

Traditional Plants Medicine of Suku Anak Dalam Jambi

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Abstract

Background: Indonesia is a country with many tribes and cultures, one of which Suku Anak Dalam (SAD) in Jambi province. SAD also known as Orang Rimba, they are semi-nomadic life, moving from one place to another in Bukit Dua Belas National Park area. Each tribe is headed by Temenggung as a chief master for treatment diseases using plants. According to WHO statistic 2014, Infection diseases caused of increased mortality rates in Indonesia.

Method: Data collected by ethnopharmacology observation survey some plant in Orang Rimba at Bukit Dua Belas National Park Jambi for infection diseases treatment, and literature search about the plants using for chemistry and mechanism to treat some diseases.

Result: SAD scantily clad it easier making for skin direct contact with environmental it cause skin infection extremely easy to occur. They use some plant for treat infection diseases, several disease including inflammation, diarrhea, measles, and malaria.

Conclusion: The use and efficacy of a plant in a highly diverse region of the plant can have many benefits and using. Environment and culture are closely linked in the treatment of an ethnic (ethnopharmacy). The diversity of plants and how to use a plant treat infectious diseases a very unique in every ethnic. Plants as a media for treatment diseases were used for each generations, so that usefulness is undoubtedly.

Key Words: Suku Anak Dalam Jambi, inflammation, diarrhea, measles, malaria

INTRODUCTION

Indonesia is a country with many tribes and cultures, one of which Suku Anak Dalam (SAD) in Jambi province. In Bukit Dua Belas National Park precisely in Sarolangun, SAD widely spread population they live in the jungle not familiar with civilization. Their lives are very close and rely on nature, ranging from shelter, chewing betel nut, hunting, and gathering of natural medicine, so that they do not know the civilization of the village. (1) SAD also known as Orang Rimba, they are semi-nomadic life, because of his habit of moving from one place to another. The goal, it could be melangun or moved when people died, avoiding enemies, and open up new fields. Rimba people live in huts, called Sesudungon, construction timber, bark-

walled and thatched leaves Serdang Benal. (2) (3) Based on reports from residents in the area of the Bukit Dua Belas National Park in Jambi, they use some plant for treat infection diseases. Several diseases including inflammation, diarrhea, measles, and malaria. Plants are the basis of traditional medicine around the world, many of the drugs used today are found to originate from a variety of plants. Study of ethnobotany and etnofarmakognosi assist in the identification of plant species with pharmacological potential, as well as to identify the source of the different compounds (4). According to WHO statistic 2014, Infection diseases is the cause of increased mortality rates in Indonesia. (5). Plants are used worldwide for the treatment of diseases, there are more than 20,000 species of higher plant, used in traditional

medicines and are reservoirs of potential new drugs. As the modern medicine and drug research advanced, chemically synthesized drugs replaced plants as the source of most medicinal agents in industrialized countries. Nevertheless plants are an important source of lead compounds. However, in developing countries, the majority of the world's population cannot afford pharmaceutical drugs and use their own plant based indigenous medicines (6).

METHODOLOGY

Survey ethnopharmacology some plant in Orang Rimba at Bukit Dua Belas National Park Jambi for infection diseases treatment, and literature search about the plants. In a first step, some plant species reported in Temenggung database as traditionally used for anti-infection agents (e.g., for inflammation, diarrhea, measles, and malaria diseases), were explored in some journal. The search was limited to terms concerning infection diseases.(7)

RESULT

1. Inflammation:

Inflammation seen from complaints of pain, redness, heat sensation, and swelling in one area of the body. This is actually the body's natural attempt to protect itself; with the aim of eliminating harmful stimuli, including damaged cells, irritants, or pathogens; then start the healing process. the plants used by SAD in overcoming inflammation are:

Sembung Rambat (*Mikania micrantha* H.B.K.)

Leaves of Sembung Rambat (*Mikania micrantha* H.B.K.) to treat infections of the skin, by means of squashing the leaves by hand and then added a bit of saliva and then apply on the infection. Besides this plant is also used to address the fever by boiling the whole plant parts and then drink the water. Sembung Rambat (*M. micrantha* HBK) is included in the

Asteraceae family is one of the wild plants that live as a weed in the sub-tropical and tropical regions, was first discovered in South Florida then spread from Central America, South America, the Caribbean, Mexico, Australia, Tropical Asian countries, West Indian and Pacific Island. (8),(9) Mikanolida, sesquiterpenes dilakton of Mikania different species, are used as medicine by the people of Jamaica that has antibacterial activity, antitumor, antimicrobial, cytotoxic, and phytotoxic. Sesquiterpene compounds, mikanolid, and dihidromikanolid contained in *M. micrantha* plants act as antibacterial and antimicrobial. (10) *M. micrantha* contain essential oils that serve as repellent (11). In the respiratory system mikanin potassium compounds 3-sulfate of *M. micrantha* act as inhibitors of parainfluenza virus type 3 (12). Ethyl acetate extract of the stems and leaves of *M. micrantha* yielded significant results for anti-inflammatory and antibacterial activity. Antiinflammatory activity was tested on mice induced ear tetradecanoylphorbol-13-acetate (TPA), while the antibacterial activity test performed on *Bacillus subtilis* and *Escherichia coli* (3). Research antistres methanol extract of the root of *M. micrantha* by (13) Ittiyavirah and Sajid (2013) showed significant gains in albino rats views of endurance swimming, anoxia time stress tolerance, and the immobilization stress.

Chemical Compounds of Sembung Rambat (*Mikania micrantha* H.B.K.)

All parts of this plant can be used as a treatment. Sembung Rambat leaves have chemical constituents such as phenolic, alkaloids, sesquiterpene, tannins, steroids and flavonoids which can be used for various treatments (3),(14). Mikanolide and sesquiterpene compounds isolated from plants dilactone *M. Micrantha*. (15) A new sesquiterpene compounds isolated from *M. micrantha* like , 3 β -acetoxy-1, 10-epoxy-4-germacrene 12,8;15,6- diolide ; dihydromikanolide; mikanin potassium 3-

sulfate; alpentin, mikanin, and ergosta-7,22-dien-3 β -ol. (12)

***Cayratia trifolia* Linn.**

This plant in Suku Anak Dalam also known as Kapiulun leave *Cayratia trifolia* (*C. trifolia*) Linn Domin Syn. (Family: Vitaceae) is commonly known as fox grape in English, Amlabel, Ramchana in Hindi and Amlavetash in Sanskrit. It is native to India, Asia and Australia. *C. trifolia* is a weak herbaceous climber. Leaves are trifoliated with petioles (2–3 cm) long. Leaflets are ovate to oblong-ovate, (2–8 cm) long, (1.5–5 cm) wide, pointed at the tip. Leaves are green in colour with agreeable odour and bitter taste. The traditional uses of this plant are 5 pieces leaves of *C. trifolia* boiled in 4 cups of water to 2 cups. Taken 2 times a day until the inflammation is gone. (16) Infusion of seeds along with extract of tubers is traditionally given orally to diabetic patients to check sugar level of blood. Paste of tubers is applied on the affected part in the treatment of snake bite. The bark extract has been reported to have antiviral, antibacterial, antiprotozoal, hypoglycemic, anticancer and diuretic activities in animal models (17).

Chemical Compounds of *Cayratia trifolia* Linn.

Whole plant of *C. trifolia* has been reported to contain yellow waxy oil, steroids, terpenoids, flavonoids and tannins by preliminary phytochemical screening. Leaves contain stilbenes, piceid, reveratrol, viniferin and ampelopsin. Stem, leaves, roots are reported to possess hydrocyanic acid and delphinidin. Several flavonoids such as cyanidins are reported in the leaves. This plant also contains kaempferol, myricetin, quercetin, triterpenes and epifriedelanol. (16)

The present work was undertaken to evaluate the antidiabetic activity of roots of *C. trifolia*. As the phytochemical investigations showed the presence of flavonoids in the ethyl acetate extract and they are the known bioactive antidiabetic principles to regenerate the damaged β -cells in pancreas (18).

2. Diarrhea:

Diarrhea is a condition characterized by diluted stools released by frequent bowel movements more often than usual. In general, diarrhea occurs due to consumption of foods or beverages contaminated with bacteria, viruses, or parasites. Usually diarrhea lasts only a few days, but in some cases extends for weeks. The plants used by SAD in dealing with diarrhea are:

Jernang Latex (*Daemonorops* spp)

Jernang (Aracaceae) found in three countries world namely Indonesia, Malaysia and India, but the largest in Indonesia, especially in Jambi, Aceh and Kalimantan. Traditionally the use of latex jernang used as a medicinal herb diarrhea and other digestive disorders. in Indonesia, jernang used as a medicinal herb for diarrhea, blood urine disease, mouth sores and abdominal pain. (19) Some species Jernang in Jambi among others Jernang Bengkarung (*Daemonorops* aff., *Daemonorops maculata* J. Dransf.), Jernang Kalumuai /Jernang Rambai (*Daemonorops draconcella* Becc.), Jernang Kepala Puyuh (*Daemonorops propinqua* Becc.), Jernang Umbut (*Daemonorops draco* Blume.), Jernang Sedingin (*Daemonorops* aff., *Daemonorops propinqua* Becc.). (19) Jernang sap is used for various purposes mainly for medicine and dye. The process to extract sap from the jernang fruits is mainly conducted through two steps which is dry and wet processing steps. Cultivation of the jernang

is generally done by intercropping the jernang with rubber trees (19).

Chemical Compound of Jernang Latex (*Daemonorops* spp)

Jernang (*Daemonorops* spp) latex contain dammaradienol, dracocephalin, dracoflavan A, dracorubin, dracoalban, dracoresene, dracoresinotannol, abietic acid, dehydroabietic acid, isopimaric acid, pimaric acid, sandaracopimaric acid, dracordin, and secobiflavonoid. (6)

3. Measles:

Leishmaniasis is an infectious disease caused by various species of the protozoan parasites of the *Leishmania* genus and transmitted by phlebotomine sandflies. (20) The plants used by SAD in dealing with diarrhea are:

Hartup leaf and root (*Physalis angulata*)

Physalis is an important genus of the Solanaceae family. Most of the species are herbaceous annuals or perennials, native tropical North and South America. Some species have edible fruits and tea made from its roots is considered within popular medicine. The medicinal uses of *Physalis* are numerous: a wide variety of species are used for asthma, urinary problems, rheumatism, and tumors. Their anti-inflammatory and anti-spasmodic properties are also known (20). Traditional use for measles by the Orang Rimba, 1 handful leaves of *P. angulata* boiled in 6 cups of water to 3 cups of water, drinking one cup 3 times a day until measles is gone.

Chemical Compound of Hartup leaf and root (*Physalis angulata*)

Hartup (*Physalis angulata*) contain *Physalins* are the steroidal lactone constituents from

Physalis. The *physalins* are biogenetically related to the withanolides. From leaves is *physalin* B, D, E, F, G, H, I, myricetin, and oleanolic acid. In stems and leaves of *P. Angulata* contain *physagulin* A, B, C, D. From arterial parts contain *physagulin* H, I, J and *phygrine*. From whole plant contain, *physanolide* A, *physalin* U and W, *withangulin* A, B, I. In fruits contain *carotenoide*. (21)

4. Malaria:

is a disease transmitted by mosquitoes from humans and other animals caused by parasitic protozoa (a group of single-celled microorganisms) in Plasmodium type. The plants used by SAD in treating malaria among others:

Empedu tanoh Root or Pasak bumi Root (*Eurycoma longifolia*)

The discovery and development of new antimalarial from natural materials, especially medicinal plants is mostly conducted by researchers in the world in recent decades. *Eurycoma longifolia* root is one of natural source from Indonesia which potential as antimalarial phytomedicine. Water extract of *E. longifolia* had antiplasmodial activity both in vitro and in vivo. The ED₅₀ value was 28.78 mg kg⁻¹, which indicates that the *E. longifolia* root standardized extract has in vivo antiplasmodial activity in Swiss mice infected by *P. Berghei*. (22)

Chemical Compound of Empedu tanoh Root or Pasak bumi Root (*Eurycoma longifolia*)

In *E. Longifolia* root contain of quassinoids (*eurycomanone*, 13, 21-dihydroeurycomanone and 13 α) (21)

epoxyeurycomanone). phytochemical investigation of the stems of *E. longifolia* isolated tirucallane-type triterpenoid; 23,24,25-trihydroxytirucall-7-en-3,6-dione, canthin-6-one alkaloids; 4,9-dimethoxycanthin-6-one and 10-hydroxy-11-methoxycanthin-6-one. (23) for malaria usually SAD population utilize plants that give the bitter taste made godokan.(24)

DISCUSSION

infectious diseases such as inflammation, diarrhea, measles, and malaria that are often experienced by SAD if not treated immediately can cause death. usually often experienced by small children in the tribe. treatment with plants has been very long used by this tribe. these medicinal herbs are preserved in certain terrain in the forest. when it is used these tribal people are obliged to replace it so that the plant is not extinct and the drug remains until the future derivatives.

CONCLUSION

The use and efficacy of a plant in a highly diverse region of the plant can have many benefits and using. Environment and culture are closely linked in the treatment of an ethnic (ethnopharmacy). The diversity of plants and how to use a plant treat infectious diseases a very unique in every ethnic. Plants as a media for treatment diseases were used for each generations, so that usefulness is undoubtedly.

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