



## Ethnobiology in the *gumbregan maheso* tradition of the East Javanese People, Indonesia

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### ABSTRACT

The *Gumbregan Maheso* tradition became the main source of ethnobiological study. The tradition is related to people's indigenous knowledge in utilizing livestock. The study aims to identify types of animals and the meaning of the *gumbregan maheso* ceremony in Banyubiru village, Widodaren Sub-district, Ngawi Regency, Indonesia. The research uses a qualitative descriptive method to deeply describe ethnobiological values of the *Gumbregan Maheso* tradition of the East Javanese people using a purposive sampling technique and snowball sampling. Data is collected through semi-structured interviews with 15 informants, consisting of traditional leaders, farmers, and communities involved in the implementation of the tradition. The research results show that the type of animals used in the *Gumbrega Maheso* tradition is a buffalo and *ingkung* chicken to serve alongside offerings, such as *polo pendem*, *ketupat*, and *lepet*. The ceremony is intended to express gratitude for the gift of a healthy and reproducing animal.

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## INTRODUCTION

Indonesia is a very prosperous country in various ways, including natural resources and cultural diversity in all areas of the Unitary State of the Republic of Indonesia (Linawati, 2019; Susanto et al., 2021). Additionally, it is diverse in races, languages, and civilizations. Diverse areas in Indonesia have different customs based on the locations, geography, environment, and local people's mindset (Purwaningrum & Ismail, 2019). Indonesian people, consisting of thousands of tribes, develop local wisdom based on their local environmental characteristics (Albar, 2017; Ulfa et al., 2023)

Ethnobiology is a multidisciplinary field of study using approaches and methods from both social and biological sciences (Alves & Albuquerque, 2016). Ethnobiology aims to explore biological phenomena and culture-based biology, environmental knowledge, cultural perceptions and cognition of nature, and things related to behaviors and practices (Pieroni et al., 2005; Medeiros, 2020). Ethnobiology is an interaction between local communities and their environment (Albuquerque & de Sousa, 2016). A scientific study of ethnobiology focuses on interactions between humans and biodiversity, including local wisdom and knowledge (Purwanto, 2020). The focus of ethnobiology is on how plants and animals are used or managed and perceived in human societies, and it includes plant and animal products used for foods, medicines, prophecies, cosmetics, dyeing, textiles, residents, tools, currencies, clothes, rituals, social lives, and music (Sreedevi et al., 2013). The relationships between plants and animals and human cultures are not limited to the use of plants as food, clothes, but also their use for religious ceremonies and ornaments (Schultes, 1992).

The research focuses on examining the relationship between the *Gumbregan Maheso* tradition and ethnobiological values contained therein. The *Gumbregan Maheso* tradition, as one of the forms of local wisdom of the Javanese agrarian society, represents a harmonious relationship between humans, livestock, and the natural environment (Dewi, 2022; Turner et al., 2022). In the context of ethnobiology, the current study will highlight how traditional knowledge of the community regarding livestock, especially buffalos (*maheso*), is interpreted and passed down through cultural rites, such as *Gumbregan*. The focus of the problem is how the *Gumbregan* practice reflects indigenous knowledge systems in maintaining the sustainability of cultural and natural ecosystems amidst challenges from modernization and social changes (Iskandar, 2017).

Traditional rituals, as an activity that reflects Javanese culture, must be maintained and preserved by upholding the wisdom of the people regarding customs that have been believed in and followed for a long time (Ma'rufa, 2023; Sekartaji et al., 2021). Likewise, the people of Bulakpepe hamlet, Banyubiru village in Ngawi, East Java, Indonesia, hold a cultural tradition of the *Gumbregan Maheso* (Hinaryatiningsih, 2016; Susanto et al., 2021). The celebration is a form of respect and gratitude to God for the blessing of buffalo breeders and for the existence of buffalo to help people in cultivating their land through plowing the rice field. The culture is a legacy from the ancestors and preserved by local people to establish relationships and harmony with one another (Rodhiyah & Sabardila, 2022).

Problems occurring in ethnobiology through the *gumbregan maheso* tradition are the decreasing people's participation in the ritual practices and the shift in values. It brings consequences to the eroded indigenous knowledge of traditional ecological systems and animal husbandry. The meaning and symbolic functions of the *gumbregan maheso* ritual, the ethnobiology of a buffalo (*maheso*), and its preservation require further studies. According to a study by Rachman (2020), *gumbregan* is interpreted by traditional breeder society in East Java as a sign of gratitude to God and a form of respect for working animals. A buffalo is believed to be an integral part of an agricultural life cycle. Meanwhile, Prasetyo and Lestari (2022) conducted an ethnobiological study that indicates an increase in the industry-based technical approaches. Direct interaction and rituals that are previously used to gain indigenous knowledge of anatomy, behaviors, and maintenance of buffalo are decreasing. The approach fails to consider the cultural and ecological values of local communities. Therefore, it is imperative to carry out a comprehensive study on these variables to determine the extent to which the *Gumbregan Maheso* tradition serves as a means of preserving ethnobiological knowledge in the context of East Java's ever-changing culture. The *Gumbregan Maheso* tradition is a traditional ceremony with buffalos or *maheso* as its center. The tradition is passed down from generation to generation from the ancestors of the Banyubiru village community. (Mahardhani & Cahyono, 2017). The community considers the *Gumbregan Maheso* traditions to contain cultural values (Susanto et al., 2021).

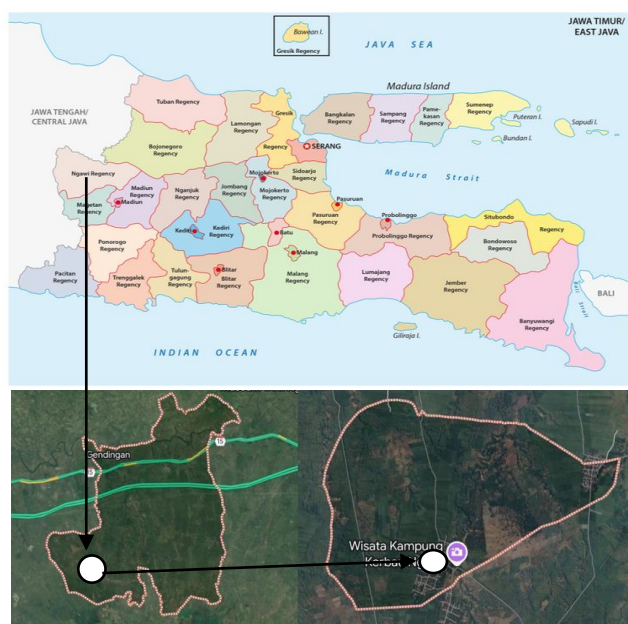
The research is essential to be conducted to illustrate the community understanding of protecting and being involved in animal conservation. Ethnobiology in ethnozoology studies the utilization and management of animal diversity related to community cultures, ethnic groups, or tribes (Iskandar,

2017). Therefore, the research explores ethnobiology In the *Gumbregan Maheso* tradition by people of Bulakpepe hamlet, Banyubiru Village, Widodaren Sub-district, Gnawing district, Indonesia.

## METHODS

### Research Design

The research type was qualitative descriptive research (Rodhiyah & Sabardila, 2022). Data collection techniques included observations and interviews with traditional leaders and the community. The anthropological approach used was ethnography, a research approach that is more closely related to anthropology and cultural events, which reflect the perspectives of the community, and ethnolinguistics, a study that connects linguistic concepts related to culture in the local community (Kabani et al., 2023; Anjarwati, 2020). Anthropology itself is related to humans, communities, and culture holistically including origins, physical forms, customs, and beliefs (Susanto et al., 2021). The research was carried out from December 2024 to April 2025 in Bulakpepe Hamlet, Widodaren Sub-district, Ngawi District, East Java Province, Indonesia. The research location is indicated in Figure 1.



**Figure 1.** Research Location

### Participant

The data collection techniques used were purposive sampling and snowball sampling techniques. The sample criteria were individuals who have deep knowledge about information on types of animals and the meaning of the ceremonial rituals of the *Gumbregan Maheso* tradition. Informants who became the research samples consisted of 15 people: the head of Banyubiru village (1 person), the head of BPD of Banyubiru (1 person), the head of Bulakpepe hamlet (1 person), the head of neighborhood association (RT) of Bulakpepe Hamlet (3 persons), Bulakpepe villagers (9 persons) as presented in Table 1.

**Table 1.**

Data of Informant.

No	Name	Age	Occupation
1.	S (informant 1)	51 years old	Entrepreneur (BPD)
2.	H (informant 2)	82 years old	Farmer (elders)
3.	W (informant 3)	44 years old	Head of Bulakpepe Hamlet
4.	S (informant 4)	56 years old	Farmers (Head of RT 05 of Bulakpepe)
5.	S (informant 5)	74 years old	Farmer
6.	S (informant 6)	69 years old	Farmer
7.	S (informant 7)	57 years old	Farmer
8.	S (informant 8)	62 years old	Farmer
9.	S (informant 9)	55 years old	Odd Jobs
10.	S (informant 10)	66 years old	Farmer
11.	S (informant 11)	58 years old	Farmer
12.	T (informant 12)	73 years old	Farmer

No	Name	Age	Occupation
13.	K (informant 13)	65 years old	Laborer and farmer
14.	D (informant 14)	55 years old	Farmer
15.	Y (informant 15)	45 years old	Farmer

### Instrument

The instruments consisted of focused interviews in various aspects, encompassing several indicators as referred to by Dirhamsyah & Elia (2022). These aspects include the meaning of the ritual ceremony, the background of the ritual, stages in the ritual ceremony, types of animals and offerings used in the ritual ceremony, the meaning and philosophy contained in each stage of the ritual ceremony, the important cultural values in the ritual ceremony, and the meaning of the ritual ceremony.

### Procedure

The data collection involved semi-structured interviews with informants regarding the types of animals and the meaning of the ritual ceremony of the *Gumbregan Maheso* tradition among the indigenous people of Bulakpepe in Banyubiru Village, Widodaren Sub-district, Ngawi District, Indonesia. Next, direct observation and documentation in the research location aimed to gain information related to culture, community values, and rituals during the implementation. Information from the observation and documentation was used to provide additional information in the interview stage.

### Data Analysis Techniques

The data were analyzed descriptively and qualitatively. The analysis was based on data of informants' knowledge of types of animals, parts used, and the meaning of the ceremony of the *Gumbregan Maheso* tradition. Documentation was in the form of cultural activities and organizations used by the community in its culture. The interview results were then analyzed, referring to relevant literature from both books and research articles.

## RESULTS AND DISCUSSION

### Background of the *Gumbregan Maheso* Tradition

Based on the results of an interview with Sugiyono (December 30, 2024), the background of the *Gumbregan Maheso* tradition started from the ancestors' era where farmers did not use tractors but buffaloes to plow their fields. The buffaloes helped farmers to plow the field; therefore, they were rested or treated as a king by applying *blondo* oil (pure coconut oil) to overcome their fatigue. People in the Bulakpepe Hamlet conduct a *bancakan* event to perform the tradition. According to Alim (2022), the tradition has a meaning of a relationship between an object and its symbol. Certain cultures in Java areas have experienced the development of acculturation along with various existing cultures. Diverse, unique cultures exist due to different cultural elements that contribute to the formation of various forms and patterns of Javanese society. This is related to the non-identical socio-cultural conditions of a society.

The interview results with Kasun (December 30, 2024) indicate that the *Gumbregan Maheso* tradition is also called the birthday of buffalo or "*selametan*" in the Javanese language. The tradition is an expression of gratitude from the buffalo breeders to God for the continued survival of their livestock and their ability to meet the needs of the local village located in the Bulakpepe hamlet (Rodhiyah & Sabardila, 2022). The tradition is carried out due to a myth believed by the community. Alim (2022) defined a myth as a story that provides certain directions or guidance to an individual or a group. It means that the people of the Banyubiru Village, Bulakpepe Hamlet, assume that they are encouraged to perform *selametan* or animal charity to the livestock that live in the world, including buffalo. This is a form of gratitude to God's blessings and gifts in the form of livestock, namely healthy buffaloes whose sustainability is maintained, and they reproduce, as well as fertile soils for farmers and shepherds. Even today, some Javanese people are still unfamiliar with abstract thinking, which is carried out entirely through symbols. The symbol in question is a prominent cultural element and one of the characteristics of Javanese culture. Symbols are the representation of Javanese customs and habits, which are passed down from generation to generation, such as the *Gumbregan Maheso* tradition of livestock *selametan*.

The interview results with Sukardi (December 31, 2024) suggested that up to now, some people in the Bulakpepe hamlet still believe the myths.

People believe that shepherds have certain spiritual or mystical superiorities. The belief occurs due to shepherds who are considered to have special "knowledge" or abilities that people in general do not have. This belief arises from the view that herding activities not only involve physical skills but also spiritual elements or supernatural powers that are believed to protect and influence the surrounding environment.

There is a belief in the community that when boys or girls under five years old experience cancer sores, they will be taken to a shepherd for treatment. The shepherd will then blow on the child's body parts, and it is believed that the blowing will cure the disease. This practice reflects the community's belief in the special abilities or "knowledge" of a shepherd in curing diseases, especially those experienced by children.

Shepherds in the area often wear a *caping* (a traditional hat) made from teak leaves or pandan leaves. According to the local belief, *caping* made from natural materials has the power to protect the shepherds from lightning strikes. This belief has become a part of hereditary traditions that indicate how natural elements are used not only as physical protection, but also as a spiritual protection tool in the daily life of a shepherd.

While herding buffaloes, the shepherds carry a tool in the form of a buffalo necklace known as *klothak*, which is attached to the neck of the buffalo. The necklace not only serves as a sign, but it is believed by the local community to have a special ability to help find the presence of scattered or lost buffaloes. Specific sound produced by *klothak* when the buffaloes move is considered to facilitate the shepherd in tracking the position of their livestock; therefore, the tool has a crucial value in practice as well as in the context of local belief.

### The Implementation Stages of the *Gumbregan Maheso* Tradition

Based on the interview results with Hadi Suroto (January 02, 2025), the *Gumbregan Maheso* tradition is carried out in the field of RT 01 Bulakpepe Hamlet, Banyubiru Village, Widodaren Sub-district, Ngawi Regency, East Java. The tradition is conducted in the Islamic month of Muharram, especially on the *Pahing* (Javanese calendar) Friday, by people who have raised (*ngingu* or *angon*) buffaloes. The time of the *Gumbregan Maheso* tradition is on the night of *Pahing* Friday after *maghrib* (evening). The implementation of the ritual is divided into two stages, namely the preparation of the offerings and the main event of the tradition. The offerings have a meaning of bringing many benefits and survival for the community.

According to the results of the Interview with Sugiyono (December 30, 2024), Offerings prepared include *ingkung* chicken rice, *polo pendem* (cassavas, sweet potatoes, and so on), and *Empon-empon* (corn or produce, such as *uli*, which is a food from sticky rice). The offering starts in the afternoon by feeding the buffaloes after returning from herding. At night, the buffalo owners will start the main procession of the *Gumbregan Maheso* with various rituals. Kuncoroyakti (2018) states that ritual is everything related to beliefs with certain goals. It is one of the communication methods in social life.



**Figure 2.** a) Feeding process; b) Buffalo necklace tool (*klothak*); c) *Kenthongan* (wooden gong); d) *Bancakan* (feast).

Based on the results of an interview with Sugiyono (December 30, 2024), at this stage, the buffalo owner will perform various rituals, namely feed the buffaloes and put on the buffalo necklace (*klothak* from wood). However, several communities do not put the buffalo necklace. A buffalo necklace is a necklace used by the buffalo that is made from wood. It serves as a sign when the buffalo are being herded in the forest (Damayanti et al., 2021). Putting a necklace on the buffalo is a form of gratitude from the owner since they have brought benefits in various sectors of agriculture, including assisting in agricultural land, cost efficiency, maintaining and improving soil fertility, and in the economic sector, such as a source of workers and a saving or investment (Sugiyono, 30 Desember 2024).

The interview with Hadi Suroto (January 02, 2025) stated that installing a *kenthongan* or *ntretek* (wooden gong) in front of a house is believed to protect the house occupants and livestock from disturbance by supernatural beings. According to Damayanti et al. (2021), *kenthongan* serves as a musical

instrument as well as a source of entertainment for communities. It produces various musical compositions. It is a communication tool from bamboo that is designed to produce sound through a hole in the center.

According to the interview with Sugiyono (December 30, 2024), after *maghrib time*, the shepherds invite several people around their house to do the *bancakan* or *selamatan* (feast). The shepherd and several people come to a place, which is a field in the RT 01 of Bulakpepe Hamlet, Banyubiru Village, led by a prayer by the traditional leader. Some of them bring traditional snacks from the market, or *ingkung* chicken rice, *ketupat*, and *empon-empon*. The event usually lasts for an hour. If there are leftovers, people will bring them home.

*Bancakan* of *nasi tumpeng* (cone-shaped rice), which is identical to an important celebration, is presented with various side dishes, such as *polo pendem* and traditional snacks on a large bamboo stretcher (Rodhiyah & Sabardila, 2022).

Sugiyono (December 30, 2024) and Hadi Suroto (January 02, 2025) stated, in their interview, that the *Gumbregan Maheso* or night of *Pahing* Friday tradition has been conducted for generations by the ancestors of the people of Bulakpepe Hamlet Banyubiru Village. Because the tradition has been conducted since their ancestors, there are some differences in the way people carry out the tradition from the past and at present, namely:

- 1) *In the past, there was no nasi tumpeng, whereas now, nasi tumpeng is used in the ritual.*
- 2) *In the past, each house carried out the bancakan event; however, now the bancakan event is held in one place, including the buffalo*
- 3) *In the past, the tradition was conducted once a year, whereas now it is conducted by several breeders, and it depends on each person's beliefs.*

Changes in the value and meaning in the community are indicated by changes in beliefs and implementation of customs from the past to the present. In the past, *nasi tumpeng* was not known in traditional ceremonies. However, at present, *nasi tumpeng* has become part of the tradition and is replacing the form of previous offerings. This mirrors the cultural adaptation to the times, where new symbols are created to replace the old form, which is starting to be abandoned, although it has the potential to shift the original spiritual meaning. Additionally, the implementation of tradition in the past was individually in every house; however, at present, it tends to be conducted collectively in one place. These changes provide efficiency and strengthen cooperation, although they reduce the roles and responsibilities of a family as the main actor of the tradition. The tradition was previously sacred and personal, now it has become a more social and public event. The frequency of the implementation of tradition, in the past, was routinely conducted every year; but now it is experiencing a decline, where it is only carried out by a small portion of society who still hold fast to the old beliefs. These changes indicate that the implementation of the tradition is now more subjective and depends on everyone's beliefs, thus reducing cultural uniformity and sustainability.

### Types of Animals Used

The results obtained from the interview state that *Gumbregan Maheso* is taken from the word "*maheso*", which means buffalo. The *Gumbregan Maheso* tradition is identical to buffalo (*B. bubalis*); however, there is another type of animal, which is chicken, as a complement. Types of animals used include mud buffalo (*B. bubalis*) and broiler chickens (*G. gallus*).



**Figure 3.** a) Mud Buffalo (*Bubalus bubalis*); b) Broiler Chickens (*Gallus gallus*), source: [chickin.id](http://chickin.id).

Mud buffalo (*B. bubalis*) is a ruminant animal (twice digested) that is of low quality and survives (Brata et al., 2021). One of them is a domestic buffalo, which is a mud buffalo (*B. bubalis*). The number

of mud buffalo in Indonesia is around 95% and the remaining 5% is river buffalo (Sukri, 2021). Mud buffalo (*B. bubalis*) has specific characteristics of horns that curl backwards, a solid, sticky, and full body shape, grayish black skin color, white legs with unique characteristics, and unique morphometrics, making it an essential species in livestock and agriculture (Supartini, 2022). Mud buffalo (*B. bubalis*) is found throughout Asia. The animals are domesticated from wild buffalo (known as *arni* by the Indians) and are widely spread in Pakistan, India, Bangladesh, Nepal, Bhutan, Vietnam, China, Philippines, Taiwan, Indonesia, and Thailand. Buffalo can be stated as Asian livestock due to their global population of 158 million, with 97% of the population in Asia (Primandhita et al., 2014).

Based on the interview results with Sugiyono (December 30, 2024) and Kasun (January 01, 2025), the distribution of mud buffalo (*B. bubalis*) in Indonesia is wide, especially in areas that have rivers and rice fields. There are mud buffalo farmers in the Bulakpepe hamlet, Banyubiru village, Widodaren sub-district, Ngawi district, East Java. This area is known for the large population of mud buffalo. This village is also called “Buffalo Village” since almost all its population are buffalo breeders. It is estimated that the number of buffaloes in the village is more than a hundred, with each family owning 10 to 30 buffaloes. Mud buffalo (*B. bubalis*) is a type of buffalo used as working livestock (Hasanah, 2021). They provide substantial benefits for farmers and breeders since buffalo farms are a vital part of livestock development to support agricultural development in rural areas, such as Bulakpepe hamlet (Setiawan, 2022).

Broiler chickens (*G. gallus*) are one of the superior chicken varieties as a result of a crossbreeding of poultry breeds, especially those that are productive in meat production (Supartini, 2022). Broiler chickens have characteristics of fast growing, efficient use of rations, short harvest time, soft-fiber meat production, very good meat build up, and smooth skin (Londok et al., 2017). In the context of animal tradition or culture, broiler chickens (*G. gallus*) often play a role in certain traditions or customary ceremonies, especially in Indonesia. For example, broiler chickens are often used in customary ceremonies of *Gumbregan Maheso* tradition and other religious holidays, such as Eid al-Fitr, Christmas, and New Year, as part of rituals or complementary dishes (Deze & Ngiso Bhae, 2021). In addition to buffalo and chicken, there are several offerings in the tradition, as listed in Table 2.

**Table 2.**  
Several offerings in the *Gumbregan Maheso* tradition

No	Local Name	Species	Part used	Ethnobiological Study
1.	Padi	<i>Oryza sativa</i>	In the making of <i>ketupat</i> . The part of the paddy used is the rice.	It represents spiritual values and the agricultural cycles of agrarian society
2.	Kelapa	<i>Cocos nucifera</i>	In the making of <i>ketupat</i> . The part used is young coconut leaves ( <i>janur</i> ).	The embodiment of weaving skills and a symbolic value in culinary arts
3.	Kacang tanah	<i>Arachis hypogaea</i>	In the making of <i>lepet</i> (traditional snack). The part used from peanuts is the seed, namely peanuts that have been peeled from the outer skin (pod skin)	A source of vegetable protein processed in traditional culinary dishes.
4.	Singkong	<i>Manihot utilissima</i>	In the making of <i>polo pendem</i> . The part of the cassava used is the root tuber.	A crop that can survive reflects the food security of rural communities.
5.	Ubi jalar	<i>Ipomea batatas</i>	In the making of <i>polo pendem</i> . The part of the sweet potato used is the root tuber.	The agricultural heritage of traditional communities that rely on local foods.
6.	Gembili	<i>Dioscorea esculenta</i>	In the making of <i>polo pendem</i> . The part of the plant used is the stem tuber (rhizome).	A scarce plant that is now preserved as a traditional food heritage.
7.	Gadung	<i>Dioscorea hispida</i>	In the making of <i>polo pendem</i> . The part of the plant used is stem tuber.	Local traditional science in tuber detoxification indicates local wisdom.
8.	Talas	<i>Colocasia esculenta</i>	In the making of <i>polo pendem</i> . The part used is the stem tuber (corm).	A multipurpose tuber used in culinary and medicine.

No	Local Name	Species	Part used	Ethnobiological Study
9.	Jahe	<i>Zingiber officinale</i> Rosc	In the making of <i>empon-empon</i> . The part used is the rhizome.	Ginger plants reflect a traditional medicinal system that synergizes with the food system.
10.	Kunyit	<i>Curcuma longa</i>	In the making of <i>empon-empon</i> . The part used is the rhizome.	Turmeric plants reflect a traditional medicinal system that synergizes with the food system.
11.	Temulawak	<i>Curcuma xanthorrhiza</i>	In the making of <i>empon-empon</i> . The part used is the rhizome.	Javanese ginger plants reflect a traditional medicinal system that synergizes with the food system.
12.	Kencur	<i>Kaempferia galanga</i>	In the making of <i>empon-empon</i> . The part used is the rhizome	Aromatic ginger plants reflect a traditional medicinal system that synergizes with the food system.
13.	Lengkuas	<i>Alpinia galanga</i>	In the making of <i>empon-empon</i> . The part used is the rhizome	Galangal plants reflect a traditional medicinal system that synergizes with the food system.

### ***Inkung Chicken***

*Inkung* is a whole chicken cooked with certain ingredients. *Inkung chicken* is a Javanese special dish in the form of whole chicken cooked with thick coconut milk ingredients and presented in a sitting position (the chicken's knees bent backwards), resembling the position of *tawadhu*, which is one of the positions in Islamic prayer (shalat). In the Islamic Javanese community, *ayam ingkung* is often used as a symbiosis between local tradition and Islamic values, especially in the rituals of almsgiving or thanksgiving (*tasyakuran* or *selamatan*). Therefore, *ingkung* is an essential element in the *selamatan* (thanksgiving) event such as the *Gumbregan Maheso* tradition. In the ethnobiological study, *ingkung chicken* reflects the utilization of local chickens (*G. gallus*) in the context of traditional rituals. The symbolic meaning of the livestock is that chickens are not only the source of protein but also spiritual media, indicating indigenous knowledge of animals that is passed down from generation to generation in traditional rituals (Islaini et al., 2024; Sumardi, 2021; Iskandar, 2017).

### ***Ketupat and Lepet***

*Ketupat (kapat)* is a dish made from baked rice with woven coconut leaves. *Kapat* is a representation of someone who is able to control their lust (Maghfiroh & Biduri, 2022). The word "*ketupat*" or "*kapat*" is a synonym of a Javanese saying "*ngaku lepat*", which means admitting mistakes. This saying contains the meaning that everyone has made mistakes towards other people (Sriyana & Suprapti, 2024). *Ketupat* in Islamic-Javanese society is not only a culinary dish, but it also contains a deep religious, philosophical, and social meaning. It reflects a combination of Islamic values and Javanese local traditions, such as in the *lebaran ketupat*, a symbol of confession of sin and togetherness. In the ethnobiological context, *ketupat* indicates how communities utilize and interpret natural resources, such as coconut (*Cocos nucifera*) and paddy (*Oryza sativa*), functionally and symbolically, indicating the interconnection between humans, nature, and spirituality (Misbahuddin, 2018; Arif & Lasantu, 2019; Supriyati et al., 2017).

*Lepet* is an Indonesian traditional dish made from a mixture of sticky rice, grated young coconut, coconut milk, peanuts, and a pinch of salt. The mixture is covered with young coconut leaves or *janur* (Javanese language), according to certain patterns, and tied with bamboo string or "*tutu*" (Wardana et al., 2023). *Lepet* is not only a traditional snack, but also an important symbol in Javanese culture that has experienced acculturation with Islamic values. In the religious practice, such as *selamatan* or *lebaran*, *lepet* symbolizes togetherness, apology, and social solidarity according to Islamic thought. From the perspective of ethnobiology, *lepet* reflects local knowledge of Javanese people in utilizing natural resources sustainably, such as the use of sticky rice (*Oryza sativa glutinosa*), peanuts (*Arachis hypogaea*), and coconut leaves/*janur* (*Cocos nucifera*). The making of *lepet* passed down from generation to generation indicates local wisdom in maintaining a harmonious relationship between humans, the environment, and spirituality. Therefore, *lepet* represents a meeting point between culinary tradition,

religious values, and ecological knowledge of the Islamic Javanese community (Werdingisih, 2022; Widayanti, 2008; Darmastuti *et al.*, 2024; Salsabila *et al.*, 2024).

### **Polo Pendem**

*Polo pendem* is a term in the Javanese community referring to various tubers that grow underground, such as sweet potato (*Ipomoea batatas*), cassava (*Manihot esculenta*), taro (*Colocasia esculenta*), *gadung* (*Dioscorea spp.*), and *gembili* (*Dioscorea esculenta*). The word "polo" in the Javanese language symbolizes something spicy or hot, and "pendem" means embedded or hidden (Hudha, 2021). *Polo pendem* has a crucial role in the Islamic-Javanese community as a symbol of spiritual and social values, and as a source of natural resources that are rich in cultural and health values. Whereas, an ethnobiology study examines the relationships between humans and their environment, including how a community uses and understands plants by considering them to have nutritional and medicinal values, and are used in traditional medicine (*Dioscorea spp*) through processing for poisons and therapy (Purnomo *et al.*, 2012).

### **Empon-Empon**

*Empon-empon* has a basic name for *empu*, which is a term used to give a name for a part of plants that are rich in compounds. Thus, *empon-empon* are plants from *Zingiberaceae* used as herbs, functional foods and beverages, medicines, and raw materials for the pharmaceutical industry (Salatalohy, 2023; Abidin *et al.*, 2021). In the context of the Islamic-Javanese community, *empon-empon* is not only utilized as a material for medicine and traditional beverages; it also has a symbolic role in various religious rituals, indicating a harmonious integration between local traditions and Islamic values. In the perspective of ethnobiology, however, *empon-empon* became part of traditional, ecological knowledge passed down from generation to generation. An ethnobiological study on *empon-empon* includes aspects of species identification, utilization, preservation, and their influence on public health. Moreover, ethnopharmacological research provides evidence on the numerous species of *empon-empon* that contain useful bioactives; therefore, it supports the scientific values of indigenous knowledge (Wakhidah & Sari, 2019; Hatta & Safira, 2021).

### **The Meaning of Gumbregan Maheso Traditional Ceremony**

The meaning of the ceremony in Bulakpepe Hamlet, Banyubiru Village is as an expression of gratitude for the healthy and reproductive buffalo (*B. bubalis*) livestock or *maheso*, and they become one of the economic life supports of the community (Susanto *et al.*, 2021). According to Darman (January 10, 2025) the meaning of the ceremony for buffalo (*Bubalus bubalis*) is due to the buffalo that assist farmers in plowing the ricefield; therefore, the ceremony is conducted in their *weton* (the birthday in Javanese calendar) so that they are healthy and can reproduce. Buffalo has become a vital object or characteristic of tradition. Along with technological advancement, the role of buffalo (*B. bubalis*) in field cultivation has been replaced by tractor. However, in the cultural and economic contexts, buffalo, at present, is considered more as a symbol of future saving and valuable investment, reflecting local wisdom that remains preserved even though times continue to develop.

### **CONCLUSION**

Types of animals used in the *Gumbregan* traditional ceremony are buffalo. The animal is believed to be a strong symbol in tradition. The community also uses complementary dishes from various organisms in the tradition. The organisms include *ingkung* chicken (*G. gallus*), coconut *ketupat* (*Cocos nucifera*), paddy (*Oryza sativa*), sticky rice *lepet* (*Oryza sativa glutinosa*), peanuts (*Arachis hypogaea*), and young coconut leaves or *janur* (*Cocos nucifera*). Tubers or *polo pendem* such as cassava (*Manihot utilissima*), sweet potato (*Ipomoea batatas*), taro (*Colocasia esculenta*), and *empon-empon*. The meaning of the ritual ceremony of *Gumbregan maheso* tradition is a manifestation of gratitude to the blessing from Allah SWT. The conservation attitude of the community to the buffalo includes reproducing and helping the community in agriculture by plowing the rice field; therefore, the *Gumbregan maheso* ritual is to celebrate the birth of the buffalo.

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