The Use of SASAMBO Culture in Learning Natural Product Chemistry to Support Traditional Health Tourism in Lombok and Sumbawa Islands

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Abstract: The SASAMBO (Sasak, Samawa, Mbojo) tribe has a variety of medicinal plants. The abundance of SASAMBO tribal medicinal plants can be used in learning the natural product chemistry which are expected to support traditional health tourism on the islands of Lombok and Sumbawa. Natural product chemistry examines the chemical content associated with the efficacy of a medicinal plant. This linkage can provide scientific support for the use of SASAMBO traditional medicinal plants. The method used in this research is the study of literature and questionnaires. Data sources came from public records, the results of questionnaire responses, and scientific articles related to SASAMBO traditional medicine. The results showed that there were various SASAMBO medicinal plants which were potentially used in the study of natural product chemistry with details, Lombok (Sasak) 43 species, Sumbawa (Samawa) 25 species, and Bima (Mbojo) 35 species. Some of these plant species are used for the treatment of diseases caused by viruses, so it has the potential to be used to treat corona outbreaks. Lombok and Sumbawa islands have abundant medicinal plants, this makes the two islands potential as a traditional health tourism destination.

Keywords: Medicinal plants; SASAMBO; Health Tourism.

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Introduction

Indonesia, which is an archipelago, which certainly has a variety of tribes and traditions. The tradition is mainly in the health field, namely medicine. Clinically there are several medicinal plants used in medicine by the community. The plant was even planted in the home yard by the community. These medicinal plants include: Turmeric, Temu lawak, Kencur, Ginger, Galangal, Salam Leaves, Noni, Cat Mustache, Mahkotadewa, Soka, Jasmine, Papaya, Cocor Duck, Guava, Guava, Fruit Star, Betel, Lime, Katuk, Katuk, Turmeric White, Aloe Vera, Alang-alang, Starfruit Wuluh, Giring Giring, Sweet Potatoes, and Beluntas (Jiwantoro, dkk 2017). One area in Indonesia that has a variety of medicinal plants is the West Nusa Tenggara (NTB) area. NTB has 2 large islands namely Lombok and Sumbawa. The two islands have 3 tribes namely the SASAMBO (Sasak Samawa Mbojo) tribe. The Sasak are on the island of Lombok, the Samawa and Mbojo are on the island of Sumbawa.

The SASAMBO tribe has medicinal plants used in the treatment of various diseases. There are various medicinal plants that can be used to treat diseases caused by viruses, so it has the potential to be used to treat corona outbreaks. The Samawa tribe has one of the most well-known traditional medicines, namely Sumbawa oil, said oil can cure various diseases and is
used for generations by the people of Sumbawa. Sumbawa oil is made from a variety of plant species (Rahayu, 2016).

Traditional medical practices generally utilize various types of plants and animals for the treatment of diseases. Mild and severe diseases are treated by using herbs from certain types of plants and animals found around the yard of the house and in the forest. Such treatment can still be found among rural and urban communities (Sugiarto & Wulansa, 2018). The development of SASAMBO traditional medicine can make NTB a health tourism destination.

The direction of local government policy especially in the tourism sector in NTB is sustainable tourism management. The management of sustainable tourism is guided by the 4 pillars of tourism, namely the development of destinations, marketing of tourism, industry and institutions. To support this, the provincial government issued various policies such as the Visit Sumbawa Lombok Program, Frendly Lombok and the Enchantment of Sumbawa as branding (Munir, U., et al., 2018).

Various cultural properties of SASAMBO medicinal plants can be used in learning Natural Product Chemistry (NPC). In terms of NPC, the efficacy of a medicinal plant is related to the content of secondary metabolites. NPC examines the type, distribution, and function of secondary metabolite compounds contained in organisms. The diversity of secondary metabolites comes from biodiversity. SASAMBO medicinal plant diversity is very high, so that it has the potential to advance the NPC.

**Method**

The method used in this research is the study of literature and questionnaires. Data sources came from public records, the results of questionnaire responses, and scientific articles related to SASAMBO traditional medicine. The data obtained were analyzed quantitatively and quantitatively. The data is processed through 3 three stages of analysis, namely data reduction, data display and conclusion.

**Result and Discussion**

Medicinal plants in the Sasak tribe are about 163 types of plants with different properties and ways of making and using drugs. In addition to Sasak tribe, Sumbawa tribe also has various types of medicinal plants, there are about 40 medicinal plants found in Batu Bangka village, Sumbawa. The Mbojo tribe also has traditional medicinal plants, there are about 45 types of medicinal plants that are used for generations by the mbojo (Bima) tribe community (Ani, N., et al., 2018). The SASAMBO medicinal plants are shown in the Table 1.

| Regional Name | No | Name of Medicinal Plant | Indonesian name | Latin name | Use |
|---------------|----|-------------------------|-----------------|------------|-----|
| Lombok (Sasak)| 1  | Api-api                 | Api-api         | Avicennia officinalis | Treat smallpox |
|               | 2  | Ali beru                | Ajang Kelicung  | Diospyrus vilaria | Treating tiwan and hernia allergy "borot" |
|               | 3  | Ayan/kelicung          |                 | A. grandiflora   | Treat rheumatism and ulcers |
|               | 4  | Bebele                  | Maja            | Aedle marmelos (L) Correa | Treating gonorrhea and mumps |
|               | 5  | Barora                  | Katimaha        | Klenhovia hospita | Treat thrush |
|               | 6  | Blandengan             | Lamtoro/petai/cina | Leucaena glauca (lamk) de wit benth | Anthelmintic |
|               | 7  | Bunga kumbi            |                 | Tabernaemontana sphaerocarpa B1 | Eye medicine |
|               | 8  | Daun bakung            | Daun bakung putih | Crinum asiaticum | Wound medicine |
|               | 9  | Daun bebenyah          | Daun akar aur-aur | Conmelina diffusa Burm f. | Medication for menstruation, fever, and headaches |
|               | 10 | Daun empet-empet       | Daun sisik betook | Desnodium triflorum (L) DC | Medication for wounds and diarrhea |
|               | 11 | Daun geronong bodok    |                 | Crotalaria usaramoensis Baker f | Red eye drops |
|               | 12 | Daun pecut jaran       | Daun pecut kuda | Stachytarpheta jamaicensis (L) Vahl | Cough and tonsill medicine |
|               | 13 | Daun seripa            | Daun tempuh wiyang | Emilia sonchifolia (L) DC | Wound medicine |
|               | 14 | Daun Sesapa            | Daun sembung    | Blumea balsamifera (L) DC | Treating rheumatism, joints, |
| Regional Name | No | Name of Medicinal Plant | Indonesian name | Latin name | Use |
|---------------|----|-------------------------|-----------------|------------|-----|
| Sumbawa (Samawa) | 1 | Aren | Enau | Arenga pinnata Merr | Treat kidney stones and canker sores |
| | 2 | Cabe jawa | Cabai jawa | Piper etrofractum | Treat toothache and enter angina |
| | 3 | Ceplukan | Ceplukan | Physalis Angulata L | Treat hypertension and diabetes |
| | 4 | Dadap | Dadap | Phyllanthus acidus L | Treating fever, intestinal worms and launching menstruation in women |
| | 5 | Gadung | Gadung | D. hispida | Treating leprosy, and calluses |
| | 6 | Gambir | Gambir | Uncaria gambir hunter R | Treat thrush and diarrhea |
| | 7 | Gayam | Gayam | Inocarpus Fagiferus | Diarrhea Medication |
| | 8 | Kecubung | Kecubung | Datura suaveolens Humb | Treating rheumatic asthma and
| Regional Name | No | Name of Medicinal Plant | Local Name | Indonesian name | Latin name | Use |
|---------------|----|-------------------------|------------|-----------------|------------|-----|
|               | 9  | Kenanga                 | Kenanga    | Cananga odorata | back pain  |
|               |    |                         |            |                 | Treating shortness of breath, malaria, bronchitis, scabies, and jaundice |
| Bima (Mbojo)  | 10 | Kesambi                 | Kesambi    | Schleichera Oleosa Merr | treating scabies and scars |
|               | 11 | Kluwih                  | Kluwih     | Artocarpus camansi | Treating scabies and scars |
|               | 12 | Kumis kucing            | Kumis kucing | Orthosiphon Aristatus | Treating kidney stones and diabetes |
|               | 13 | Mangkokan               | Mangkokan  | Polycias Scutellaria | treating inflammation of the breast and difficult to urinate |
|               | 14 | Mengkudu                | Mengkudu   | Morinda citrifolia | Treating hypertension and inflammation of the intestine |
|               |    |                         |            |                 | Treating gonorrhea, inflammation of the intestine |
|               | 15 | Meniran                 | Meniran    | Phyllanthus Niruri L | inflammation of the intestine |
|               | 16 | Merambung               | Merambung  | Vernonia arborea | treating inflammation of the intestine |
|               | 17 | Mindi                   | Mindi      | Melia adezarach | Treating gout, stomach cramps and antioxidants |
|               | 18 | Mundu                   | Mundu      | Garcinia, spp | Smooth the digestive tract and increase blood platelets |
|               | 19 | Patikan kebo            | Patikan kebo | Euphorbia Hirta L | Treating strep throat and bronchitis |
|               | 20 | Randu                   | Randu      | Ceiba pentandra | Treating hemorrhoids, dysentery and heartburn |
|               | 21 | Saga                    | Saga       | Abrus precatorius | Treating hemorrhoids, dysentery and heartburn |
|               | 22 | Sambung nyawa           | Sambung nyawa | Gynura procumbens | Treating cysts, cancer and tumors |
|               | 23 | Serut                   | serut      | Streblus asper, Lour | Treating cysts, cancer and tumors |
|               | 24 | Srikaya groso           | Srikaya    | annanasquamosa | Treating cysts, cancer and tumors |
|               | 25 | Tanjung                 | Tanjung    | Minusops elengi | Treating cysts, cancer and tumors |

| Regional Name | No | Name of Medicinal Plant | Local Name | Indonesian name | Latin name | Use |
|---------------|----|-------------------------|------------|-----------------|------------|-----|
|               | 1  | Anggo                   | Kersen     | Man tingia calabura | Treating gout, stomach cramps and antioxidants |
|               | 2  | Dungga Mbudi            | Jeruk purut | Citrus lyxtrix | Treating joints and gout |
|               | 3  | Dungga Ncia             | Jeruk nipsis | Citrus auratifolia | Treating joints and gout |
|               | 4  | Duwe                    | Jamblang   | Eugenia cumini | Treating stomach aches, silent dysentery and ulcers |
|               | 5  | Garoso Jawa             | Sirsak     | Annona maricata | Treating cholesterol and gout |
|               | 6  | Garoso mbudi            | Srikaya    | Annona squamosa | Treating intestinal worms and digestive disorders |
|               | 7  | Golka                   | Kirinyuh   | Chromolaena odorata | Treating ulcer and vertigo |
|               | 8  | Jambu Doro              | Jambu batu | Psidium guajava | Treating ulcer and vertigo |
|               | 9  | Kajabu                  | Sinstrong  | Crassocephalum | Treating ulcer and vertigo |
|               | 10 | Kajara Sarui            | Bayam duri | Amaranthus spinosus | Treating ulcer and vertigo |
|               | 11 | Kakapi Na’e             | Ketapeng cina | Cassia data | Treating ulcer and vertigo |
|               | 12 | Kambesi                 | Katuk      | Sauropus androgynos | Treating ulcer and vertigo |
|               | 13 | Kana’a                  | Patikan kebo | Euphorbia hirta | Treating ulcer and vertigo |
|               | 14 | Kana’a Keta             | Patikan cina | Euphorbia thymifolia | Treating ulcer and vertigo |
|               | 15 | Mahoni                  | Mahoni     | Swietenia mahagoni | Treating ulcer and vertigo |
|               | 16 | Mangge                  | Asam       | Tamarindus indica | Treating ulcer and vertigo |
|               | 17 | Nceha                   | Tapak Liman | Elephantopus scaber | Treating ulcer and vertigo |
| Regional Name | No | Name of Medicinal Plant | Indonesian name | Latin name | Use |
|--------------|----|-------------------------|----------------|------------|-----|
|             | 18 | Nonu                    | Mengkudu       | Morinda citrifolia | in women |
|             | 19 | Ntonu                   | Lempuyang Gajah | Zingiber zerumbet | Treat hypertension and inflammation of the intestine |
|             | 20 | Pataha                  | Kemangi Hutan   | Kemangi Hutan | Treating colds, headaches and intestinal worms |
|             | 21 | Pate                    | Lamtoro         | Leucaena leucocephala | Treating intestinal worms and ulcers |
|             | 22 | Pawu Keta               | Bandotan        | Ageratum conyzoides | Treat ulcers |
|             | 23 | Rera sawa doro          | Lidah Ular      | Hedystis corymbosa | Treat allerges and infections |
|             | 24 | Rondu                   | Bungur          | Lagerstromea speciosa | Treat colds and headache |
|             | 25 | Ro’o Parongge           | Kelor           | Moringa oleifera | Treat colds and headache |
|             | 26 | Ro’o Praja              | Cincau rambat   | Cyclea barbata Miers | Treat fever and diabetes |
|             | 27 | Sabia                   | Cabai Hutan     | Piper retrofractum | Treat fever and diabetes |
|             | 28 | Sambi                   | Kesambi         | Schleichera oleosa | Treat fever and diabetes |
|             | 29 | Soka                    | Krokot          | Portulaca sp. | Treating intestinal worms and ulcers |
|             | 30 | Songga                  | Bidara Laut     | Strychnos lucida | Treating intestinal worms and ulcers |
|             | 31 | Supa                    | Secang          | Caesalpinia sappan | Treating intestinal worms and ulcers |
|             | 32 | Tamba                   | Bretonwali      | Tinospora crispa | Treating intestinal worms and ulcers |
|             | 33 | Tatanga                 | Jarak Pagar     | Jatropha curcas | Treating intestinal worms and ulcers |
|             | 34 | Tula                    | Pulai           | Alstonia scholaris | Treating intestinal worms and ulcers |
|             | 35 | U’a                     | Pinang          | Areca catechu | Treating intestinal worms and ulcers |

Source: Public records, questionnaire responses, and scientific articles (Yamin, et al., 2018; Jannah & Safnowandi 2018)

The data in Table 1 shows the diversity of traditional medicinal plants owned by the SASAMBO community. The diversity of medicinal plants provides evidence that the rich nature of Indonesia. Various medicinal plants, indicating the efficacy of these medicinal plants. Ranging from treatment for minor illnesses to treatment for severe illness. All parts of the medicinal plant can be processed based on a hereditary prescription from the ancestors. Several species of plants are used to treat diseases caused by viruses, so it has the potential to be used to treat corona outbreaks.

Literature studies show that various parts of the SASAMBO medicinal plant can be formulated as a healing herb, namely:

1. Leaves

The process of compounding the leaves of medicinal plants as a healing herb, namely: (1) the leaves are ground, (2) given a little water and placed on the body that feels pain. As for other ways of processing medicinal plant leaves namely. (1) boiled leaves of medicinal plants, (2) then drink the water. (Jannah, & Sasnowandi, 2018).

2. The stem

The process of compounding the stems of medicinal plants as a nutritious concoction, is done in a way that is, (1) the stems of medicinal plants are boiled in a container filled with water and (2) the boiled water is drunk (Ariadi, L., 2017).

3 pieces

The processing of medicinal plants is carried out in several ways, namely: (1) the fruit is ground (mashed) (2) then filtered the fruit that has been mashed (3) add water to the screening process. (Yamin M, et al, 2018).

4. Root

The process of processing the roots of medicinal plants is carried out in several ways, namely: (1) the roots are boiled in a container filled with water (2) the boiled water is drunk. (Jannah, & Ridwan, 2017). Flower are usually used without being processed and directly used by the community. (Sugiarto, & Wulansari, 2018).

The concoctions produced by the SASAMBO community are diverse and nutritious. If the medicinal plants and concoctions of the SASAMBO community...
are well managed, they can become a separate income for the SASAMBO community. This management can be in the form of community empowerment and the provision of facilities in the development of health tourism (herbal). Herbal tourism is one of the attractive tourist destinations for tourists because of its natural beauty, herbal products, and the friendliness of its people (Waruwu, et al, 2020).

The SASAMBO medicinal plants described above can be used in learning Natural Product Chemistry (NPC). NPC examines the type, distribution, and function of secondary metabolite compounds contained in organisms. The secondary metabolite compounds referred to are terpenoids, steroids, phenyl propanoids, polyketides, flavonoids, and alkaloids.

Learners can do a project-based learning by isolating secondary metabolite compounds found in SASAMBO medicinal plants. Learning projects can vary each year by replacing plant species that have been isolated from their chemical contents. This activity will give students the opportunity to improve higher order thinking skills such as critical thinking skills, creative thinking skills, decision making skills, and problem solving skills related to the process of isolating secondary metabolites from SASAMBO medicinal plants.

Conclusion

The diverse medicinal plants of the SASAMBO community and the effective concoction of concoctions can make the island of Lombok and Sumbawa as a health tourism destination (herbal). The various SASAMBO medicinal plant species can be used in the study of natural product chemistry (NPC). NPC examines the chemical content associated with the efficacy of a medicinal plant. These skills can provide scientific support for the use of SASAMBO traditional medicinal plants.

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