi dalem*. The activities carried out during the festival usually includes praying, sowing flowers, and offerings in the tomb of Giriloyo (Handayani & Moro, 2021). The Kingdom's ancestors who had been buried in the tomb of Giriloyo include Kanjeng Ratu Pembayun (the wife of Sunan Amangkurat I), Kanjeng Ratu Mas Hadi (the mother of Sultan Agung), Kanjeng Panembahan Juminah (the uncle of Sultan Agung), Kiai Ageng Giring, Kiai Ageng Sentong, and Sultan Cirebon V, who were accompanied by several other figures. All of them are the prominent figures in the ancient Kingdom of Yogyakarta.

Some other Javanese people carry out in the Imogiri tomb site, which is a site of the Sultan Agung's tomb, the famous king of ancient Yogyakarta, and his descendants. Imogiri's tomb site is a cultural heritage built by Sultan Agung in the era of Mataram Islam. The building is still thick with a combination of the Javanese-Hindu tradition. The authenticity of the building is proof that when Islamic culture and Java-Hinduism unite and packed in various traditions by Javanese people (Iskandar, 2016; Ristanto et al., 2020; Rosidin, 2019).

Based on the preliminary survey to the community, in the Kuthomoro tradition, people usually bring *ubarampe* to be used as an offering. *Ubarampe* sometimes consist of folwers, offerings, and other complementary materials. *Ubarampe* utilizes several types of plants. The plants used in *uborampe* for Kuthomoro tradition have its own symbolic meaning but it is not known by the community (Sujarwo, 2023). This ethnobotany study will provide an overview of the procession of Kuthomoro tradition in the Javanese community especially in the grave of Giriloyo and Imogiri tomb sites. Plants used in the procession of Kuthomoro tradition in the tomb of Giriloyo and Imogiri will be analyzed because of the meaning and philosophy of the use of these plants have not yet understood. Meanwhile, the plants used in both tombs usually shared similar meaning. According to Purnomo (2013), Javanese people usually use plants and developed them for various usage: the material use, such as for food (Khofifah et al., 2020; Triyono, 2013), drugs (Fitriyani et.al., 2022; Adiyasa & Meiyanti, 2021), cosmetics (Azhari, 2018; Gunawan, 2019), building materials (Wartika, 2013), and others; and for religious spiritual use (Achmad, 2019; Albar, 2017) or conservation (Astuty & Hizbaron, 2017; Iswandono et al., 2015). Plants have become a symbol of hope, dream, and prayer. In addition, plants also become a symbol of the messages of ancestors containing noble character.

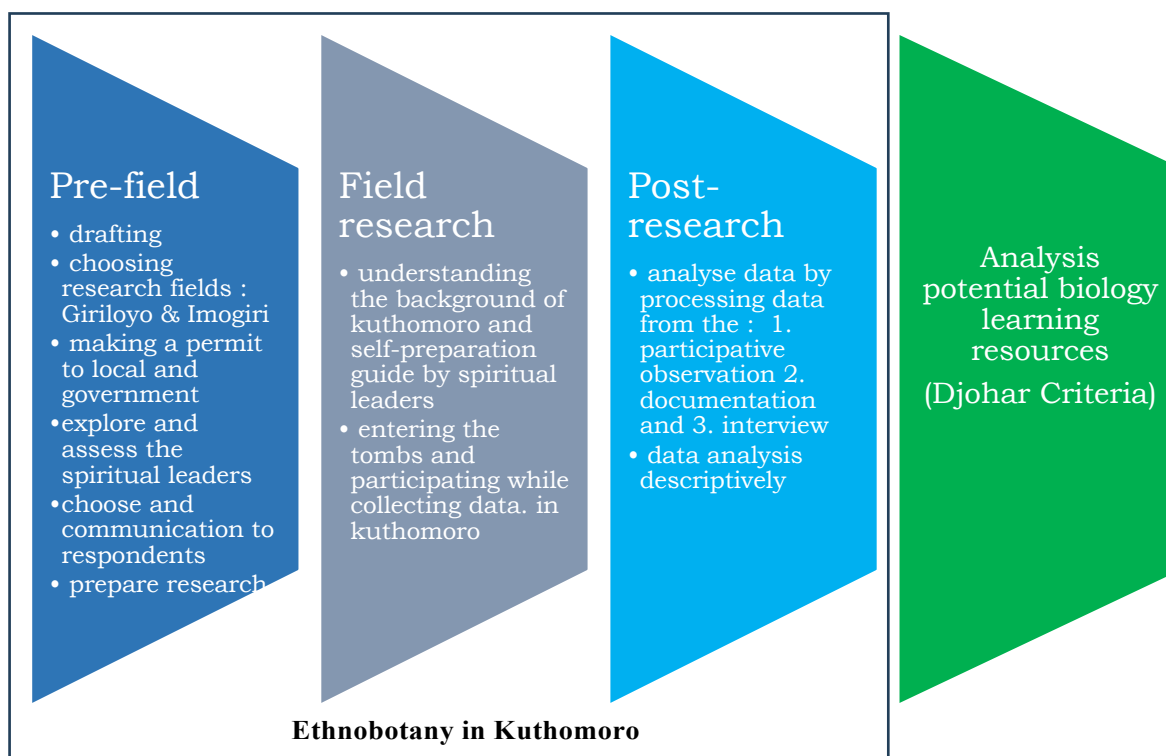
This research aims to determine the types of plants in the Kuthomoro tradition in the tomb of Giriloyo and Imogiri, the philosophical meaning, and identify the potential sources for biology learning in Grade X senior high school. Biology learning sources outside of school enable learners to explore nature and their surrounding environment, and thus directly experience real objects that exist therein (Khanifah et al., 2012; Syamsudduha & Rapi, 2012; Mustika & Rahmi, 2019). We hope that the results of this study can be used as new insights to introduce local culture in the surrounding environment.

## RESEARCH METHOD

The research method of this research is qualitative research (Sukmadinata, 2009). The research was conducted at the Tomb of Giriloyo and the Tomb of Imogiri, located in the southern part of Yogyakarta. The sample used was 6 respondents from the *juru kunci* (key keepers) and *abdi dalem* (spiritual leaders) of those tombs. This research started from October 25<sup>th</sup>, 2019, and then paused

due to Covid-19 pandemic, and continue again to April 9<sup>th</sup>, 2025. The observations conducted, whether at certain moments of cultural activities, once in a year.

The research procedure uses three stages, namely pre-field research, field research, and post-field research. The pre-field stage is a stage where research must consider research ethics by conducting several stages, namely drafting, choosing research fields, making a permit to conduct research, explore and assess the field, choose and use respondents, prepare research equipment by making research permits, observation instruments and interview that have been validated. The stage of this field research that must be done there are 3 parts, namely understanding the background of research and self-preparation, entering the field, and participating while collecting data. The post-research stage in the form of analysis of results. This analysis of results is an activity in the form of processing data obtained from the documentation and interview results. Data analysis in this study was conducted descriptively.



**Figure1.** Steps of ethnobotany research in Kuthomoro for Biology learning resource

Descriptive analysis is a data analysis to describe the results of data obtained during research. Collecting data based on groups, namely flowers and dishes (plants) prepared or used in Kuthomoro tradition in the tomb of Giriloyo, as well as the meaning of the philosophy. The study of potential biology learning resources referred to Djohar's opinion. The data learning resources of Biology analyzed according to Suhardi (2012).

## RESULTS AND DISCUSSION

We found 44 types of plant used in the Kuthomoro tradition in the tomb of Giriloyo which came from the *ubarampe* of flowers and offering. Meanwhile, for the results of the plant data used in the procession of the Kuthomoro tradition

at the tomb of the Imogiri, we found 50 types of plant. Based on the species data used in the tradition, they are categorized into 24 families. Most of them are from the families of Musaceae, Papilionaceae, Gramineae, and Zingiberaceae. Supriani et al. (2023) and Andriani, et al. (2021) declare Zingiberaceae as the most important family in ethnobotany. According to Pranoto (2009), in Javanese culture, *ubarampe* is used as a means that can bring and convey ideas or views of life of people who have culture.

### Benefits and meaning of plants in Kuthomoro tradition

The *ubarampe* in Kuthomoro's tradition usually consists of flowers and other offerings. The meaning behind the use of plants in the tradition is as follows.

#### Flowers

The flowers used in the Kuthomoro tradition at the tomb of Giriloyo and Imogiri can be categorized into 6 types. We found their meanings as described in Table 1.

**Table 1.** Meanings of flowers used in Kuthomoro tradition at the Tomb of Giriloyo and Imogiri

Flowers	Giriloyo	Imogiri
<i>Rosa damascena</i> Mill. and <i>Rosa alba</i> L.	The meaning of red roses humans must act good; white roses means that humans should do good but not ask for a reply or resignation.	Roses both red and white are diverse nature and desires of every human being.
<i>Jasminum sambac</i> (L.) Aiton.	Melati comes from the word <i>lathi</i> which means the tongue, that means humans if you say good or bad they will return to him.	The meaning of sincerity and simplicity in humans
<i>Cananga odorata</i> (lam.) Hook.f. and Thomson	The meaning of Kenanga is to commemorate the services of a dead man.	Kenanga is commemorating or remembered on good behavior from ancestors.
<i>Michelia alba</i> DC.	The meaning of Kantil comes from the word <i>kumantil-mantil</i> which means to remember the dead person.	Cempaka Putih and Cempaka Kuning means still remember and maintain relationships with ancestors through sending prayers.
<i>Ocimum basilicum</i> L.	Telasih, comes from the word <i>Wes Telas Asih</i> , which means that it has been delighted and the affection of humans who have died because they have faced Allah SWT.	As much as meaningful love for fellow human beings.
<i>Styrax benzoin</i> dryand		This plant only used in Imogiri tomb. They come from the word <i>kutug</i> , which means I have arrived to pray for the spirit of the Sultan Agung along with the tomb of the other kings.

The flowers were used for sowing on the tomb of the ancestors who were believed by the *abdi dalem* as a form of wisdom. Sowing flowers on the tomb have the meaning that the dead man will be lightened to his sin and relieve from

the torment of the grave before the flower is dry. According to the *abdi dalem*, the flowers can be used as *wangian* because the flower has a fragrant aroma. Pratama & Muhajirin (2022) report that *melati* flowers used as an ornament. *Kenanga* and *cempaka* used in traditional ceremonies generally has a fragrant aroma because it contains essential oils that are easily evaporated (Supinah, 2006). In addition to flowers and offerings, there is also honey, incense, candles, perfume, and envelopes containing money IDR 10,000 used side by side with the flowers during the Kuthomoro tradition at the tomb of Giriloyo.

In the Kuthomoro tradition at Imogiri's tomb, we found 8 types of plant used, but only 6 plants have symbolic meaning. However, only one does not have a symbol due to the mixed aroma of incense. The meaning of the 8 food offerings that utilize plants for food procession, as follows.

#### *Kuthomoro offerings*

Kuthomoro offering is specially cooked by the female *abdi dalem*. When cooking and preparing the offerings, they cannot be in menstruation period to ensure that they are in a holy condition. Before cooking, they would perform ablution first. Cooking in a tradition or ceremony is a sacred activity, which aims to make sure that the host will be successful. They believe that cleanliness is important such that their offerings will be accepted by God (Puspita, 2018; Bangunjiwo, 2019; Hadisutrisno, 2009).

*Sego Golong*; comes from the statement "*golong gilig bandol kemompok guyub*", which means harmony is strong. The purpose of the symbolic is the union with determination and accompanied by harmony and togetherness will strengthen the community.

*Sego Ambeng*; has a symbol as a prayer for the entire family to be given protection by God, especially for the family left behind, the large family of the palace, and the achievement of the desired hope and ideals. The form of the *sego ambeng* is a round which means the intention of giving donation.

*Sego Kebuli*; forming round shape to show how the mother's process carrying a baby to childbirth. The purpose of the symbol as long as the baby in the womb will experience turnover before giving birth, the position above will then rotate down. This is interpreted as life will continue to spinse, sometimes above and below.

*Sego Ingkung*; meaning that humans should not only be sanctized by the chance but need to work hard and worship God, because when they die, only good deeds will be carried to the afterlife.

*Tumpeng Robyong*; having a symbol of all *abdi dalem* to be mixed in harmony in peace. Tumpeng is the rice formed a cone shape. Tumpeng is interpreted as a position that all human position has the same degree, even though it has a high and low rank. The type of tumpeng has possibilities to comodification as *Ngaras* and *Ngibakan* in Sundanese community (Sidik et al., 2021).

*Tukon Pasar* is various foods, drinks, or fruit obtained from all directions such as *Lor* (the north), *Kulon* (the west), *Kidul* (the south), *Wetan* (the east), and *Tengah* (the center). Food or drinks that come from the whole direction are expected to maintain the safety of the host.



(a)



(b)



(c)



(d)



(e)



(f)



(g)



(h)



(i)

**Figure 2.** Uborampe Kuthomoro: (a) Sego Golong; (b) Tumpeng Punar; (c) Sego Kebuli; (d) Sego Inkung; (e) Tumpeng Robyong; (f) Sego Ambeng; (g) Tukon Pasar; (h) Pisang Sanggan; (i) Coconut and Palm Sugar.

*Pisang Sanggan*, is a pair of bananas, have a symbol as a support or bear together. The purpose of the symbol of the banana is that the responsibility of the host has been carried together so that the prayer can be achieved smoothly.



*Coconut and Palm Sugar*, has a symbol so that the entire community that follows the tradition can be at peace of their heart and can remember good deeds to always implement it. While coconut fruit is a part of coconut plants that can be utilized so that during life must be useful for many people (Ramdianti et al., 2013; Nurhayati et al., 2014). All the food offerings are illustrated in Figure 2.

### **Analysis of Biology learning resources**

The descriptive study of Djohar (Suhardi, 2012) was examined in accordance with criteria as which takes into account the: clarity of potential and availability of the objects and raised problem; conformity with learning objectives; clarity of targets and purposes of the material; clarity of information to be revealed; clarity of exploration guidelines, and clarity of benefits to be achieved.

#### *Clarity of potential availability of objects and raised problem*

Based on the results of the research, the availability of objects obtained are the types of plants, as well as the biodiversity available at the research location of the Kuthomoro. The problem raised in the research results is the potential that exists around the research location that can be used as a source for high school biology learning (Handayani & Moro, 2021). These potentials include the types of plants used in the tradition, the use of plant parts, as well as the biodiversity of flora, fauna, and ecosystems available at the Kuthomoro location.

#### *Conformity with learning objectives*

Learning objectives are determined based on the Indonesian 2013 curriculum which is based on basic competencies. The analysis of learning resources in the results of this study uses more than one basic competence, namely analyzing various levels of biodiversity in Indonesia and their threats and conservation; and grouping plants into divisions based on general characteristics, and relates their role in life (Pemerintah Provinsi DIY, 2011).

#### *Clarity of target material and purposes, plant material, and their designation*

The target material in this study is material on biodiversity and plant material. The target designation of this research is Grade X senior high school students, where they have entered the age of 16-17. Students at the age of 16-17 can build their own knowledge. Therefore, to build this knowledge can be done through the process of observation (Handayani & Moro, 2021).

#### *Clarity of information to be revealed to research results to be disclosed*

The information obtained in the results of this study is shown to achieve the basic competences of the 2013 curriculum as a learning resource. The data obtained are the types of plants used in the tradition, the use of plant parts, and the symbolic meaning of the offerings used in the tradition, and information on biodiversity, such as species, genes, and ecosystems (Handayani & Moro, 2021). The biodiversity at the Kuthomoro is the form of conservation by various related parties as reported by Iswandono, et al. (2015).

Based on the research results obtained with the learning, the results of this study are in accordance with the learning objectives on the Grade X biodiversity material. Hafida et al. (2020) making herbarium for clearly information related. This is also reported in Fauzy and Asy'ari (2020), that the appropriate learning objectives are because the results of the study show that there are levels of diversity (species, genes, and ecosystems), threats to the existence of biodiversity at the Kuthomoro, and the existence of conservation efforts in the form of conservation from various parties including the Tourism

Office, the Environment Service, the Natural Resources Conservation Center (BKSDA), and the Cultural Conservation Preservation Center.

According to Irnaningtyas (2013) and Tjitrosoepomo (2013), the plant material must include three divisions, namely Bryophyta, Pteridophyta, and Spermathophyta. The results of the study were not able to classify plants into three divisions so that the learning objectives were not sufficient for the needs of students in classroom learning, therefore students needed additional learning resources in the classroom learning process.

#### *Clarity of exploration guidelines*

Exploration guidelines can be carried out by means of students directly visiting locations that can be used as sources of biology learning, conducting interviews with various existing sources, making observations regarding things that can be used as learning resources, and being able to document the potentials that exist on the Kuthomoro. Students can also explore the objects they learn about the types of plants, the use of plant parts, and the biodiversity that exists at the Kuthomoro Site. According to Syamsudduha and Rapi (2012), students can observe various kinds of plants, so that students can find out the types of plants they observe.

#### *Clarity of benefits to be achieved*

It was observed at the research site that the closest high school from Imogiri and Giriloyo tomb. The gain to be achieved from the study conducted is that the results are expected to be applicable to biology learning in the school, so as to enhance the students' abilities in the cognitive, affective, and psychomotor domains (Handayani & Moro, 2021).

## **CONCLUSION**

This research indicates the similarity of Kuthomoro's tradition in the tomb of Giriloyo and the tomb of Imogiri. It is because the organizers, the Kingdom of Yogyakarta, did not distinguish these traditions even though the tomb was different. The type of plants used in the Kuthomoro tradition in the tomb of Giriloyo has 44 types of plants, while there are 50 types at the tomb of Imogiri. The symbolic meaning of plants used in Kuthomoro's tradition in both Giriloyo and Imogiri's tombs is a good prayer and hope that the ancestors' sin can be forgiven and given a better place by God. Nature provides many benefits in human life, so humans must take care of nature together. The results of the study can be used as a source of senior high school biology learning.

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