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Article

Ethnobotanical Study of Jamu Gendong in the Perspective of the Kulon Pasar Community Jember Kidul Village

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ABSTRACT

Plants have beneficial values for the people of Indonesia. Not a few of the people who use plants as traditional medicine. One traditional medicine that is still there and has been passed down from generation to generation is jamu gendong. The purpose of this research is to describe the local knowledge (ethnobotany) of jamu gendong in the community perspective of Kulon Pasar Jember Kidul village. This research was conducted in Kulon Pasar, Jember Kidul Village, Kaliwates District, Jember Regency. The method used in this research is qualitative, with the takeover technique in the form of purposive sampling technique. In addition, it also uses interview and observation techniques to collect data. The results of this study indicate that the people of Kulon Pasar work as jamu sellers. The jamu gendong sold includes kencur rice, kunci suroh, ginger, tamarind turmeric, and sinom. Plants that are used in the manufacture of jamu gendong include kencur, ginger, lock, green betel, turmeric, and tamarind. There are five types of herbal medicine from the Zingiberaceae family, two types of herbal medicine from the Fabacae family, one type of herbal medicine from Poaceae, and one type of herbal medicine from the Piperaceae family. Parts of the plant used in the manufacture of jamu gendong are pulp, rhizome, leaves and fruit. Jamu gendong which has benefits to improve body health.

INTRODUCTION

Indonesia is a country that has very abundant biodiversity. It is estimated that Indonesia's forests contain as many as 30,000 types of medicinal plants, 940 of which have medicinal properties (Hamidah et al., 2020). Not a few of the people who use these plants in their daily life. The use of plants is also used as part of rituals, such as the use of sowing flowers for the *nyekar* tradition (Magfiroh & Fajar, 2022). In a study conducted by (Laily, 2018) said that the diversity of plant species in Indonesia has various benefits, both as primary needs and secondary needs.

Ethnobotany is the study of the relationship between humans and plants. Ethnobotany describes traditional community knowledge about plants in sustaining life. This knowledge relates to the culture and use of plants, how to use, care for and consider benefits, for example as food and medicine (Fitriana, 2017). Ethnobotanical studies only include knowledge of plant species and their direct benefit value, so that what often becomes the focus of research is the use of plants as a source of food, traditional medicines, fiber producers, and others (Angela, et al. 2023).

The use of plants as traditional medicines is a habit of the Kulon Pasar community, because plants are considered to have their own properties and are more secure than modern medicines. One of the traditional medicines commonly used by the people of Kulon Pasar is herbal medicine. Herbal medicine is a traditional medicine in the form of a liquid drink made from certain plants. This is in accordance with what was written (Permata, 2017) saying that herbal medicine is a concoction that comes from natural plants that are formulated without using chemicals as additives (additional ingredients). The herbal medicine is still an alternative for the Kulon Pasar community, even though there are modern medicines sold on the market. The herbal medicine commonly consumed by the Kulon Pasar community is Jamu Gendong.

Jamu gendong is herbal medicine that comes from leaves, roots which are usually boiled with water, filtered, and can be consumed by drinking for a certain time (Wulandari & Azrianingsih, 2014). The same thing was conveyed by (Kusmawati, W., Purwati, T., & Anugraini, 2020) that jamu gendong is a traditional medicine in liquid form that can be circulated without storage and without a label, where this herbal medicine is made using simple equipment and uses manual labor in its processing. Called jamu gendong, because it is sold or peddled by being carried. The herbal medicine sellers are generally women who usually wear kebaya clothes. The herbs that are often consumed by the people of Kulon Pasar are kencur rice, curcuma, turmeric, sinom, and so on. Jamu gendong is consumed by the people of Kulon Pasar, because this herbal medicine is very beneficial for health, for example relieving aches, fatigue, fresh body, and much more. Herbal medicine not only functions as medicine, but also to maintain body fitness and prevent disease (Army, 2018). Besides that, jamu gendong such as bitter herbs can increase glucose absorption in muscle cells and insulin secretion in pancreatic cells so that it can reduce diabetes in the human body (Hartanti et al., 2023).

Based on the results of interviews with local people in Kulon Pasar, the community still relies on medicines from doctors to treat diseases such as typhoid, diarrhea, aches and pains, inflammation and fever. This is due to several factors, namely the lack of knowledge of the Kulon Pasar community about the benefits of the content of the herbal spices used in the manufacture of herbal medicine. This is in line with research conducted by (Laily, 2018) which states that people are currently starting to rarely use plants directly for treatment, so that it affects public knowledge about plants that are beneficial for health. Another factor is the low level of community consumption of herbal medicine because of the lack of knowledge of the people of Kulon Pasar about plant parts that can be used as ingredients to make herbal medicine. In addition, the negative public view of traditional herbal medicine that is sold mixed with chemicals causes many people to abandon traditional herbal medicine. This is as stated by (Kusuma et al., 2020) in which the public's thinking factor on the issue of a mixture of medicinal chemicals, until the negative effect in herbal medicine causes a decrease in trust and interest in consuming herbal medicine.

In order to improve the level of public health and the preservation of medicinal plants, it is important to conduct an ethnobotanical research so that people can know and use the surrounding plants as traditional medicine. Research on ethnobotany studies of medicinal plants has previously been carried out in Paciran Village, Lamongan Regency by (Ichda

Wahyuni et al,. 2015) in which 58 species of medicinal plants from 21 families were found. The medicinal plants most often used by the community in overcoming several diseases come from the Zingiberaeae family such as turmeric, ginger, kencur, and galangal. It was also confirmed by (Hasanah & Daesusi, 2019) ethnobotany in Bumiayu village, Bojonegoro district, found 61 species from 28 families, the most widely used plant was from the Euphorbiaceae family, while the most frequently used plant was turmeric from the Zingiberaceae family. The ethnobotanical study was implemented in the form of a leaf herbarium as a medium for learning biology.

Based on the above background, it is necessary to conduct a study or research on "Ethnobotanical Study of Jamu Gendong in the Perspective of the Kulon Pasar Community Jember Kidul Village". The purpose of this study is to describe local knowledge (ethnobotany) of herbal medicine in the perspective of the Kulon Pasar community, Jember Kidul Village. The results of this study are expected to be able to provide education or benefits to the wider community, especially the Kulon Pasar environment to maintain the noble cultural heritage of their ancestors, namely traditional medicine in the form of herbal medice.

METHODS

This study used qualitative research methods. According to (Sugiyono, 2015) qualitative research methods are naturalistic methods, because research is carried out only on scientific situations. The sampling technique in this research is using purposive sampling technique. Purposive sampling technique is a where non-random sampling sampling method researchers ensure citing illustrations through method of determining the matching special identity with research purposes (Lenaini, 2021). The data collection technique used is triangulation of data sources by conducting interviews and observations of 2 jamu gendong sellers, the head of the RT, and the local community. Interviews and observations were conducted on Thursday, May 6, 2021 in the Kulon Pasar neighborhood, Jember Kidul Village, Kaliwates District, Jember Regency. The data analysis technique was carried out in four stages, namely data collection, data reduction, data presentation, and drawing conclusions.

RESULTS AND DISCUSSION

The term ethnoscience comes from the word ethnos which means nation and the word science which means knowledge. Ethnoscience can be interpreted as the knowledge possessed by a certain community (Munawaroh et al., 2022). One branch of ethnoscience is ethnobotany. Ethnobotany is a branch of science that studies the use of plants by certain communites. Utilization of plants is not only a mere decorative need, but can also be used as traditional medicines. One of the traditional medicines that use herbal plants is jamu carrying. The use of herbal plants as jamu gendong can be found in the Kulon Pasar community, Jember Kidul village, Kaliwates District, Jember Regency.

Figure 1. Jember Regency Map

The geographical location of the Kulon Pasar neighborhood, Jember Kidul village it self is located in the southwest of Kaliwates sub-district, Jember Regency. The Kulon Pasar neighborhood is located in a complex alley in the heart of Jember Regency. Jember Kidul village is bordered by Sukorambi sub-district, Jember district. Most of the people's livelihoods in the Kulon Pasar environment are vegetable sellers, entrepreneurs and sellers of jamu gendong. From the results of interviews with the herbal medicine sellers in the village of Jember Kidul, it was said that the herbal medicine sellers used herbal plants to make certain herbs. The herbal plants used for herbal medicine can be seen in the following Table 1.

Table 1. Various Types of Herbal Medicine and Their Compositions

Herbal Name	Herbal Ingredients	Local Name	Family	Scientific Name
	Rice	Beras	Poaceae	*Oryza sativa*
Saffron-Colored rice	Galangal	Kencur	Zingiberaceae	*Kaempferia galalanga*
Curcuma	Curcuma	Temulawak	Zingiberaceae	*Curcuma xanthorrhiza*
Kunci Suroh	Temu Kunci	Kunci	Zingiberaceae	*Kaempferia angustifolia*
	Betel	Suroh	Piperaceae	*Piper betle*
Turmeric	Turmeric	Kunir	Zingiberaceae	*Curcuma domestica*
Tamarind	Tamarind	Asem	Fabaceae	*Tamarindus indica*
Sinom	Tamarind	Asem	Fabaceae	*Tamarindus indica*
	Turmeric	Kunir	Zingiberaceae	*Curcuma domestica*

Based on the table above, it can be seen that herbal medicine sellers in the village of Jember Kidul use herbal plants as basic ingredients in the manufacture of herbal medicine. There are 5 kinds of jamu gendong made by herbal medicine sellers in the village of Jember Kidul, namely herbal rice kencur, curcuma, kunci suroh, turmeric asem and sinom. This is line withe the opinion (Wulandari & Azrianingsih, 2014) who explained that the jamu gendong made by herbal medicine sellers in Kromengan sub-district, Malang district included herbs for rice kencur, sinom, kunci suruh, turmeric acid, temulawak, bitters, sari rapet, must be laos, uyup-uyup, and chili puyang. The herbal ingredients used are completely natural ingredients derived from specially formulated herbal plants. From the results of observations found 8 types of herbal plants needed in the manufacture of jamu carrying in the village of Jember Kidul namely rice (*Oryza sativa*), galanga (*Kaempferia galalanga*), curcuma (*Curcuma xanthorrhiza*), kunci (*Kaempferia angustifolia*), green betel (*Piper betle*) , turmeric (*Curcuma domestica*), tamarind (*Tamarindus indica*). This is in accordance with what was conveyed by (Lindawati, L., Amelia, A. R., & Gobel, 2021) where the ingredients that are often used in making herbal medicine, which consist of ginger (50,36%), aromatic ginger (48,77%), and curcuma (39,65%), meniran (13,39%) and noni (11,73%).

Of the 8 types of herbal plants, there are 4 types of herbal plants belonging to the Zingiberaceae family (roots), 1 type of herbal plants belonging to the Fabaceae family (legumes), 1 type of herbal plants belonging to the Poaceae family (rice-leaf), and 1 type of herbal plant belonging to the Piperaceae family (betel-betel). These findings are similar to the results of the study (Dewi, N. K. L., Jamhari, M., & Isnainar, 2017) who said that of the 53 types of medicinal plants from 29 families, it turned out that most of the medicinal plants used as traditional medicines came from the Zingiberaceae family which consists of 9 types of plants namely *Alpinia galanga, Curcuma xanthorihiza, Curcuma zedoaria, Curcuma domestica, Curcuma aeruginosa, Hedychium coronarium, Kaempferia galanga, Zingiber officinale Rasc. Var. rubrum rhizoma, Zingiber purpureum.*

According to (Fernandarisky et al., 2020) Zingiberaceae family is a plant that is mostly found in tropical climates, where this family is a storage place for certain metabolisms. In research (Pratidina, 2017) Fabaceae familiy (legumes) is one of the main and largest families

of dicotyledonous plants. This family has the ability to fix nitrogen directly from the air, because it has a symbiosis with certain bacteria on its roots or stems. Unlike the case in the family Poaceae (grains) which is a flowering family, where the growth rate is very rapid. Having compound flowers that grow at the end of the stem which is generally called the grain is one of the characteristics of the Poaceae family (Susanto, 2017). While the Piperaceae family is spread in the tropics and subtropics, there are about 3,000 species that have a single heart-shaped leaf, usually used as herbal medicine or herbs (A'tourrohman & Ulfah, 2020).

From the results of the interviews, it was found that the herbal medicine sellers in the village of Jember Kidul obtained the recipe for jamu gendong from their ancestors from generation to generation. This is supported by research conducted by (Jannah & Safnowandi, 2018) said that our ancestors had been using traditional medicine naturally for hundreds of years, as evidenced by the ancient manuscripts on palm leaves Husodo (Java), Usada (Bali), Lontarak Pabbura (South Sulawesi), Fiber Primbon Jampi documents, Fiber blended Boreh Wulang Dalem and reliefs of Borobudur Temple showing people concocting medicine (jamu) with plants as raw materials. The herbal medicine sellers in the village of Jember Kidul try as much as possible to maintain the authenticity of the ingredients from their ancestors, without changing the ingredients in the slightest so as not to reduce the efficacy and quality of the jamu gendong. These efforts can be found in the process of making traditional herbal medicine, namely by pounding herbal plants using a mortar, which is then squeezed and filtered to obtain extracts from these herbal plants. In addition, efforts to preserve the herbs carrying herbs can also be found from the materials used.

The herbal medicine sellers admit that the ingredients used in making the herbal medicine are all natural, without the use of any chemicals. Likewise, from the sugar used, the herbal medicine sellers choose to use palm sugar as an ingredient in the herbal mixture to avoid any additional sweeteners contained in artificial sugar. Confirming from the herbal medicine consumers in Jember Kidul, generally there are no side effects after consuming the jamu jendong. However, there are some prohibitions that should not be consumed by consumers, such as pregnant women should not consume jamu kunci suroh. This is in line with opinion (Lanjani, 2016) that many medicinal plants are safe to use or have no side effects, even in excessive amounts. This assumption is not entirely true, because according to the people of Mukapayung, West Bandung Regency, there are several prohibitions against consuming herbal medicine, for example pregnant people. As the herbal medicine seller said, the basic ingredients used in the manufacture of the herbal medicine are generally purchased at the market, where each purchase of these ingredients costs around Rp. 150,000 for every time you shop. The purchased raw materials can only be used for about 3-4 days. These raw materials are not immediately made into jamu gendong. However, which part of the plant can be used as herbal medicine. The parts of herbal plants used as herbal ingredients by the people of Jember Kidul can be seen in the Table 2.

Table. 2 Utilization of Parts of Herbs as Basic Ingredients for Making Jamu Gendong

Herbal Name	Herbal Plants Used	Plant Parts Used
Saffron-colored rice	Rice	Grain
	Galangal	Rhizome
Curcuma	Curcuma	Rhizome
Kunci Suroh	Kunci	Rhizome
	Green Betel	Leaf
Turmeric Tamarind	Turmeric	Rhizome
	Tamarind	Fruit
Sinom	Tamarind	Leaf, Fruit
	Turmeric	Rhizome

From the table above, it can be seen that the sellers of jamu gendong in the village of Jember Kidul, do not all use parts of herbal plants as raw materials for herbal medicine. However, the herbal medicine sellers only use some parts of the herbal plants as raw materials for their jamu gendong. Parts of plants that are often used by herbal medicine sellers as the main ingredients of herbal medicine are grains, rhizomes, leaves, and fruit. This is in line with what was written by (Laily, 2018) explaining that the plant organs used as raw materials for herbal medicine in Nguter District, Sukoharjo Regency, Central Java are seeds, stems, rhizomes, bark, leaves, fruit, fruit peels, and tubers. For the most part, the herbal medicine sellers take their herbal ingredients from the rhizome part of herbal plants, such as the raw materials for jamu kencur, jamu temulawak, jamu kunci suroh, turmeric asem, and jamu sinom. In a study conducted by (Istiqamah, I., Hiola, S. F., & Karim, 2019) rhizome is the embodiment of the stem and its leaves which are in the soil, branched and grows horizontally, from the tip can grow shoots that appear above the ground.

In addition, the rhizome contains active compounds, flavonoids, sapoins, and essential oils that can be used as medicine. So it is not surprising that the herbal medicine seller uses the rhizome as a raw material for his herbal medicine. Other parts of herbal plants that are also used in the making of herbal medicine are the grains, leaves and fruit, as is the case in the manufacture of herbal rice kencur which uses the grain part of the rice plant, jamu kunci soruh uses the leaves of the green betel plant, and the manufacture of jamu sinom whhich utilizes the leaves and fruit of the tamarind plant. This is clarified in the research (Dianto et al., 2015) leaves are part plants that are widely used as traditional medicine. In addition, leaves are where the products of photosynthesis accumulate presumably contain organic matter elements which has curative properties. Substances that are found in abundance in the leaves are essential oils, phenols, potassium compounds and chlorophyll. This is supported research by (Yayu Nurul Hizqiyah et al., 2016) that leaves are organs that grow faster than other organs so that their existence does not depend on the season, especially in evergreen plants. It was confirmed in research (Mulyani, Y., Hasimun, P., & Sumarna, 2020) that the use of the leaf parts of this medicinal plant is one of the conservation efforts of medicinal plants. The use of leaves as medicine does not have a negative impact on plant survival.

According to the herbal medicine sellers, the rhizome, grain, fruit and leaf parts were chosen because according to their ancestors these plant parts have enormous properties to treat certain diseases. The herbal medicine that is made has its own benefits that can be felt by buyers or the people of Kulon Pasar, Jember Kidul village. The benefits of jamu gendong by the people of Jember Kidul village can be seen in the following Table 3.

Table. 3 The Benefits of Jamu Gendong

Herbal Name	Content	Benefits
Saffron-colored Rice	• Phenolic compounds	• Increase appetite • Treating colds • Increase immunity
Curcuma	• Curcumin flavonoid • Essential oil	• Increase appetite • Treat aches • Treating sore throat
Kunci Suroh	• Phenolic compounds	• Treating flatulence • Overcoming menstrual pain • Treat aches
Turmeric Tamarind	• Curcumin • Vitamins A and C	• Treating pain in the throat Treating heartburn • Reduce heat in the body • Treating typhus • Boost the body's immune

Herbal Name	Content	Benefits
Sinom	• Antioxidant • Antiseptic	• Treating body odor problems • Treating body aches • Treating pain in the stomach due to gastritis • Can lower blood pressure for people with hypertension

From the results of interviews with herbal medicine sellers and some consumers of herbal medicine in Jember Kidul village, it was found that the people of Jember Kidul village use jamu gendong to treat several diseases such as herbal rice kencur to increase appetite. According to the herbal medicine sellers, the content in kencur and rice is very effective for increasing appetite for children and adults and is efficacious for increasing immunity. This is as stated by (Wahyuni, 2020) that the herbal rice kencur has properties to increase the body's immune. According to their ancestors, temulawak herbs have active ingredients contained in the temulawak plant that can increase appetite and warm the body, so that the body aches can be reduced. In addition, ginger is also efficacious for treating wounds on the skin, fever, diarrhea, gastric disease, and constipation (Tanvir et al., 2017). According to (Kusumo et al., 2020) the active ingredients contained in the temulawak plant are curcumin, flavonoids, and essential oils that can be efficacious to help the metabolic process, heal inflammation and smell good. While the active content in the key plant and betel leaf is believed to be able to treat flatulence and overcome aches, not only that, many people in Jember Kidul, especially women, consume jamu kunci suroh to treat pain during menstruation. This is as stated by (Malik et al., 2017) that betel contains phenolic compounds that are non-cyclic which function to overcome female problems and as anti-bacterial.

In addition, the people of Jember Kidul also use the herbal kunci suroh to treat pain in the throat, treat internal heat and fever. In addition, the people of Jember Kidul believe that the turmeric in the turmeric tamarind can treat typhus if the herbs are mixed with earthworms. In research (Kusumo et al., 2020) the active content of curcumin is efficacious to facilitate the digestive process, improve intestinal passage, antioxidant, anti-inflammatory, anti-bacterial, antiviral which functions to increase immunity. Besides that tumeric extract can treat liver demage due to consuming too much alcohol, as the results of a study conducted by (Lee et al., 2022) in wich the administration of tumeric extract to the liver of rats was able to treat liver demage and inflammation caused by high levels of alcohol due to consumption of liquor by increasing GSH levels by increasing glutathione transferase and mRNA, so this tumeric extract can also treat drunken people. Meanwhile, the jamu sinom community of Jember Kidul utilizes the active ingredients in tamarind fruit and leaves and turmeric to treat aches, body odor, treat pain in the stomach and also lowers blood pressure. The same thing also mentioned the benefits of sinom by (Hariyati, 2020) which can avoid various diseases, both from bacteria and viruses, because sinom contains natural antioxidants and also contains antiseptics that can overcome the symptoms of fever.

The herbal medicine seller in Jember Kidul village said that while they were selling herbal medicine, most of the people of Jember Kidul often bought turmeric and tamarind herbs and also kunci suroh. According to the people of Jember Kidul, they buy turmeric and tamarind herbs to treat typhoid and sore throats, while kunci suroh herbs are often used to treat body aches. Associated with the efficacy of the herbs they consume can be felt 2-12 hours after they drink the jamu gendong. The price of one glass of carrying herbal medicine itself ranges from Rp. 2,000 – Rp. 3,000, while the price per bottle is sold at Rp. 8,000, where the community usually buys herbal medicine every week. The people of Jember Kidul continue to consume jamu gendong, even though it has been widely spread in the modern medicine market. Because the community considers jamu gendong to have its own properties, it is practical, and the price is also affordable.

CONCLUSION

The people of Kulon Pasar, Jember Kidul Village, Kaliwates District mostly work as sellers of jamu gendong. The herbs made by the herbalist seller include kencur rice, kunci suroh, temulawak, turmeric tamarind, and sinom. It was found that there were 8 types of herbal plants used in the manufacture of jamu gendong in the village of Jember Kidul, namely rice plants (*Oryza sativa*), kencur (*Kaempferia galalanga*), curcuma (*Curcuma xanthorrhiza*), kunci (*Kaempferia angustifolia*), green betel (*Piper betle*), turmeric. (*Curcuma domestica*), tamarind (*Tamarindus indica*). These ingredients are natural and generally the herbal medicine seller buys the ingredients in the market at a price of around Rp. 150,000 for one time shopping. Where in the manufacture of this herbal medicine, it is pounded using a mortar, then filtered to extract the extract from the herbal medicine. People consume jamu gendong every week and some are according to their needs and desires, where every purchase is given a price per glass of Rp. 2,000-3,000 or per bottle around Rp. 8,000. The Kulon Pasar community of Jember Kidul village believes and maintains to continue to consume herbal medicine, because herbal medicine has its own properties and benefits compared to modern medicines.

REFERENCES

Army, R. (2018). *Jamu Ramuan Tradisional Kaya Manfaat*. Badan Pengembangan dan Pembinaan Bahasa.

Dewi, N. K. L., Jamhari, M., & Isnainar, I. (2017). Kajian Pemanfaatan Tanaman Sebagai Obat Tradisional Di Desa Tolai Kecamatan Torue Kabupaten Parigimoutong. *E-JIP BIOL*, *5*(2), 92–108.

Dianto, I., Anam, S., & Khumaidi, A. (2015). Studi Etnofarmasi Tumbuhan Berkhasiat Obat Pada Suku Kaili Ledo Di Kabupaten Sigi, Provinsi Sulawesi Tengah. *Jurnal Farmasi Galenika (Galenika Journal of Pharmacy) (e-Journal)*, *1*(2), 85–91. https://doi.org/10.22487/j24428744.2015.v1.i2.6237

Fernandarisky, O. N., Mahmudi, A., & Zulfia Zahro', H. (2020). Pengenalan Tanaman Obat Family Zingiberaceae Dan Manfaatnya Menggunakan Augmented Reality Berbasis Android. *JATI (Jurnal Mahasiswa Teknik Informatika)*, *4*(1), 364–372. https://doi.org/10.36040/jati.v4i1.2322

Fitriana, D. (2017). Inventarisasi Tanaman Obat dalam Ramuan Jamu Gendong di Kecamatan Panakukang Makassar. *(Doctoral Dissertation, Universitas Islam Negeri Alauddin Makassar).*

Hamidah, S., Arifin, Y. F., Fitriani, A., Kehutanan, P., Kehutanan, F., Mangkurat, U. L., Inovasi, P., Hutan, M., Basah, L., & Mangkurat, U. L. (2020). Studi Hasil Budidaya Secara Eksitu Beberapa Jenis Tumbuhan Obat Sebagai Pertimbangan Konsep Pengembangan Agroforestri Berbasis Tumbuhan Obat. *Jurnal Hutan Tropis*, *8*(1), 1–15.

Hariyati, N. (2020). *Inom Fresh Herbal Drink Minuman Sehat Bagi Masyarakat Terdampak Pandemic Covid 19*. 45–50.

Hartanti, D., Chatsumpun, N., Kitphati, W., Peungvicha, P., & Supharattanasitthi, W. (2023). The standardized Jamu pahitan, an Indonesian antidiabetic formulation, stimulating the glucose uptake and insulin secretion in the in-vitro models. *Heliyon*, *9*(3). https://doi.org/10.1016/j.heliyon.2023.e14018

Hasanah, I., & Daesusi, R. (2019). Studi Etnobotani Tanaman Obat di Desa Bumiayu Kabupaten Bojonegoro dan Pemanfaatannya Dalam Bentuk Herbarium Sebagai Media Pembelajaran Biologi. *Jurnal Pedago Biologi*, *7*(2), 11–23.

Ichda Wahyuni, H. O. L. Y., Daesusi, I. R., & Amiq Fikriyati, M. P. (2015). Studi Etnobotani Tanaman Obat Tradisional Pada Masyarakat Desa Paciran Kabupaten Lamongan Dan Pemanfaatannya Sebagai Pendidikan Bagi Masyarakat. *(Doctoral Dissertation, Universitas Muhammadiyah Surabaya).*

Istiqamah, I., Hiola, S. F., & Karim, H. (2019). Studi Morfologi Tanaman Sansevieria Di Kota Makassar. *Bionature*, *19*(1).

Jannah, H., & Safnowandi, S. (2018). Identifikasi Jenis Tumbuhan Obat Di Kawasan Desa Batu Mekar Kecamatan Lingsar Kabupaten Lombok Barat. *Bioscientist : Jurnal Ilmiah Biologi*, *6*(1), 1. https://doi.org/10.33394/bjib.v6i1.938

Kusmawati, W., Purwati, T., & Anugraini, A. P. (2020). Pelatihan Pengolahan Jamu Gendong di Kelurahan Mojolangu Kecamatan Lowokwaru Kota Malang. *Prosiding SEMADIF*, *3*(1), 1–5.

Kusuma, T. M., Wulandari, E., Widiyanto, T., & Kartika, D. (2020). Hubungan Tingkat Pengetahuan dan Sikap terhadap Kebiasaan Konsumsi Jamu pada Mayarakat Magelang Tahun 2019. *Pharmacon: Jurnal Farmasi Indonesia*, 37–42. https://doi.org/10.23917/pharmacon.v0i0.10857

Kusumo, A. R., Wiyoga, F. Y., Perdana, H. P., Khairunnisa, I., Suhandi, R. I., & Prastika, S. S. (2020). Jamu Tradisional Indonesia: Tingkatkan Imunitas Tubuh Secara Alami Selama Pandemi. *Jurnal Layanan Masyarakat (Journal of Public Services)*, *4*(2), 465. https://doi.org/10.20473/jlm.v4i2.2020.465-471

Laily, A. N. (2018). Etnobotani dan Upaya Mempertahankan Tumbuhan Bahan Baku Jamu Gendong oleh Masyarakat di Kecamatan Nguter Kabupaten Sukoharjo Provinsi Jawa Tengah. *(Doctoral Dissertation, Universitas Islam Negeri Maulana Malik Ibrahim).*

Lanjani, P. S. (2016). Kajian Etnobotani Tanaman Obat Oleh Masyarakat Desa Mukapayung Kabupaten Bandung Barat. *(Doctoral Dissertation, FKIP UNPAS).*

Lee, H. Y., Lee, G. H., Hoang, T. H., Kim, S. W., Kang, C. G., Jo, J. H., Chung, M. J., Min, K., & Chae, H. J. (2022). Turmeric extract (Curcuma longa L.) regulates hepatic toxicity in a single ethanol binge rat model. *Heliyon*, *8*(9), e10737. https://doi.org/10.1016/j.heliyon.2022.e10737

Lenaini, I. (2021). Teknik Pengambilan Sampel Purposive Dan Snowball Sampling. *Jurnal Kajian, Penelitian & Pengembangan Pendidikan Sejarah*, *6*(1), 33–39. p-ISSN 2549-7332 %7C e-ISSN 2614-1167%0D

Lia Angela, Muhammad Alfian, Anggi Desviana Siregar, I. H. (2023). *Etnobotani Berbasis Kajian Sains Keagamaan*. Adab : CV. Adanu Abinata.

Lindawati, L., Amelia, A. R., & Gobel, F. A. (2021). Perilaku Pemanfaatan Tanaman Obat Tradisional Untuk Peningkatan Imunitas Tubuh di Masa Pandemi COVID-19. *Journal of Muslim Community Health*, *2*(4), 56–63.

Magfiroh, L. U., & Fajar, D. M. (2022). Development of Angiospermal Encyclopedia in the Java Tradition in Kaliwining Village As a Supporting Book for Junior High School Students. *INSECTA: Integrative Science Education and Teaching Activity Journal*, *3*(1), 30–42. https://doi.org/10.21154/insecta.v3i1.3960

Malik, A., Marpaung, L., Simanjuntak, P., & Nasution, P. (2017). Aktivitas Sitotoksik Senyawa Golongan Fenolik Dari Ekstrak Daun Sirih (Piper betle L.). *FITOFARMAKA: Jurnal Ilmiah Farmasi*, *7*(2), 1–6. https://doi.org/10.33751/jf.v7i2.770

Muhammad A'tourrohman, & Malia Ulfah. (2020). Etnobotany Study on the Utilization of Sirih Types (Famili: Piperaceae) in Kalijambe Village, Kecamatan Bener, Purworejo District. *Biocelebes*, *14*(3), 268–278. https://doi.org/10.22487/bioceb.v14i3.15239

Mulyani, Y., Hasimun, P., & Sumarna, R. (2020). (2020). Kajian Etnofarmakologi Pemanfaatan Tanaman Obat Oleh Masyarakat Di Kecamatan Dawuan Kabupaten Subang Provinsi Jawa Barat. *Jurnal Farmasi Galenika (Galenika Journal of Pharmacy) (e-Journal)*, *6*(1), 37–54. https://doi.org/10.22487/j24428744.2020.v6.i1.14106

Munawaroh, Z., Sari, P. K., Pambudi, B. S., & Ekapti, R. F. (2022). Development of the Etintec Student Book (Ethnoscience-Based Interactive Teaching Student Book) As an Interactive Learning Media Based on the Typical Ponorogo Culture on Ecology and Biodiversity Materials. *INSECTA: Integrative Science Education and Teaching Activity Journal*, *3*(2), 158–167. https://doi.org/10.21154/insecta.v3i2.5143

Permata, R. W. (2017). *Eksistensi Jamu Tradisional Dalam Perspektif Sosiologi Komunikasi (Studi Fenomenologi Eksistensi Jamu Tradisional Di Dusun Sukoharjo, Condongcatur, Sleman, Yogyakarta Periode April-Juli 2017)*. Doctoral dissertation, Universitas Mercu Buana Yogyakarta.

Pratidina, R. (2017). Kajian Etnobotani Tumbuhan Obat Oleh Masyarakat Desa Cijambu Di Kabupaten Bandung Barat. *(Doctoral Dissertation, FKIP UNPAS).*

Sugiyono. (2015). *Metode Penelitian dan Pengembangan (Research and Development)*. Bandung: ALFABETA.

Susanto, Y. (2017). Perbandingan Tipe Trikoma Daun Pada Famili Poaceae Melalui Metode Preparat Sederhana Dan SEM (Dikembangkan Menjadi Media Wallchart Jaringan Tumbuhan untuk Pembelajaran Siswa Biologi Kelas XI SMA). *(Doctoral Dissertation, Universitas Muhammadiyah Malang).* www.journal.uta45jakarta.ac.id

Tanvir, E. M., Hossen, M. S., Hossain, M. F., Afroz, R., Gan, S. H., Khalil, M. I., & Karim, N. (2017). Antioxidant Properties of Popular Turmeric (Curcuma longa) Varieties from Bangladesh. *Journal of Food Quality*, *2017*. https://doi.org/10.1155/2017/8471785

Wahyuni, R. E. (2020). Pemberdayaan Usaha Mikro Minuman Jamu Beras Kencur Melalui Pasar Digital di Ranuklindungan, Pasuruan. *DIKEMAS (Jurnal Pengabdian Kepada Masyarakat)*, *4*(2). https://doi.org/10.32486/jd.v4i2.531

Wulandari, R. A., & Azrianingsih, R. (2014). Etnobotani Jamu Gendong Berdasarkan Persepsi Produsen Jamu Gendong di Desa. *Biotropika*, *4*(2), 198–202. https://biotropika.ub.ac.id/index.php/biotropika/article/view/286

Yayu Nurul Hizqiyah, I., Rustama, A., Rahmawati, A., & Sri Melani, D. (2016). Kajian Etnobotani Tumbuhan Obat Oleh Masyarakat Di Desa Nanggeleng Kecamatan Cipeundeuy Kabupaten Bandung Barat. *MANGIFERA EDU: Jurnal Biologi and Pendidikan Biologi*, *1*(1), 27–31.