EXPLORING ETHNOMEDICINE PLANTS USED BY THE INDIGENOUS COMMUNITIES IN TERENGGANU, MALAYSIA: HUMAN HEALTH AND THE ENVIRONMENT

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ABSTRACT

Indigenous community in Malaysia practices traditional medicine, particularly from the surrounding plants to cure different diseases and illnesses. This traditional way of life has been practised for centuries and passed down through generations. This study aims to document medicinal plants that have been used by the Orang Asli to treat illness. A qualitative ethnomedical study was done to document the species that were believed to have medicinal value. This study was carried at all three resettlement villages in Terengganu. Eleven informants who were the head of household with the age of over 30 years old were interviewed. Fieldwork surveys, observation and face-to-face communication were methods used in this study. The finding shows that most of the Orang Asli community in Terengganu are still dependent on plants and herbs to cure ailments. A total of 106 species that belong to 55 plant families were used by them. This study will encourage researchers in various fields such as ethnobotanical, ethnozoological, ethnomedicinal and pharmaceutical and toxicological accomplishment of flora and fauna from these areas. As such, these medicinal plants need some more extensive efforts to validate scientifically and clinically were to prove the ethnomedical claims toward them.

Keywords: Indigenous community, ethnomedicine, traditional knowledge, plants, Terengganu

INTRODUCTION

Herb plants can be defined as small, non-woody shrub, which their leaves can be turned into food, medicine, and fragrance. Herbal medicine is the treatment of diseases that use medicinal plants internally and externally to restore the health of the patient. The medical system associated with the use of nutritious plants has improved the ability of patients to recover and currently being strengthened by scientific advances¹. In Malaysia, this source of traditional medicines is available from all parts of the plant. There are at least 1,158 species of tall plants in Malaysia recorded as having a medical value where 1,075 of them are flowering plants, 75 species of ferns and seven species of gymnosperm families². As the evidence of traditional and complementary medicine, particularly the herbal plants become apparent, the Ministry of Health Malaysia has established a Traditional and Complementary Medicine (TCM) division to enhance quality research on this area and to monitor the use of such TCM therapies so that they are of high quality and safe to be used.

The World Health Organization³ shows that folk medicinal practices all-inclusive with Chinese, Ayurveda by Indian and Greek as well as various forms of traditional medicine. Besides, it commonly refers to complementary and alternative medicine by using various natural resources. This folk knowledge tradition has been widely reported since the British colonial. According to Nordin Lajis⁴, a viable plant is a plant that contains a compound that modifies the physiology of mammal and has been used by humans for this purpose. It is estimated there are nearly 250,000 of these medical plant species where about 60% can be found in the tropical forest.

Plants have multi different functions and use where it providing food, shelter, drugs, timber, wood as well as kitchen fuel especially for vulnerable residents in developing counties.
Besides, it plays a vital role in preserving the ecosystems, maintaining and preserving ecological balance by stabilized the ecosystem. Deniably, plants have been used as traditional medical remedies for centuries. These remedies commonly found within the residencies. However, this ethnomedicinal practice has never been well documented as it is inherited by elders through generation through verbal and hands-on activities. According to Alan, almost 80% of the worldwide community using traditional medicine as an alternative to cure ailments. Thus, it became second and alternative after sophisticated treatment which well used by native people.

The study of tribal knowledge regarding plants is significant toward ethnomedical research. To date, there is adequate literature of ethnomedical understanding of Orang Asli in Terengganu, though there are some reported on other regions in Malaysia. Besides, it faces terrible threats such as ecological globalization and cultural homogenization. Thus, aggressive action has to be done before this precious heritage knowledge lost for good. Therefore, this study attempt to document the traditional medicinal plants that have been used by the Orang Asli in Terengganu. It helps the Orang Asli to conserve their traditional knowledge and practices of medicinal plants as well as natural resources that might be useful for the future generation. The finding of this study will give a big impact on further herbs clinical research due to virtuous health values.

METHODS

Sampling
This is exploratory research carried out at three Orang Asli resettlement villages in different districts of Terengganu, Malaysia (East Coast of Peninsular Malaysia). The exact location of the study site showed in Figure 1. This study was carried out among the Semaq Beri and Bateq tribes in Sungai Berua village, Hulu Terengganu (5° 04′08.5″ N 102°52′19.2″ E); Sungai Pergam village, Kemaman (4.0471° N 103.2859° E); and Sungai Sayap village, Besut (5° 27′22.4″ N 102° 31′17.3 E).

Data Collection
The interviews began with a brief introduction of the researcher team. The purpose was to gain trust and build a good relationship between the researcher and villagers especially the elderly. Thus, they give the information freely and openly as outlined without any barrier. The Focus Group Discussion (FGD) approach was used to gain brief information about their traditional knowledge, surrounding natural environment and identified key informants. Then, the informant was selected as required by purposive sampling technique and interview procedure. Besides that, the snowball approach has also been used during the preliminary study to gather more information from the informants. The sampling technique requires, one informant, suggested the others to become the informant whom he or she believed the next person could give the information regarding the traditional knowledge by using natural resources. The informants gave the information needed verbally and through fieldworks study. Most of the plant's samples were handpicked through direct and participant observation. Furthermore, to assure and reliability of data the informants should be the head of household with the age must be over 30 years old as they are experienced and knowledgeable. They were questioned individually by a set of semi-structured interview.
with the assistance of the Department of Orang Asli Affair’s officer and the headman (Tok Batin). Besides, it is easier for the researcher to get clear information and verify the fact instantly with the existence of local authorities because some of the informants used Orang Asli language and their accent to give the information needed besides the Malay language where it is used as an intermediate language. The collected data were analysed by cross-checking and referring to the Malaysia Biodiversity Information System (MyBIS) for an accurate plants list.

RESULTS

This study applied qualitative research approach by in-depth interviews and participant observations during fieldworks. Through this method, 11 informants were interviewed. Recent study by Abdullah et al.9, distribution population of the villages were 1326 with 182 head of household as presented in Table 1. Based on the data collections conducted, 130 medicinal plants species that belonging to 62 families used by the Orang Asli of Terengganu were identified and all the plants were presented in Table 2.

| District            | Village        | Orang Asli Sub-tribe | Head of Household (HoH) | Population |
|---------------------|----------------|----------------------|-------------------------|------------|
| Kemaman             | Sungai Pergam  | Semaq Beri          | 8                       | 683        |
| Hulu Terengganu     | Sungai Berua   | Semaq Beri          | 95                      | 605        |
| Besut               | Sungai Sayap   | Bateq                | 140                     | 38         |
| **Total**           |                |                      | **182**                 | **1326**   |

DISCUSSION

The relationship between traditional knowledge and medicinal plants can be seen through indigenous people’s livelihood who extensively applied traditional medicine potion to cure various ailments that occurred among their tribes. Malaysia is a multi-racial country where the indigenous people have only contributed a small portion of the Malaysian total population10. The indigenous people in Malaysia are called ‘Orang Asli’. They are also known as the first people who are considered the native community of Malaysia. According to Lee et al.11, Malaysia consists of 90 different groups of indigenous tribes. Nevertheless, the Orang Asli community can only be found in the Peninsular of Malaysia while the others live in Borneo Island. The Orang Asli tribes are distinguished by their geographical, language, and morphological characteristics. In Malaysia, there are three major tribes recognised as Negrito, Senoi and Proto-Malay. Each of these tribes is divided into three other sub-tribes9. According to Abdullah et al.12, Malaysia lives by more than 178,000 Orang Asli community whereby 60% of them are still live deep in the rain forests. This marginalized tribe has a unique cultural heritage, belief and socioeconomic compared to other mainstream races13. According to Ong et al.7, the Orang Asli community depends on surrounding natural resources for their survival as practised by ancestors before. Despite embraced by ancient culture and beliefs, the Orang Asli community rely on natural resources especially plant for medicinal purpose. They still depend on phytomedicines in traditional medicinal plant’s remedies due to easy availability around the nearby forest, difficult access to modern treatment (clinic) due to remote residencies location, cultural acceptability and poor socio-economic conditions.

The tropical rainforest in Malaysia has about six to seven thousand species of plants that have been widely used as medicinal plants by Orang Asli14. Some of them are multi-purpose to cure ailments where each part of the plant has its function with different methods of use. Most plants grow naturally wild in the forest nearby Orang Asli village. Thus, they were easily recognized by the informants during the fieldwork. Most of the species are taken internally by eating raw or paste form. Besides, several of the species are commonly consumed and have been commercialized among other races in Malaysia such as Goniothalamus macrophyllus (tongkat ali) and Labisia pumila (kacip fatimah). Based on this study, the plants that commonly used by the Orang Asli were belonged to rubiaceae (Eight species), zingiberaceae (Seven species) and vitaceae (Five species). The life of a plant-based society is surely discovering many of its surrounding plants for medicine. Their values and knowledge need to be developed and maintained to continue to
be passed on to future generations. Plants are an essential element of human life and have been used for generations in many uses. This is further explained by Ong et al.\textsuperscript{7,8}, who also described the history of herbal medicine that has been used to treat diseases since the beginning of human civilization that began in China. From the historical record of other civilized nations, there is also knowledge of plants that have nutrients. Greeks and Romans like Hippocrates were also recognized as pioneering herbal medicine and Hippocrates was recognized as the Father of Medicine. While contributions by Dioscorides and Theophrastus expand the field of herbal medicine.

Orang Asli’s is surrounded by nature and its resources\textsuperscript{15} which allows them to use it in their daily routine especially for food and medicine\textsuperscript{16}. The use of natural resources like herb plants not only exposes knowledge of the health tradition but also explores its scientific understanding and connection to the cultural and historical background of Orang Asli themselves. Orang Asli is among the hundreds of people who have used the plants in the forest as medicines to cure diseases\textsuperscript{17}. The practice passed down through the generations allowed them to discover and understand the secrets of plants that could be used as herbs to cure diseases until each species was identified for their use. Orang Asli commonly uses herbs to prevent, cure and protect against diseases such as fever, diarrhoea, haemorrhoids, cancer as well as strengthening the body’s immune system\textsuperscript{18}. It is also consumed for health care such as nourishing young and post-natal care. Besides, it is used in the ritual ceremony. Although, Orang Asli never receives any formal education they specialize in most species of wild plants. They also ensure the ecological systems of herbs continue to remain in the forests for the benefit of their generation such as maintaining practices and rituals while harvesting forest products\textsuperscript{19}. They believe that some plants can cure wound and cut, relieve physical pain, boosting inner energy and blood circulation. It is no surprise that the Orang Asli is a community that is rich in knowledge and wisdom for its management of nature. The result of the wisdom of traditional knowledge passed down from previous generations is applied to their lives. This process exposes the existence of a system of informal education and its unique science. Further, it gives meaning to the philosophy of life of the Orang Asli people themselves as manifested in the form of customary systems, religions and beliefs, cosmology, prohibitions and so on that govern the way they act and interact with other people and nature\textsuperscript{20}.

Generally, the practice of Orang Asli folk medicine has two main aspects namely spells and the use of various types of plants. Orang Asli who lives remotely in the forest rely heavily on materials, plants in the wild. Only a few of them use the edge plant. Mustaffa Omar and Zanisah Man\textsuperscript{21}, have documented nearly 100 Orang Asli medicinal plants from the Jakun, Semelai and Bateq communities that are used to treat various diseases. Most of their research is regarding plants for the treatment of women after childbirth, skin diseases, bleeding, colds fever, toothache, stomach aches, children’s baths, eye pain, vein, pain, hypertension and improving inner strength and family planning practices. Orang Asli is well-known for its privilege and ability to identify plants that can serve as a cure for many diseases. However, herbs that are extremely rich in nutrients can be used as an alternative to modern medicine as it needs a strict process to be followed to store their nutrients.

Orang Asli’s traditional knowledge plays a significant role in the community. Although it does not have any definite definition, traditional knowledge can be described as knowledge, know-how, skill and practices that are developed, sustained and transmitted by oral and discipleship practices through generation within a community, often forming part of its cultural or spiritual identity\textsuperscript{22}. Such knowledge, education and philosophy were passed down directly and indirectly by teachers and herbalists from generation to generation, thus shaping its heterogeneous social practices to enhance the unique cultural values that Malaysia has. Thus, traditional knowledge among Orang Asli is important for the formulation of plant medicine to get the exact prescriptions to cure specific ailments. Furthermore, traditional knowledge does not contribute to any forest damages or species extinction as the Orang Asli only takes nothing more than the plants that used for their remedies\textsuperscript{23}. Nevertheless, this precious heritage seems not to be applied to buy the younger generation recently. They choose not to believe this folk knowledge due to doubtful efficiency as well as surrounding social development. Furthermore, it is competitively used by advanced synthetic medicines which are scientifically proven. Hence, this unwritten tribal knowledge becomes no more important than before\textsuperscript{24}.

For decades, Orang Asli commonly lives by hunter and gatherer activity as a way of their lifestyle\textsuperscript{25}. It is about utilizing natural resources for survival by various conventional socio-economic activities such as hunting, fishing, building, handicraft and also curing simple ailments. It gives a crystal picture of how close the Orang Asli community with the natural environment\textsuperscript{26}. Therefore, environmental ecological changes (modernization and land development) give a big impact on their sustainable livelihood and symbiotic bond with nature. Mainstream development nowadays has made rapid changes toward the natural environment by boost up economic, political and
cultural changes. Some of the traditional knowledge was diminished from Orang Asli culture. The Orang Asli traditional knowledge or sometimes interchangeable with traditional ecological and environmental knowledge is arguably one of the most important aspects that distinguish Orang Asli management systems from the domain of Western ‘scientific’ resource management models. The livelihoods of rural households depend on the accessibility of natural resources such as agriculture, livestock, poultry, fisheries and forest as well as the underlying environmental services that sustain these resources.

To date, the Orang Asli community are still relying on these practices to cure ailments especially for those who live deep in the forest which is far from road access for modern health facilities. This survival ethno-health care has been practised a long time ago among the community and being able to cure their ailments. Thus, herbs and plants used by the Orang Asli are ethno-medically proven. However, those species need to be well documented for clinical test and before they are lost for good due to mess development.

CONCLUSION

Plants are natural drugs where it helping people especially the native community to boost up their health care and livelihood in the traditional way. Normally, it occurred among the tribal who live in remote areas where they have hardly access to modern health care facilities. This ethnomedical study shows that the Orang Asli in Terengganu is still relying on plants and herbs to cure ailments that occurred in their community. They consume 62 families with 130 plants and herbs species for health care purpose. Most of the species can be found easily in the nearby forest. Nevertheless, traditional medicinal plants are not an option anymore. They prefer to have synthetic medicine and going to a nearby clinic for medical treatment. Narratively, the well-organized resettlement that builds by the government which completed with all the basic infrastructures and amenities to uplift their socio status have turned down their ancestral heritage and belief. Furthermore, the death ratio among their people affected by diseases has turned their mind toward modern treatments. Therefore, this traditional knowledge where it put plants as primary remedies to cure ailments become no longer the priority for Orang Asli, especially in the younger generation.

All of the species may have the potential to be test clinically as they been used traditionally by the Orang Asli. These potential natural resources will give new hope for the pharmaceutical industry in creating new drugs for health products and supplements in the mainstream. Yet, it must be consumed in a right prescribe and by the advice of the professionals. To ensure this traditional knowledge regarding plants and herbs getting far from extinction, well documentation of plants list used by the vulnerable community has to be closely discovered. It will be useful for the next generations to know the species and methods that have been used by folk generations to cure ailments.

Conflict of interest

The authors declare no potential conflict of interest.

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Table 2: Plants used by the Orang Asli in Terengganu, Malaysia

| Family         | Scientific name               | *Native Name       | Part Used | Ailment Treated                      | Method                                                                 |
|----------------|-------------------------------|--------------------|-----------|--------------------------------------|------------------------------------------------------------------------|
| Acanthaceae    | *Andrographis paniculata* (Burm. F.) Wall. Ex Nees | Hempedu Bumi       | Whole plants | Hypertension, fever, Diabetes, Influenza, chest pain, tonsillitis, Bites, stings | Infusion taken orally. Decoction with Orthosiphon aristatus taken orally. Decoction taken orally. Poultice applied topically and taken orally. |
|                | *Asystasia coromandeliana* Nees | Rumput Israel      | Leaves    | Constipation, Swellings, cuts, wounds, Muscle cramps | Leave decoction taken orally. Poultice applied topically. Poultice with garlic-applied topically. |
|                | *Justicia gendarussa* Burm. f. | Gandarusa hitam    | Leaves    | Flatulence, Post-partum, coughs, thrush | Heated and applied on abdomen. Pounded with lime fruit, applied topically. |
|                |                                |                    | Roots     | Coughs                              | Decoction taken orally. Poultice applied topically.                     |
|                |                                |                    |           | Thrush                              | Poultice applied topically.                                            |
| Amaryllidaceae | *Allium cepa* L.               | Bawang merah       | Bulbs     | Fever, flatulence, Cuts, sores, pimples, abscess, Diarrhea, coughs, influenza, aches | Paste mixed with oil applied topically. Poultice applied topically. Blended and taken orally. |
|                | *Allium sativum* L.            | Bawang putih       | Bulbs     | Flatulence                          | Paste mixed with oil applied on abdomen. Poultice or juice applied topically. Juice mixed with honey taken orally. |
| Anacardiaceae  | *Spondias dulcis*              | Kedondong          | Fruit     | Tissue recovery and vitamin Head lice, Nightmares, Sore throat, Back pain, joint aches | Eat it raw or cook. Pounded leaves with water applied topically. Leaves placed under pillows. Infusion of dry leaves taken orally. |
|                | *Annona muricata* L.           | Durian belanda     | Leaves    | Head lice                           | Infusion of dry leaves taken orally. Decoction taken orally. Tree juice taken orally. |
|                |                                |                    | Barks     | Infertility for male and female     | Decoction taken orally.                                                |
|                |                                |                    | Fruits    | Post-partum, diabetes, hypertension | Fruit juice taken orally.                                               |
|                |                                |                    | Seeds     | Intestinal parasites                | Decoction or infusion of powdered seeds taken orally.                  |
| Annonaceae     | *Goniothalamus macrophyllus*   | Tongkat ali        | Roots     | Aches, pains, low sexual energy, hypertension | Decoction taken orally.                                                |
|                | *Polyalthia bullata* King      | Tongkat ali batu   | Roots     | Inner energy for men, indigestion, strengthens immune system | Decoction taken orally.                                                |
|                | *Goniothalamus macrophyllus*   | Gajah beranak      | Root      | Fever and post-partum               | Decoction and taken orally.                                            |
| Apiaceae          | *Centella asiatica* (L.) Urban | Pegaga | Leaves | Aging                                      | Juice taken orally. |
|------------------|--------------------------------|--------|--------|-------------------------------------------|---------------------|
|                  |                                 |        |        | Cuts, sores, skin diseases                | Poultrie applied topically. |
|                  |                                 |        | Whole plants | Leucorrhea                        | Decoction with salt added applied topically. |
|                  |                                 |        |        | Post-partum, headache, hypertension, tip cracks | Decoction taken orally. |
|                  | **Pegaga**                      |        |        |                                           |                     |
| Apocynaceae       | *Catharanthus roseus* (L.) G. Don | Kemunting China | Roots | Abortion and menstural               | Decoction taken orally. |
|                  |                                 |        | Barks | Malaria, diabetes, chancres and hypertension | Decoction taken orally. |
| Areaceae          | *Areca catechu* L.              | Pinang | Fruits | Fever                              | Soaked in water incantation and taken orally. |
|                  |                                 |        | Barks | Malaria                              | Decoction taken orally. |
|                  | **Iguanura sp.**                |        |        |                                           |                     |
|                  |                                             |        | Fruits | Fever                              | Decoction taken orally. |
|                  | **Pinang**                      |        |        | Malaria                              | Decoction taken orally. |
| Aristolochiaceae  | *Thottea grandiflora* Rottb.     | Perdu beruang | Roots | Asthma                          | Decoction taken orally. |
|                  | **Pokok kura**                  |        |        | Cough                                  | Decoction taken orally. |
|                  | **Perdu beruang**               |        |        |                                           |                     |
| Asparagaceae      | *Peliosanthes lurida* Ridl.     | Lembang seratus | Roots | Flatulence                          | Decoction taken orally. |
|                  | *Peliosanthes violacea* Wall    |        |        | Veins aches                          | Decoction taken orally. |
|                  | **Peliosanthes violacea** Wall  |        |        |                                           |                     |
|                  | **Lembang seratus**             |        |        |                                           |                     |
|                  | **Rambu suntum**                |        |        |                                           |                     |
| Asteraceae        | *Chromolaena odorata* (L.) R.M.  | Kapal terbang | Leaves | Cuts, wounds                      | Pounded and applied topically. |
|                  | **King & H. Rob.**              |        |        |                                           |                     |
|                  | *Gynura procumbens* (Lour.) Merr.| Bayam cina | Leaves | Diabetes, hypertension                | Leaves eaten.       |
|                  | **Merr.**                       |        |        |                                           |                     |
|                  | *Ageratum conyzoides* L.        | Rumput pareh, jarang/ | Roots | Fever                          | Decoction taken orally. |
|                  |                                 | rumpuk sekodok |        | trachoma, cut, stomach ache and cough | Poultrie applied topically. |
|                  | **Pluchea indica** (L.) Less.   | Beluntas | Roots | Fever                              | Decoction taken orally. |
|                  |                                 |        |        |                                           |                     |
|                  | **Beluntas**                    |        |        |                                           |                     |
|                  | **Stemut**                      |        |        |                                           |                     |
|                  | **Sembung**                     |        |        |                                           |                     |
|                  | **Rambu suntum**                |        |        |                                           |                     |
| Balsaminaceae     | *Impatiens balsamina* L.        | Keembung | Leaves | Spli t nails                        | Pounded and applied topically. |
|                  |                                 |        |        | Hypertension                         | Decoction taken orally. |
|                  | **Keembung**                    |        | Whole plants |                                           |                     |
| Bignoniaceae      | *Oroxylum indicum* (L.) Kurz.   | Pokok bekah | Barks | Family planning for women | Decoction taken orally. |
|                  |                                 |        |        |                                           |                     |
| Blechnaceae       | *Stenochlaena palustris* (Burm.)| Pucuk miding | Young leaves | Fever | Juice applied topically. |
|                  | **Bedd.**                       |        | Stems  | Shingles                             | Chewed and applied topically. |
|                  |                                  |        |        |                                           |                     |
| Family          | Species                        | Part(s)       | Condition                          | Method                                      |
|-----------------|--------------------------------|---------------|------------------------------------|---------------------------------------------|
| Caricaceae      | *Carica papaya* L.             | Leaves, shoot, flowers | Amenorrhea                         | Blended with water and juice taken orally. |
|                 |                                | Sap of fruits   | Fever                              | Infusion in brine taken orally.             |
|                 |                                | Ripe fruits     | Hypertension                       | Scalded and eaten.                          |
|                 |                                | Latex          | Pimples, skin blemish, cracks      | Latex applied topically.                    |
|                 |                                | Sap of fruits   | Constipation                       | Fruit eaten.                                |
|                 |                                | Shoot, flowers  | Cough                              | Mixed with honey taken orally.              |
| Commelinaceae   | *Amischotolype mollissima*     | Leaves         | Fever                              | Infusion in brine taken orally.             |
|                 | *(Blume) Hassk.*               |               | Hypertension                       | Scalded and eaten.                          |
|                 |                                |               | Pimples, skin blemish, cracks      | Latex applied topically.                    |
| Connaraceae     | *Cnestis palala* Griff.        | Roots          | Hypertension, fever                | Decoction taken orally.                     |
| Convolvulaceae  | *Ipomoea aquatica* Fors.       | Leaves, roots  | Hypertension, fever                | Decoction taken orally.                     |
|                 |                                | Whole plant    | Pimples, skin blemish, cracks      | Pounded with salt and applied topically.    |
|                 |                                |               | Rough hair                         | Mashed in water and liquid used topically.  |
|                 |                                |               | Food poisoning                      | Juice taken orally.                          |
| Crassulaceae    | *Bryophyllum pinnatum* (L.) Pers. | Leaves         | Headache, abscess                  | Pounded and applied topically.              |
|                 |                                | Leaves, roots  | Put in ear                         | Juice used as eardrops.                     |
|                 |                                |               | Skin itch                          | Pounded and applied topically.              |
|                 |                                |               | Hypertension, fever                | Decoction taken orally.                     |
| Dilleniaceae    | *Tetracera indica* (Hout. Ex Chris. & Panz.) Merr. | Leaves         | Skin itch                          | Pounded and applied topically.              |
| Dioscoreacea    | *Dioscorea orbiculata* Hook.f. | Tubers         | Strengthen energy                   | Decoction taken orally.                     |
|                 | *Dioscorea alata* L.,          | Tuber          | Tuberculosis, nephralgia, splintage, haematemesis and boils | Dry it for 4 days. Pounded, soak with water and Taken orally. |
|                 | Huwi/ Ubi Papua                |               |                                   |                                             |
| Euphorbiaceae   | *Manihot esculenta* Crantz.    | Leaves         | Cuts, bites, stings, abscess       | Pounded and applied topically.              |
|                 |                                | Tubers         | Fever, headache, influenza         | Pounded and applied topically.              |
|                 |                                | Roots          | Fitness                            | Decoction taken orally.                     |
|                 |                                | Latex          | Malaria                            | Rub it on the body.                         |
|                 |                                | Fruit          | Glue                               | Blow pipe.                                  |
|                 |                                |              | Consume                            | Boiled, grilled or pickled.                 |
|                 | *Chrozophora oblengofolia*     | Leaves         | Colic                              | Poultice applied topically.                 |
|                 | *(Delile) A.Juss. ex Spreng. Elateriospermum tapos |              |                                   |                                             |
|                 | Perah                         |               |                                   |                                             |
|                 | *Bridelia monoica* (Lout.) Merr. | Leaves         | Oedema and abortion                | Decoction taken orally.                     |
|                 | Kenidai                       |               |                                    | Dry it for 4 days. Pounded, soak with water. |
| Family      | Species                        | Common Name          | Part Used       | Condition                          | Method of Use                        |
|-------------|--------------------------------|----------------------|-----------------|------------------------------------|--------------------------------------|
| Fabaceae    | *Senna tora* L.                | Gelenggang seni      | Shoots          | Constipation                       | Eaten raw                            |
|             |                                |                      | Leaves          | Skin diseases                      | Poultice applied                      |
|             |                                |                      | Whole plants    | Heartburn, post-partum             | Decoction taken orally                |
|             | *Tamarindus indica* L.         | Asam jawa            | Fruits          | Fever, rough palm, swellings       | Mixed in water and applied topically  |
|             |                                |                      |                 | Bites, stings                      | Split fruit applied topically         |
|             |                                |                      |                 | Sore throat                        | Juice taken orally                    |
|             | *Parkia speciosa* Hassk.       | Petai                | Leaves          | Cough                              | Pounded with rice and applied on neck |
|             |                                |                      | Fruits          | Diabetes                           | Eaten with the skin intact            |
|             |                                |                      | Roots           | Hypertension                       | Decoction taken orally                |
|             | *Mimosa pudica* L.            | Semalu               | Whole plants    | Post-partum                        | Pounded and applied topically         |
|             |                                |                      |                 | Athlete’s foot pain                | Pounded and applied topically         |
|             |                                |                      | Roots           | Swelling                           | Pounded and applied topically         |
|             | *Derris elliptica*             | Tuba                 | Barks, roots, stem | Poison                             | Dry it for 4 days. Pounded, soak with water |
|             | *Clitoria ternatea*            | Bunga biru           | Roots           | Purgative and headaches            | Decoction taken orally                |
|             |                                |                      | Leaves          | Boils and coughs                   | Decoction taken orally                |
|             |                                |                      | Flowers         | Conjunctivitis and bronchitis      | Decoction taken orally                |
| Fagaceae    | *Lithocarpus edulis*           | Mempening            | Fruits          | Post-partum                        | Eat it raw or cook                    |
|             | *Castanopsis inermis*          | Berangan             | Fruits          | Consume                            | Eat it raw or cook                    |
| Gramiceae   | *Lophatherum gracile* Brongn.  | Rumput jarang/ rumput kelurut | Roots           | Stomach ache and chancres          | Decoction taken orally                |
| Guttiferae  | *Garcinia cambogia*            | Gelugur              | Fruits          | Consume                            | Appetite control, fat loss, digestion, worm, diarrhoea |
|             |                                |                      |                 |                                    | Slice and dry it fow few days-put it in cook. |
|             | *Moliniera latifolia* (Dryand. ex W.T.Aiton) Herb. ex Kurz | Nyor lembe           | Leaves          | Cuts, swellings                    | Poultice applied topically            |
|             |                                |                      | Rhizome         | Coughs, no appetite                |                                      |
|             | *Hyptis brevipes* Poit.*       | Setulang             | Leaves          | Stomach ache                       |                                      |
|             |                                |                      |                 | Flatulence                         |                                      |
|             |                                |                      |                 | Cuts, sores, bites, stings         |                                      |
|             |                                |                      |                 | Expel placenta, post-partum        |                                      |
|             |                                |                      |                 | Stop lactation                      |                                      |
|             |                                |                      |                 |                                  |                                      |
|             |                                |                      |                 |                                  |                                      |
|             |                                |                      |                 |                                  |                                      |
|             |                                |                      |                 |                                  |                                      |
| Family          | Species                                    | Part(s)       | Uses                                                                 | Preparation                                                                 |
|-----------------|--------------------------------------------|---------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Vitaceae        | Orthosiphon aristatus (Blume) Miq.         | Leaves, flowers | Sore throat, difficult urination                                      | Decoction taken orally.                                                    |
|                 | Misai kucing                               | Leaves, roots | Diabetes                                                             | Decoction with Andrographis paniculatus taken orally.                      |
|                 |                                             | Roots         | Headache                                                             | Decoction taken orally.                                                    |
|                 | Vitex longisepala King & Gamble Merian     | Leaves, roots | Hypertension                                                         | Decoction taken orally.                                                    |
| Lauraceae       | Cananga odorata (Lamk.) Hk. f. & Thom       | Leaves        | Body odor                                                            | Blend with lime, sugar and salt. Juice taken orally.                       |
|                 | Kenanga                                    | Flowers       | Scalp odor                                                           | Infusion in coconut oil applied topically.                                 |
|                 |                                             | Barks         | Skin itch                                                            | Grated and applied topically.                                             |
|                 |                                              | Roots         | Energy                                                               | Decoction taken orally.                                                    |
|                 | Cinnamomum cuspidatum Rempah gunung        | Barks         | Diabetes                                                             | Decoction taken orally.                                                    |
|                 | Cinnamomum sp. Kencing manis               | Whole plants  | Flatulence                                                           | Decoction taken orally.                                                    |
|                 | Cinnamomum cinereum Gamble. Tajalawang     | Barks         | Energy                                                               | Decoction taken orally.                                                    |
|                 | Actinodaphene procera Nees Huru/ Medang Kunyit | Barks             | Skin itch                                                            | Decoction taken orally.                                                    |
| Lecythidaceae   | Barringtonia acutangula (L.) Gaertn. Gajah beranak | Roots             | Blood circulation                                                    | Decoction taken orally.                                                    |
| Leguminosae     | Senna tora (L.) Roxb. Ketepeng kecil        | Leaves        | Purgative, cough and ringworms                                       | Decoction taken orally.                                                    |
|                 |                                             | Fruits        | Dysentery                                                            | Decoction taken orally.                                                    |
|                 |                                             | Seeds         | Anthelmintic                                                         | Decoction taken orally.                                                    |
| Loganiacea      | Strychnos pubescens C.B.Clarke Tarik gajah | Leaves        | Ticks’ problem                                                      | Decoction taken orally.                                                    |
| Loranthaceae    | Macrosolen cochinchinensis (Lour.) Tiegh. Dedalu api | Stems            | Diarrhoea                                                            | Decoction taken orally.                                                    |
| Lythraceae      | Lawsonia inermis (L.) Inai                  | Leaves        | Dandruff, athlete's foot, weak nails Scar Kidney stones              | Pounded and applied topically.                                            |
|                 |                                             | Roots         | Post-partum                                                          | Decoction taken orally.                                                    |
|                 |                                             | Leaves, roots | Facial condition                                                     | Decoction taken orally.                                                    |
| Malvaceae       | Durio zibethinus Murray Durian              | Leaves        | Influenza fever                                                      | Mashed in water with leaves from several other spices used as bath.       |
|                 | Hibiscus rosa-sinensis L. Bunga raya putih | Roots         | Fever, dry hair                                                      | Crushed in water and applied topically.                                   |
|                 |                                             | Leaves        | Cuts, sores                                                          | Grated and applied topically.                                             |
|                 | Urena lobata L. Pulu-pulu                   | Roots         | Post-partum                                                          | Decoction taken orally.                                                    |
| Melastomataceae | Melastoma malabathricum L. Senduduk          | Leaves        | Cuts                                                                 | Pounded and applied topically.                                            |
|                 |                                             | Fruits        | Diarrheal, leucorrhoea                                               | Decoction with ginger and sugar taken orally.                              |
|                 |                                             |               | Tongue pain                                                          | Placed on tongue pain.                                                     |
| Family          | Species                          | Parts          | Conditions                                 | Uses                                                      |
|-----------------|----------------------------------|----------------|--------------------------------------------|-----------------------------------------------------------|
| Malvaceae       | Neodissochaeta gracilis (Jack.)  | Roots          | Travel sickness                            | Placed in mouth.                                          |
|                 | Cetliot                          | Leaves, roots  | Post-partum                               | Decoction taken orally.                                   |
|                 |                                  | Leaves         | Influenza fever                            | Mashed in water with leaves from several other spices used as bath. |
| Meliaceae       | Dysoxylum alliaceum Seem         | Roots          | Post-partum                               | Decoction taken orally.                                   |
|                 | Hatap selaya                     |                |                                            |                                                            |
| Moraceae        | Ficus deltoidea Jack             | Roots          | Jaundice                                  | Decoction used as bath.                                   |
|                 | Mas Cotek                        |                |                                            |                                                            |
|             | Neodissochaeta gracilis (Jack.)  | Roots          | Women's fertility                         | Decoction taken orally.                                   |
| Menispermaceae  | Fibraurea tinctoria Lour.        | Roots          | Asthma                                    | Decoction taken orally.                                   |
|                 | Pokok kuning                     |                |                                            |                                                            |
| Myrtaceae       | Psidium guajava L.               | Leaves         | Body odor                                 | Leaves rubbed on body.                                    |
|                 | Jambu batu                       | Leaf and bark  | Pimples                                   | Infusion with *Piper betle* leaves applied topically.     |
|                 |                                  |                | Diarrheal                                 | Young leaves eaten or bark decoction taken orally.        |
|                 | Syzygium polyanthum (Wight)      | Roots          | Aging                                     | Grounded and applied topically on face.                   |
|                 | Salam                            |                | Skin irritation                            | Poultice applied topically.                               |
|                 | Walp.                            | Barks, Leaves  | Abdominalgia                              | Decoction taken orally.                                   |
|             |                                  |                |                                            |                                                            |
| Myrtaceae       | *Mapania cuspidata* (Miq.) Uittien| Roots          | Women's fertility                         | Decoction taken orally.                                   |
|                 | *Mapermia cruridata*              | Roots          | Asthma                                    | Decoction taken orally.                                   |
|                 |                                  |                |                                            |                                                            |
| Myrtaceae       | *Psidium guajava* L.             | Fruits         | Scalds                                    | Burned and mixed with oil applied topically.              |
|                 |                                  |                |                                            |                                                            |
| Myrtaceae       | *Psidium guajava* L.             | Leaves         | Body odor                                 | Leaves rubbed on body.                                    |
|                 |                                  | Leaf and bark  | Pimples                                   | Infusion with *Piper betle* leaves applied topically.     |
|                 |                                  |                | Diarrheal                                 | Young leaves eaten or bark decoction taken orally.        |
|                 |                                  | Barks, Leaves  | Aging                                     | Grounded and applied topically on face.                   |
|                 |                                  |                | Skin irritation                            | Poultice applied topically.                               |
|                 |                                  |                | Abdominalgia                              | Decoction taken orally.                                   |
| Oliaceae        | Scorodocarpus borneensis Becc.   | Roots          | Haemorrhoids                              | Decoction taken orally.                                   |
| Ophioglossaceae | Helminthostachys zeylanica (L.)  | Whole plants   | Post-partum                               | Decoction taken orally.                                   |
|                 | & Hook.                          | Roots          | Diabetes                                  | Decoction taken orally.                                   |
| Oxiaceae        | Averrhoa bilimbi L.              | Leaves         | Stomach ache                              | Young leaves eaten.                                        |
|                 | Betlimbing buluh                 | Flowers        | Skin cracks                               | Poultice with pepper corn and vineger applied topically. |
|                 |                                  | Fruits         | Diabetes, hypertension                    | Decoction taken orally.                                   |
|                 |                                  |                | Pimples, skin diseases                    | Juice taken orally.                                        |
|                 |                                  | Barks          | Goitre                                    | Poultice with salt and applied topically.                 |
|                 |                                  |                |                                            | Decoction with onions taken orally.                       |
| Pandanaceae     | Freycinetia javanica Blume.      | Roots          | Back pain                                 | Decoction taken orally.                                   |
|                 | Kelawit mantai                   |                | Vaginal itch                              | Infusion applied topically.                               |
|                 | Pandan                           | Leaves         | Post-partum                               | Infusion with leaves of *Alpinia galanga*, *Curcuma longa* and *Cymbopogon nardus* used as bath. |
| Family            | Genus                             | Common Name  | Part Utilized | Conditions                                      | Method of Use                          |
|-------------------|-----------------------------------|--------------|--------------|------------------------------------------------|----------------------------------------|
| **Phyllanthaceae**| *Phyllanthus acidus* (L.) Skeels.  | *Cermai*     | Leaves       | Diabetes, hypertension, pimples, pain during menses, Jaundice | Decoction taken orally.                |
|                   | *Phyllanthus niruri* L.           | *Dukung anak*| Whole plants |                                                                 | Decoction taken orally.                |
|                   | *Phyllanthus niruri* L.           | *Leaves*     |             | Diabetes, hypertension, pain during menses, Jaundice | Juice taken orally.                    |
|                   | *Sauropus androgynus* (L.) Merr  | *Cekok manis*| Leaves      | Jaundice | Decoction used as bath and also taken orally. |
|                   | *Sauropus androgynus* (L.) Merr  | *Cekok manis*| Leaves      | Diuresis | Juice applied topically.                        |
|                   | *Sauropus androgynus* (L.) Merr  | *Cekok manis*| Leaves      | Coughs | Pounded with milk applied topically.            |
|                   | *Sauropus androgynus* (L.) Merr  | *Cekok manis*| Leaves      | Sores | Decoction taken orally.                        |
|                   | *Sauropus androgynus* (L.) Merr  | *Cekok manis*| Leaves      | Headache | Decoction taken orally.                        |
|                   | *Sauropus androgynus* (L.) Merr  | *Cekok manis*| Leaves      | Hair growth | Decoction taken orally.                        |
|                   | *Sauropus androgynus* (L.) Merr  | *Cekok manis*| Leaves      | Hypertension | Decoction taken orally.                        |
| **Piperaceae**    | *Piper betle* L.                  | *Sireh*      | Leaves      | Nosebleed | Rolled leaf inserted.                          |
|                   | *Piper betle* L.                  | *Sireh*      | Leaves      | Toothache, sores, abscess, pain, ache, Fever | Betel quid applied.                    |
|                   | *Piper betle* L.                  | *Sireh*      | Leaves      | Vaginal itch | Infusion applied topically.                    |
|                   | *Piper betle* L.                  | *Sireh*      | Leaves      | Flatulence | Decoction used as wash.                        |
|                   | *Piper betle* L.                  | *Sireh*      | Leaves      | Poor eyesight | Heated and applied topically.                 |
|                   | *Piper betle* L.                  | *Sireh*      | Leaves      | Bad breath | Decoction taken orally.                        |
|                   | *Piper nigrum* L.                 | *Lada hitam* | Leaves      | Fever | Infusion used as gargle.                       |
|                   | *Piper nigrum* L.                 | *Lada hitam* | Leaves      | Diarrhea, headache, difficult urination, Post-partum, loss appetite | Decoction taken orally.                |
|                   | *Piper sarmentosum* Roxb.         | *Kadok*      | Leaves      | Malarial fever | Decoction taken orally.                        |
|                   | *Piper sarmentosum* Roxb.         | *Kadok*      | Leaves      | Diabetes, difficult urination | Decoction taken orally.                |
|                   | *Piper sarmentosum* Roxb.         | *Kadok*      | Roots       | Malarial fever | Decoction taken orally.                        |
| **Poaceae**       | *Lophatherum gracile* Brongn      | *Cekrek*     | Roots       | Hypertension | Decoction taken orally.                        |
|                   | *Cymbopogon citratus* (DC) Stapf  | *Serai*      | Leaves      | Aches and pains | Pounded and juice applied topically.            |
|                   | *Cymbopogon citratus* (DC) Stapf  | *Serai*      | Leaves      | Hair loss, mosquito repellent | Decoction applied topically.            |
|                   | *Cymbopogon winterianus* Jowitt ex Bor.. | *Serai wangi* | Whole plants | Difficult urination | Decoction taken orally.                        |
|                   | *Cymbopogon winterianus* Jowitt ex Bor.. | *Serai wangi* | Whole plants | Fever | Decoction used as bath.                        |
|                   | *Imperata cylindrica* (L.) Raes. & P. Beauv. | *Lalang* | Rhizome     | Stomach ache | Decoction taken orally.                        |
|                   | *Imperata cylindrica* (L.) Raes. & P. Beauv. | *Lalang* | Rhizome     | Swellings | Poultice applied topically.                    |
|                   | *Imperata cylindrica* (L.) Raes. & P. Beauv. | *Lalang* | Rhizome     | Swellings | Poultice applied topically.                    |
|                   | *Imperata cylindrica* (L.) Raes. & P. Beauv. | *Lalang* | Rhizome     | Swellings | Poultice applied topically.                    |
| Family          | Species                          | Part Used | Common Name | Uses                                                                 |
|-----------------|----------------------------------|-----------|-------------|----------------------------------------------------------------------|
| Polypodiaceae   | Pyrodictium piloselloides        | Leaves    | Duit-duit   | Headache                                                             |
|                 |                                  |           |             | Pounded and applied topically.                                       |
|                 |                                  |           |             |                                                                     |
| Lignosus rhinocerus | Susu rimau                  | Tubers    |             | Skin itch                                                            |
| (Cooke)         |                                  |           |             | Pounded with salt and rice, added warm water, applied topically.     |
| Ryvarden        |                                  |           |             |                                                                     |
| Prunus glandulosa |                     |           |             |                                                                       |
| Primulaceae     | Ardisia sp.                      | Roots     | Kayu membuluh| Asthma                                                               |
|                 |                                  |           |             | Burned and applied on chest.                                         |
| Rubiaceae       | Ixora sp.                        | Roots     | Pokok pengeras| Increase energy                                                       |
|                 |                                  |           |             | Eaten raw                                                            |
|                 | Labisia pumila                   | Roots     | Kacip fatimah i| Breast cancer                                                        |
|                 |                                  |           |             | Shredded and mixed with water applied topically.                     |
|                 | Prismatomeris sp.               | Roots     | Haji samad  | Body aches                                                           |
|                 |                                  |           |             | Decoction taken orally.                                             |
| Portulacaceae   | Talinum fruticosum (L.) Juss.    | Leaves    | Pokok duit RM5| Abscess, sores                                                       |
|                 |                                  |           |             | Pounded with Curcuma longa and rice, applied topically.              |
| Primulaceae     | Ardisia sp.                      | Roots     | Kayu membuluh| Ulcer                                                               |
|                 |                                  |           |             | Decoction taken orally.                                             |
| Rubiaceae       | Ixora sp.                        | Roots     | Pokok pengeras| Men mystic                                                          |
|                 |                                  |           |             | Decoction taken orally.                                             |
|                 | Labisia pumila                   | Roots     | Kacip fatimah i| Women's fertility, Post-partum, Increase the energy                |
|                 |                                  |           |             | Decoction taken orally.                                             |
|                 | Prismatomeris sp.               | Roots     | Haji samad  | High blood pressure                                                 |
|                 |                                  |           |             | Decoction taken orally.                                             |
|                 | Spermacoce articulata L. f      | Whole plants| Susu Kambing| Joint aches and pain                                               |
|                 |                                  |           |             | Decoction taken orally.                                             |
|                 | Jasminum sambac (L.) Aiton.      | Leaves    | Melor       | Muscle pains                                                        |
|                 |                                  |           |             | Decoction taken orally.                                             |
|                 |                                  |           |             |                                                                     |
|                 | Myrtus muelleri                  | Leaves    |             | Fever                                                               |
|                 |                                  |           |             | Mixed with leaves of Canthium chartacea and Gardenia jasminoides, crushed in water, liquid applied topically and taken orally. |
|                 |                                  |           |             |                                                                     |
|                 | Mitragyna speciosa (Korth.) Havil | Leaves    | Ketum       | Leucorrhoea, painful mensturation                                    |
|                 |                                  |           |             | Decoction taken orally.                                             |
|                 | Morinda corneri K. M. Wong       | Leaves, fruits | Mengkudu hutan| Headache                                                            |
|                 |                                  |           |             | Pounded with salt applied on forehead.                              |
|                 |                                  |           |             |                                                                     |
|                 | Timonius wallichianus (Korth.) Val. | Roots    | Patah bawah tangga | Low sexual energy for man                                          |
|                 | Myrmecodia pendans              | Bulbs     | Sarang semut | Decoction taken orally.                                             |
|                 | Paederia foetida L.,             | Leaves    | Akar sekentut| Cancer, antibiotic, antioxidant, fever, gout, diarrhoea             |
|                 |                                  |           |             | Slice, wash and Decoction. Make it as tea and taken orally.         |
|                 | Canthium borridum Blume         | Leaves    | Bulangan    | Dysentery                                                            |
|                 |                                  |           |             | Decoction taken orally.                                             |

**Notes:**
- **Polypodiaceae**
  - *Pyrodictium piloselloides* (L.) M.G.Price: Duit-duit leaves used for headache.
  - *Lignosus rhinocerus* (Cooke) Ryvarden: Tubers (Susu rimau) used for asthma.
  - *Polypodiaceae* species are known for their medicinal properties.

- **Primulaceae**
  - *Ardisia sp.*: Leaves (Kayu membuluh) used for asthma.
  - *Ixora sp.*: Roots (Pokok pengeras) used for men mystic.
  - *Labisia pumila*: Roots (Kacip fatimah i) used for women's fertility, post-partum.
  - *Prismatomeris sp.*: Roots (Haji samad) used for high blood pressure.
  - *Spermacoce articulata L. f*: Whole plants (Susu Kambing) used for joint aches and pain.
  - *Jasminum sambac (L.) Aiton.*: Leaves (Melor) used for fever.

- **Portulacaceae**
  - *Talinum fruticosum (L.) Juss.*: Leaves (Pokok duit RM5) used for abscess, sores.
  - *Primulaceae* species are used for treating various conditions.

- **Rubiaceae**
  - *Mitragyna speciosa (Korth.) Havil*: Leaves (Ketum) used for headache.
  - *Morinda corneri K. M. Wong*: Leaves, fruits (Mengkudu hutan) used for post-partum.
  - *Timonius wallichianus (Korth.) Val.*: Roots (Patah bawah tangga) used for low sexual energy.
  - *Myrmecodia pendans*: Bulbs (Sarang semut) used for cancer, antibiotic, antioxidant.
  - *Paederia foetida L.*, *Canthium borridum Blume*: Leaves used for dysentery.

- **Other Species**
  - *Canthium borridum Blume*: Barks and leaves used for conjunctivitis.

**Additional Notes:**
- Many of these plants are used in traditional medicine for their medicinal properties.
- Preparation methods vary depending on the plant and the specific use.
- Some plants are used in combination with other herbs or ingredients.
- All uses should be practiced under the guidance of a healthcare professional.
| Family       | Species                                      | Part(s)       | Use(s)                                                                 | Preparation                     |
|-------------|----------------------------------------------|---------------|----------------------------------------------------------------------|---------------------------------|
| Rutaceae    | *Murraya koenigii* (L.) Spreng              | Roots         | Hemifacial                                                           | Decoction taken orally.         |
|             | *Murraya paniculata* (L.) Jack              | Roots, barks  | Cosmetics, gonorrhea, obesity, toothache and menstrual              | Poulstice applied topically.    |
|             |                                              | flowers       |                                                                      |                                 |
|             |                                              | Leaves        |                                                                      | Decoction taken orally.         |
| Sapindaceae | *Guioa pubescens* (Zoll. & Mor.) Radlk.      | Roots         | Influenza fever                                                      | Decoction used as bath.         |
|             | *Nephelium lappaceum* L.                    | Leaves        | Headache                                                            | Pounded and applied topically on forehead. |
|             |                                              | Leaves        | Vomit                                                               | Washed and taken orally.        |
| Smilacaceae | *Smilax myosotiflora* A.DC.                  | Root          | Strength and energy                                                 | Decoction taken orally.         |
|             | *Smilax calophylla* Wall. ex A.DC.          | Roots         | Low sexual energy for man                                           | Decoction taken orally.         |
| Solanaceae  | *Solanum torvum* Sw.                        | Leaves        | Cuts                                                                | Pounded and applied topically.  |
|             |                                              | Fruits        | Hypertension, toothache                                            | Eaten raw.                      |
|             |                                              |                                                           |                                      | Pounded and applied topically.  |
| Sterculiaceae| *Melochia corchorifolia* L.,                | Roots         | Smallpox, dysentery and dysuria                                     | Poulstice applied topically.    |
| Tectariaceae| *Tectaria angulata* (Willd.) Copel.          | Roots         | Asthma                                                               | Decoction taken orally.         |
| Turneraceae | *Turnera sabulata*                          | Bunga pukit   | Pesticide control                                                   | Plant/ grow it in yard.         |
| Vitaceae    | *Ampelocissus gracilis* (Wall.) Planch.     | Kertas api    | Large sores                                                         | Poulstice applied topically.    |
|             | *Cissus repens* Lam.                        | Ubi kertas    | Haemorrhoids                                                        | Decoction taken orally.         |
|             | *Leea indica* (Burm. f.) Merr.              | Kerak nasi    | Diabetes                                                            | Decoction taken orally.         |
|             | *Alpinia galanga* (L.) Willd.               | Lengkuas      | Skin diseases                                                       | Juice mixed with garlic juice applied topically |
|             |                                               |               | Flatulence                                                          | Juice taken orally              |
|             | *Cheilocostus speciosus* (J.Koenig) C.D.Specht. | Tepus bukit (bunga putih) | Fever                                                               | Infusion of crushed leaves and rice applied topically |
|             |                                               |               | Aches, pains                                                       | Poulstice applied topically.    |
|             |                                               |               | Post-partum                                                        | Poulstice applied on abdomen    |
|             |                                               |               | Cuts, wounds                                                       | Pounded and applied topically.  |
| Xanthorrhoeaceae | *Aloe vera* (L.) Burm. f..            | Leaves        | Burns, fever, pimples, dandruff                                    | Sap and jelly applied topically |
| Zingiberaceae| *Curcuma longa* L.                          | Panau         | Tine vesicular                                                     | Pounded and applied topically.  |
|             | *Curcuma longa* L.                          | Kunyit        | Post-partum                                                         | Blended with water, added salt and taken orally. |
|             |                                              | Rhizome       | Pimples                                                            | Pounded, mixed with face powder and applied topically |
|             |                                              |               |                                                                    |                                 |
| Plant Name                          | Part Used  | Condition                        | Treatment Details                                                                 |
|------------------------------------|------------|----------------------------------|-----------------------------------------------------------------------------------|
| Curcuma viridiflora Roxb.          | Rhizome    | Sores, athlete’s foot            | Poultice with coconut oil, applied topically.                                      |
| Curcuma zanthorrhiza Roxb.         | Roots      | Abrasions                        | Slices applied topically.                                                          |
| Etlingera elatior (Jack) R.M.Sm.   | Leaves     | Facial dermatitis                | Eaten raw.                                                                        |
| Curcuma zanthorrhiza Roxb.         | Roots      | Difficulty breathing             | Eaten raw.                                                                        |
| Etlingera elatior (Jack) R.M.Sm.   | Leaves     | Aging                            | Eaten raw.                                                                        |
| Curcuma viridiflora Roxb.          | Root       | Hemafecia, water in lungs        | Juice applied topically on the chest.                                             |
| Curcuma zanthorrhiza Roxb.         | Root       | Ageing                           | Juice taken orally.                                                               |
| Etlingera elatior (Jack) R.M.Sm.   | Root       | Cuts, wounds                     | Pounded with Centella asiatica, juice taken orally.                                |
| Etlingera elatior (Jack) R.M.Sm.   | Leaf       | Body aches                       | Pounded with Centella asiatica, juice taken orally.                                |
| Etlingera elatior (Jack) R.M.Sm.   | Fruits     | Earache                          | Decoction taken orally.                                                           |
| Curcuma viridiflora Roxb.          | Root       | Worms                            | Decoction used to wash and applied topically.                                     |
| Curcuma zanthorrhiza Roxb.         | Leaf       | Sprain                           | Decoction used as bath.                                                          |
| Curcuma zanthorrhiza Roxb.         | Root       | Flatulence                       | Decoction used as bath.                                                          |
| Curcuma zanthorrhiza Roxb.         | Leaf       | Pain during menses               | Decoction taken orally.                                                           |
| Curcuma zanthorrhiza Roxb.         | Root       | Bites, stings, headache          | Juice taken orally.                                                               |
| Curcuma zanthorrhiza Roxb.         | Leaf       | Leucorrhoea                      | Pounded and applied topically.                                                   |
| Curcuma zanthorrhiza Roxb.         | Leaf       | Post-partum                      | Compounded decoction with roots of Capsicum frutescens, Ricinus communis and cumin seeds taken orally. |
| Curcuma zanthorrhiza Roxb.         | Root       | Weak teeth                       | Pounded with pepper, turmeric, eaten with rice.                                   |
| Curcuma zanthorrhiza Roxb.         | Root       | Body aches                       | Pounded with salt, juice used as gargle.                                          |