

Ethno-pharmacology of the Tengger Tribe Society: Inventory Study of the Use of Medicinal Plants

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Abstract

The Tenggerese community is a community that inhabits the area commonly called "Tengger village". The community trust of the Tengger Tribe towards Mount Bromo and Mount Semeru is very large, so that it has created a close relationship between the people of Tengger Tribe and nature. The ethnobotany study is expected to not only be a documentation of traditional knowledge in the use of plants for subsequent generations, but also as one of the capital in the development and preservation of biological natural resources, especially for the use of traditional medicines in the Tengger tribe. This research is qualitative research. The results of the study indicate the occurrence of the Tengger Tribe Knowledge, Beliefs and Local Wisdom Inventory in Probolinggo Regency, with the decline in Tengger tribe knowledge and belief in the nature and benefits of medicinal plants. This was caused by the success of the health program by the government so that many residents took advantage of modern medicine when they were sick, Tengger Tribe who lived in Lumajang Regency showed the use of plants in every religious or cultural ritual or treatment, based on the teachings of their ancestors which is often done in the community around the informants from generation to generation. The Tengger tribe who lives in Pasuruan Regency shows that the rituals have been carried out from generation to generation and there are no special rituals when using the medicinal plants. The perceptions, attitudes and behavior of the community regarding the Tengger tribe medicinal plants in Probolinggo Regency showed a mediocre attitude because they had rarely used it as well as other forms of behavior, namely informants had not used the medicinal plants anymore, except for a few the older ones in the remote Tengger Mountain. In Lumajang, the type of traditional medicine in the Tengger tribe is actually still perceived and responded to quite positively by informants doing treatment in the traditional way within certain limits. However, they are more open to the patterns of modern medicine, especially among the younger generation. In Pasuruan Regency, residents perceive medicinal plants as plants that can treat a disease that they know from their ancestors before. Inventory of medicinal plants in the Tengger tribe domiciled in Probolinggo Regency there are at least 3 types of plants that are still used for medicinal purposes in the face of health problems such as red ferns, fennel and saffron plants. Whereas in Lumajang Regency uses include sugar cane plants, dlingu plants and banana plants for cases of health problems. The use of medicinal plants in Pasuruan Regency includes: dringu plants, black mustard greens, fennel, besides that there are also castor plants, muscle flour, ciplukan fruit, amethyst plants and ganjan plants.

Keywords: *Ethno-pharmacology, Tengger Tribe, Society, Inventory Study, Medicinal Plants.*

Introduction

Indonesia is a country that is diverse and rich in culture. There are around 159 different ethnic groups that inhabit thousands of islands scattered throughout the archipelago. Indonesia is one of the largest biodiversity countries in the world so that it is known as a mega-biodiversity

country [1]. There are approximately 40,000 types of plants used in the economic, spiritual, cultural values, health, beauty and even treatment of diseases [2]. This diversity of knowledge is one of the riches of Indonesian culture that must be maintained to be developed. In general, people who still

adhere to the traditional knowledge of their ancestors are traditional societies, namely people whose lives are influenced by prevailing values and influence the interpretation and views and values of trust in people's knowledge and experience [3]. One of the traditional societies that still holds strong to the customs of their ancestors is the Tengger Tribe. The Tenggerese community is a community that inhabits the area commonly called "Tengger village". They occupy villages in the 4 regencies which are predominantly Hindu and still adhere to Tengger customs.

The villages in question are Ngadas, Jetak, Wonotoro, Ngadirejo, and Ngadisari (Sukapura District, Probolinggo District), Ledokombo, Pandansari, and Wonokerso (Sumber Subdistrict, Probolinggo Regency), Tosari, Wonokitri, Sedaeng, Ngadiwono, Podokoyo (Tosari District, Pasuruan Regency), Keduwung (Puspo District, Pasuruan Regency), Ngadas (Poncokusumo Subdistrict, Malang Regency), and Argosari and Ranu Pani (Senduro District, Lumajang Regency).

The Tenggerese community is known as a formidable traditional farmer, living in groups in the hills not far from their farms. Cold temperatures make them feel at home working in the fields from morning to evening [4]. The community trust of the Tengger Tribe towards Mount Bromo and Mount Semeru is very large, so that it has created a close relationship between the people of Tengger Tribe and nature. The Tenggerese community has long used natural resources, especially plants as a fulfillment of living needs; the high tourist activities in the Bromo Tengger Semeru National Park area, with various things brought by tourists can influence the lifestyle of the Tengger Tribe.

Ethnobotany is a science that can be used as a tool to document the knowledge of traditional communities that have used various benefits of plants to support their lives. Plants are used as life support for food needs, building materials, traditional ceremonies, culture, coloring materials, and also medicine [5]. The ethnobotany study is expected to not only be a documentation of traditional knowledge in the use of plants for subsequent generations, but also as one of the capital in the development and preservation of biological natural resources,

especially for the use of traditional medicines in the Tengger tribe.

Methods

This research was a case study. The research was conducted on the Tengger Tribe which inhabited the area called "Tengger village". They occupy villages in the 4 regencies which were predominantly Hindu and still adhere to Tengger customs. The villages in question were Ngadas, Jetak, Wonotoro, Ngadirejo, and Ngadisari (Sukapura District, Probolinggo Regency), Ledokombo, Pandansari, and Wonokerso (Sumber District, Probolinggo District), Tosari, Wonokitri, Sedaeng, Ngadiwono, Podokoyo (Tosari District, Pasuruan Regency), Keduwung (Puspo District, Pasuruan Regency), Ngadas (Poncokusumo District, Malang Regency), and Argosari and Ranu Pani (Senduro District, Lumajang Regency).

The informants in this study were the Tengger tribe who had the knowledge and use of botanical resources for their daily needs and who had the knowledge and use of plants as medicines. The technique used in determining informants is snowball sampling.

The data sources used by researchers were primary data sources sourced from the results of interviews and observations and secondary data sources sourced from literature, research results, tengger tribal scientific journals and online news. The instruments used in data collection were key researchers, field notes, recording devices that use cellphones, and digital cameras which were hard instruments and interview guidelines and direct observation sheets which are soft instruments.

Results

Identification of Socio-Culture and Tradition of the Tengger Tribe Medicine

Local Wisdom in Utilizing Plants for the Treatment of the Tengger Tribe in the Probolinggo District

The use of medicinal plants is no longer used by the community, for the following reasons:

- Hanges in habits, there is a feeling of prestige and society feels old-fashioned when using plant

- Along with the changing birth process assisted by traditional birth attendants, midwives are now doing. Shamans only help bathe and care for babies. The prohibition of dukuns gives any ingredients from midwives because it is feared that the plants given are poisonous. This made the people not dare to make the plants as medicine anymore, there were cases of very high infant mortality rates, on average the people who had 11 children then only 5 who lived healthy, who had 8 children living 4 who lived healthy. This is learning for the community so that the community must give birth with the help of a midwife.
- People consider drugs to be a quick way, health facilities have been provided by the government, when people get sick they go directly to the village midwife
- The community combines treatment, for sick people it is not natural for the community to consult with traditional healers first. After the traditional healer ensured that the wind disease (witchcraft) the community went straight to the village midwife. Likewise, traditional healers always advise people to go to midwives when they are sick. For the community midwives function as doctors.
- In 1986, more or less the community stated that they still use traditional plants and ingredients as medicine, when their great great grandparents for example.
 - Spread the red distance applied when bitten by wasps
 - Fennel is pounded and placed on the skin with hives
 - Sawang (cobwebs) affixed to the injured skin.

Local Wisdom in Utilizing Plants for the Treatment of the Tengger Tribe in the Lumajang District

The types of traditional ceremonies or religious ceremonies that often use medicinal plants around the Tengger tribe in Lumajang Regency all use plants during traditional or religious ceremonies or even treatment if there are people who suffer from illness. There are medicines that are efficacious, but in general residents have begun to lack understanding of these types of plants.

Utilization of medicinal plants has begun approximately 25 years ago, with residents still using a lot of plants for treatment. Today, many residents who do not understand about the use of plants for medicine due to health promotion by the medical system by the government which is increasingly aggressively and hit the hearts of tengger tribesmen. This results in the majority of residents leaving the use of medicinal plants if there are sick families. One of the factors that influence health behavior is knowledge that can be done in the form of health promotion, through this method the community can increase knowledge and change their behavior [6].

Based on the description, it can be concluded that the forms of local wisdom in the use of plants for the treatment of the Tengger tribe in the Lumajang Regency area were carried out at religious ceremonies, customs and even treatment. Some residents still use nutritious plants for medicine, but in the younger generation there are many who have less understanding.

Local Wisdom in Utilizing Plants for the Treatment of the Tengger Tribe in the Pasuruan Regency Area

The reason for the Tengger tribe domiciled in Pasuruan Regency to carry out traditional or religious ceremonies by utilizing plants in the surrounding environment was influenced by traditional traditions from their ancestors who were always taught continuously in relay to their children and grandchildren. Based on the results of research Jennifer and Saptutyningsih stated that there is an influence between age and the probability of individuals to choose traditional medicine. Where one of the things that influenced it was due to the perception that traditional medicine was an ancestral inheritance that had been carried out since a long time ago which was used as a habit and gave effect to suggestion [7].

The way the tengger tribe implements or disseminates knowledge about medicinal plants to the next offspring is by planting medicinal plants in the home yard and notifying the benefits of each plant to their closest neighbors or relatives, so that this information will automatically continue to grow.

Planting the family medicinal plants in the yard is due to the fact that there are still many vacant land to be utilized, mainly used for medicinal plants as substitutes for modern medicines because they are cheap and easy to obtain [8]. Beliefs or beliefs or values or teachings underlying the Tenggerese people using plants for treatment are derived from traditional hereditary beliefs from ancestors who are always taught to the next descendants. In addition, the types of plants most often used and the reasons why they often use medicinal plants show the following phenomena:

- Plants with seeds (such as beans), are plants that symbolize that everything in the universe comes from seeds, after which it grows into leaves.
- Leafy plants (e.g. gubis, mustard greens, etc.), are plants that symbolize that the leaves are very beneficial for all living things, for example to be eaten and for other living things.

Based on this description, it can be stated that the forms of local wisdom in the use of plants for the treatment of the Tengger tribe in the Pasuruan Regency area are the use of plants for traditional and religious ceremonies. Whereas the Tengger Tribe background utilizes plants in every religious or cultural ritual or that are specific to medicine, based on traditions that are inherited from their ancestors by planting medicinal plants in the yard and giving an explanation of the benefits of these medicinal plants to members their families.

Perception, Attitude and Behavior of Tengger Tribe Related to Medicinal Plants

Perception, Attitude and Behavior of the Community Regarding the Medicinal Plants of the Tengger Tribe in Probolinggo Regency

Informant perceptions regarding medicinal plants show that medicinal plants are plants that can be used to treat people who are sick or affected by disease. This is due to the belief that there are three forms of treatment that can be used as a means to overcome health problems, namely with medicinal plants, medicine stalls, and jampe [9]. while in terms of the attitude of the informants to the surrounding medicinal plants, in general

they showed a mediocre attitude because they had rarely used it as well as other forms of behavior, namely informants had not used the medicinal plants anymore, except for a few people the older ones in the remote Gunung Tengger. Attitude as one of the determinants of treatment selection behavior, is not always the main factor determining behavior. Where attitude requires other factors both from within and from outside to form a behavior.

Perception, Attitude and Behavior of the Community Regarding the Medicinal Plants of the Tengger Tribe in Lumajang Regency

The informant's perception regarding medicinal plants is whether a medicinal plant is efficacious or effective in treating a particular disease, in general the informants answered that they did not know for certain, according to the informants everything would depend on the type of disease suffered, the type of plant or treatment method. There is a belief that there are three types of disease, namely ordinary diseases, magical diseases, and food diseases.

Ordinary disease is a disease commonly suffered by residents such as fever, headaches and headaches that can be cured with medicinal plants and drugs in stalls. Magical illness itself is a disease that occurs as a result of human beings violating a healthy way of life such as madness [10]. But if asked which one is more effective or efficacious between the use of medicinal plants or modern medicines in an effort to treat a particular type of disease, informants generally answer that if it is already severe it should be immediately taken to medical personnel or use modern medicine.

Based on these facts, it can be explained that the types of traditional medicine in the Tengger tribe are actually still perceived and responded to quite positively by the informants and therefore they continue to carry out treatment in the traditional way within certain limits. Nevertheless, the patterns of modern medicine are more open, especially among the younger generation. There is a certain form of plant that is around their neighborhood that functions or can be used to treat people who are sick or suffering from certain diseases, the informant stated that due to the advice of the

local shaman, based on the belief, the informant had begun to be unsure because he had switched to modern medical treatment. This indicates the belief in traditional medicine, which is assumed that human health is influenced by the environment [11].

Perception, Attitude and Behavior of the Community Regarding the Medicinal Plants of the Tengger Tribe in Pasuruan Regency

The informants' knowledge about medicinal plants stated that medicinal plants for the Tengger tribe domiciled in the area of Pasuruan Regency were plants that could treat a disease they knew from previous ancestors. The plants most often used for treatment by informants include:

- Dringu plants, black mustard greens and fennel are usually used when the informant is sick with fever.
- Jatropha, usually used when the informant suffers from gum pain or swelling of the gums
- Muscle flour plants, usually used when informants suffer from gout or muscle soreness.
- Ciplukan fruit plants, usually used when informants suffer from high blood pressure or hypertension.
- Amethyst plants are usually used when the informant suffers from eye pain.
- Ganjan plants are usually used when informants suffer or get nosebleeds.

The involvement of informants in medicinal plants, for example in terms of planting or using or utilizing or selling. According to informants from the Tengger Society, they planted plants that they knew to be medicines in the yard, so that if a family was sick, plants that had been planted in the yard could be directly used as medicine as a first step in treatment. Informants' perceptions of medicinal plants are plants that can treat a disease that they knew from previous ancestors.

In general, traditional medicine does not carry out information literacy to the community but develops word of mouth and considers that what God has provided will guarantee the success of treatment. Based on

the reasons for the informants to keep preserving the use of medicinal plants, it is caused to preserve the ancestral heritage [12]. Based on how to preserve medicinal plants, informants generally do it by planting in their home yards.

Medicinal Plant Inventory and Ritual Treatment in the Tengger Tribe

Medicinal Plant Inventory and Ritual Treatment in Tengger Tribe in Probolinggo Regency

The use of medicinal plants in the Tengger Tribe according to informants began when his great-grandparents were still present which can still be maintained including:

- Red spaced out plants, according to informants their use in the Tengger tribe is usually pounded until smooth, then smeared on limbs stung by wasps.
- Fennel plants, the ingredients of this plant are usually the leaves are ground until smooth, after being finely ground according to informants the use of the Tengger tribe is usually applied to the limbs or skin affected by biduran.
- Sawang or spider web, according to informants, its use in the Tengger tribe is usually directly attached to the injured skin.

Based on this description, it can be concluded that in the Tengger tribe domiciled in Probolinggo Regency there are at least 3 types of plants that are still used for medicinal purposes in dealing with health problems, namely red vanished plants, fennel and saffron plants.

Medicinal Plant Inventory and Ritual Treatment in Tengger Tribe in Lumajang Regency

The types of plants that are efficacious to be used as medicine in the area around the Tengger Tribe residence which is domiciled in Tengger village in Lumajang Regency, either in the form or type and usefulness according to the informant consist of:

- Sugarcane plants, according to the knowledge of sugar cane plant informants, the water can be used to treat coughs suffered by individuals, by burning the

stems after they have been taken to drink by the sufferers.

- Dlingu plants, according to the informants' types of plants, are also used to treat coughs that suffer from individuals by boiling the leaves first, after being cooked by the sufferer.
- Banana plants, especially banana sap, according to the informants' knowledge, are used to clog the bleeding due to cough wounds, by applying banana sap to the wound or around the patient's wound.

Based on the description, it can be explained that the use of medicinal plants in the Tengger tribe which is domiciled in Lumajang Regency area which still survives to be used in cases of health problems including sugarcane to treat cough by burning the stem, dlingu plants to treat coughing by brewing the leaves are then drunk, and the banana plant with the sap can be applied to the wound on the skin in an attempt to clog the wound of the injured person.

Medicinal Plant Inventory and Ritual Treatment in Tengger Tribe in Pasuruan Regency

Some plants that are efficacious to be used as drugs that grow or can still be found and are still often used by the Tengger tribe with a domicile in the area of Pasuruan based on the type and efficacy of these medicinal plants in an effort to cure a sickness or illness suffered by individual Tengger tribes according to informants includes plants as follows:

- Dringu plants, black mustard greens, and fennel are often used by informants if they, their relatives, their neighbors and others are affected by fever.
- Jatropha is used by informants to treat gum pain, usually swollen gums.
- Muscle flour, often used by informants if they, their relatives, their neighbors and others are affected by gout, kesleo.
- Ciplukan fruit, often used by informants if they, their relatives, their neighbors and others affected by high blood pressure (hypertension).
- Amethyst plants are often used by informants if they, their relatives, their

neighbors and others are affected by eye pain.

- Ganjan plants, often used by informants if they, their relatives, their neighbors and others are affected by nosebleeds.

Based on time or at what conditions such as the Tengger Tribe uses or utilizes medicinal plants in daily life, according to informants the medicinal plants are generally used when treatment is carried out or when someone is sick. While the technical or procedure for utilizing medicines in general is done by making or concocting drugs, specifically for plants based on dringu plants, black mustard greens, fennel is generally made like powder, then burned and taken the oil, after which it is applied to the swollen gums, for muscle flour usually used as powder.

Some types of plants that have medicinal properties that are still used to treat various types of disease disorders by the Tengger tribe who reside in the administrative area of Pasuruan Regency include: dringu plants, black mustard greens, fennel, besides that there are also castor plants, muscle flour, ciplukan fruit, plants amethyst and ganjan plants.

Conclusions and Suggestions

Based on the description in the previous chapters, it can be concluded that:

- Inventory of Tengger Tribe Knowledge, Beliefs and Local Wisdom in Probolinggo Regency, in the form of knowledge and beliefs of the Tengger tribe towards the nature and benefits of medicinal plants have begun to decrease. This was caused by the success of the health program by the government so that many residents used modern medicine when they were sick. The Tengger tribe who lives in Lumajang Regency shows that they use plants in every religious or cultural ritual or treatment, based on the teachings of their ancestors which are often carried out in the community around the informants from generation to generation. The Tengger tribe who lives in Pasuruan Regency shows that the rituals have been carried out from generation to generation and there are no special rituals when using the medicinal plants.
- The perceptions, attitudes and behavior of the community regarding the Tengger tribe

medicinal plants in Probolinggo Regency showed a mediocre attitude because they had rarely used it as well as other forms of behavior, namely informants had not used the medicinal plants anymore, except for a few the older ones in the remote Gunung Tengger. Traditional Tengger tribal treatment in Lumajang Regency is actually still perceived and responded to quite positively by informants and therefore they continue to treat the traditional method within certain limits. However, the patterns of modern medicine are more open, especially among the younger generation. Whereas in Pasuruan Regency, residents perceive medicinal plants as plants that can treat a disease they know from previous ancestors. The reason for the informants to continue to preserve the use of medicinal plants, was to preserve their ancestral heritage. Based on how to preserve medicinal plants, informants generally do it by planting in their home yards

- The inventory of medicinal plants in the Tengger tribe domiciled in Probolinggo Regency has at least 3 types of plants that are still used for medicinal purposes in dealing with health problems, namely red ferns, fennel and saffron plants. Whereas those domiciled in Lumajang Regency are used in cases of health problems including sugarcane, dlingu plants and banana plants. For Pasuruan Regency include: dringu plants, black mustard greens, fennel, besides that there are also castor plants, muscle flour, ciplukan fruit, amethyst plants and ganjan plants.

Some suggestions that the authors put forward in this regard include:

- Probolinggo, Lumajang and Pasuruan District Governments should strive to maintain the local wisdom of the Tengger tribe, especially in terms of treatment patterns derived from medicinal plants.
- Further research related to the patterns of local wisdom in the Tengger tribe needs to be continued and developed so that a comprehensive and comprehensive policy can be made regarding the local wisdom of the Tenggerese tribe in the 3 Regencies.

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