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The Utilization Ethnobotany Spice Based On Sundanese Local Wisdom Community in Kelurahan Gununggede Subdistrict Kawalu Tasikmalaya City As Teaching Materials Supplement

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Abstract: The purpose of this study is to describe an ethnobotanical study of the use of spices based on local wisdom in the Sundanese people in Gununggede Village, Kawalu District, Tasikmalaya City. This research method was carried out in a qualitative descriptive manner with semi-structured observation and interview techniques. The selection of respondents using purposive snowball sampling method and obtained the number of respondents as many as 20. The results showed 31 types of plants belonging to 17 families. Zingiberaceae is the most common family with 6 species. The results of the analysis use the cultural significance index (ICS). The results showed that the highest ICS value was 30 for shallots (Allium cepa) and garlic (Allium sativum) and the lowest 9 for chili bendol (Capsicum chinense) and vegetable starfruit (Averrhoa bilimbi). The results of this study can be concluded that plant species with high ICS values are the species most frequently used and their function cannot be changed in cooking dishes.

Keywords: ethnobotany, local wisdom, spices

INTRODUCTION

Indonesia is an archipelagic country located between the two oceans and the two continents that it consists of of 17,500 islands (Fuadi, 2020) . Kusmana & Wisdom (2015) State that with condition geographical the causing the State of Indonesia to have riches abundant nature, so that known as a mega-biodiversity country, although breadth only 1.3% of wide the land of the Indonesian State has diversity tall plant, presumably there are 20,000 species plant flowers in the world live in Indonesia and 40% of them is plant Indonesian original.

Diversity species plants also followed with diversity the benefits for human , among others that is as material food, seasoning cook or spices, ingredients building (Syamsiah, 2014) . Setiyawan (2020) state that the country of Indonesia is known as a producing country commodity quality

spices. This showed with arrival several countries on the continent Europe to Indonesia throughout 16th and 17th centuries. The thing done Because height mark economy spices at that time as well as height needs and benefits to be obtained from trading commodity spices .

Spice is type plants that have a strong taste and aroma as well as function as spice or adder taste and aroma in food. Parts plant spices used can form flowers, leaves, fruit, skin stems, stems, and roots of course parts the own characteristic or specificity like contain compounds that can produce a distinctive aroma, can give a taste to the product, can repair color, got prevent damage food as well as can preserve food Putri & Fibrianto (2018: 3). According to Hakim (2015:10) explain that plant spice usually utilized in circumstances dry, wet or fresh though part big from spice present in form dry even Already mashed so that present in form powder.

Spice tightly relation with life every day, mostly for spice in activity cook (Dyah Pramesthi et al., 2020). It in accordance with what Putri & Fibrianto said (2018: 4) Spice utilized in form single or mix, in form mixture usually spice produce characteristic taste, color and aroma ok. In generally Indonesian plants that have component specific form oil essential called as spices and names spice if in utilization used as material for repair *flavor* from something food as well as aim for increase preference somebody to something Cook or food. More carry-on Putri & Fibrianto (2018: 5) explain that spice is mixture from the usual spices added during processing or cooking material food, however there are also spices extra used after food the finished cooked or the usual called with *condiments* for example pepper powder, chili powder as well as chili sauce. Spice or spice the added because everyone has level desire, especially in taste. Because that mixture several type spice can produce spice with specific taste characteristics.

Sundanese people is ethnic group the majority inhabit the western part of the island Java, society Sunda known own a number of type Cook local special taste for example *surabi, hayam bakakak, karedok,* and *lotek.* Although use some spices area or ethnic group no far different. However no can denied that every area own peculiarity in utilise plant for made spice traditional, the influenced by the combination and dose use spice or spice so that can bring up distinctive taste from cook local. Knowledge utilization spice the obtained in a manner down knowledge lowest from generation before, so if knowledge This no documented worried will is lost along with happening current globalization as well as change style live, because That need done studies or study ethnobotany about utilization spice-based wisdom local public Sundanese.

Results interview initial done to citizen, he says besides plant

ornamental, or plant shade the community in the region Ward Mountain Big likes it too plant a number of type plant spice Good it's in the garden, the yard home, even use pots or *poly bag.* Passion public in plant spice This in line with benefits provided by plants spice That Alone for example function as plant occasional medication needed for make potion or herbs even as spice in Cook daily.

Objective from study This is to describe the ethnobotanical study of the use of spices based on local wisdom in the Sundanese people in the Kelurahan Gununggede Subdistrict Kawalu City of Tasikmalaya as a supplement to teaching materials which will later be published in form *booklet.*

METHOD

Method research used in research use approach qualitative. According to Hardani et al., (2020) approach qualitative is something study scientific purpose. For understand something phenomenon with collecting data as complete as possible (expansionism). On approach This prioritize appreciation to something phenomenon so that researcher involved directly with object under study.

Study carried out in September to month December 2021 in the Kelurahan Gununggede Subdistrict Kawalu City of Tasikmalaya. Target study This is ethnicity Sunda inhabitant original Gununggede, has knowledge wide about plant spices and their benefits in dish food and drink typical sundanese, aged over 20 years, with technique taking sample *purposive snowball sampling* .

Instruments used in research. This is researcher plunge Alone spaciousness for do interview, observation and documentation so that capable collect the necessary data for reveal research conducted. According to Sugiyono (2013) in method qualitative survey of researchers have become an instrument for doing observation, interview, *focus group discussion*, study documentation and triangulation. In interview qualitative, researcher can do interview in a manner direct or *face-to-face interview* with participant, interview they with telephone, or involved in the focus group interview (interview in group certain) which consists in six until eight participant group. Interview the is interview with characteristic question public and open. Deep data processing and analysis techniques study This is *Index of Cultural Significance* (ICS) and percentages familia, habitus and parts plants used.

For analyze mark culture something plant so need done technique data analysis using *Index of Cultural Significance* (ICS) Batoro, (2015) confirmed the data obtained from field served in form tabulation, then analyzed in a manner descriptive with approach quantitative that is with

use equality analysis mark interest culture or *Index of Cultural Significance* (ICS). Analysis This aim for evaluate or measure interest something type plant for public local. Through study ICS analysis can determined and known types or most important varieties, important and less important even No is known in life A ethnic. For count *Index of Cultural Significance* done with equality as following:

$$\text{ICS} = \sum_{i=1}^{n} (q \times i \times e)_{ni}$$

If the usability is owned species plant more from very hence the calculation formula develop to be :

$$\text{ICS} = \sum_{i=1}^{n} (q_1 \times i_1 \times e_1)_{ni} + (q_2 \times i_2 \times e_2)_{n2} + \cdots + (q_n \times i_n \times e_n)_{ni}$$

Note: ICS = Index of Cultural Significance, is equality amount mark, to use something type plantfrom usage 1 to to n, n shows utility final from something type plants, meanwhile letter i show value 1 to to n, and so on. Calculation parameter value of something type plant is as follows. q = value quality (*quality value*) is mark quality something plant based on utility something type plant. i = value intensity, is mark utilization from useful kind. e = value exclusivity or level favorite.

Percentage *familia*. Plant can grouped based on *familia*, then counted percentage based on formula:

$$= \frac{\sum \text{Spesies tumbuhan dari familia tertentu yang digunakan}}{\sum \text{total spesies dari seluruh familia}} \times 100\%$$

Habitat percentage

The percentage habitus represents magnitude something the plant habitus species used to all existing habitus. The habitus covers trees, shrubs, shrubs, lianas, herbs, and others. The formula used for count percentage habitus, namely:

$$= \frac{\sum \text{Spesies habitus tertentu yang digunakan}}{\sum \text{total spesies}} \times 100\%$$

Percentage part plants used _ covers part plants used covers leaf until to root. For count percentage used part, using formula :

$$= \frac{\sum \text{bagian tertentu yang digunakan}}{\sum \text{seluruh bagian tanaman dari seluruh spesies}} \times 100\%$$

RESULTS AND DISCUSSION

Study This analyze about utilization spice based wisdom local Sundanese people in Kelurahan Gununggede subdistrict Kawalu City of Tasikmalaya. Study This done to Mother House ladder and ladder cook in the Kelurahan area Gununggede Subdistrict Kawalu City of Tasikmalaya.

Study This done in a manner direct visit House respondents in the Kelurahan Gununggede. As for the subject study totaling 15 (fifteen) mothers House stairs and 5 (five) interpreters cook the whole manifold sex girl. Based on results research that has done, type the plants used as spice in dish food and drink in the Village Gununggede Subdistrict Kawalu City of Tasikmalaya can seen more in Table 1.

Familia Zingiberaceae Lots utilized Because own diverse benefits, among others as phytopharmaca and fulfillment need culinary or as spice cooking. it _ in line with what is revealed by Evizal (2013:29) that *Zingiberaceae* is *familia* of which it is a member numerous and is a genus of plants drug traditional and medicinal pharmacy. From several type rhizome or fruit besides used as material medicine, also known as spice or spice both in food, and drink, ingredients dyes and cosmetics. More carry on according to Liana (2019) plant ginger has has utilized as spice cooking and medicine traditional. rhizome *zingiberaceae* contain oil easy attrition - evaporate with smell aromatic. Utilization *Zingiberaceae* as material spice cooking (spice) and herbal medicine of course make *Zingiberaceae* own mark economy.

Table 1. Type plant spices used in the Kelurahan Gununggede.

No.	Familia	Common name / surname local / Scientific name	Habitus	Plant part	Utilization Pattern
1	Apiaceae	Coriander/ Katuncar/ *Coriandrum sativum*	herb	seed	Flavor, aromatic, neutralizer
2	Asparagaceae	Suji/ suji/ *Dracaena angustifolia*	herb	leaf	Aromatic, coloring
3	Euphorbiaceae	Candlenut/ muzzle/ *Alleurites moluccana*	Tree	Seed	Taste
4	Fabaceae	Sour java/ Asem/ *Tamarindus indica*	Tree	Fruit	Flavor, Aromatic, Neutralizer
5	Illiciaceae	Star anise/ flower mace/*Illicium verum*	shrub	Flower	Aromatic
6	Lamiaceae	Basil / Surawung / *Ocimum africanum*	Bush	Leaf	Flavor, Aromatic, Neutralizer
7	Lauraceae	Cinnamon / _ Cinnamon / _ *Cinnamomum burmanii*	Tree	Bark	Flavor, Aromatic, Neutralizer
8	Liliaceae	Onion red / Onion Beureum / *Allium is fast*	Herbs	tubers	Flavor, Aromatic, Neutralizer
9		Onion white / Onion bodas / *Allium sativum*	Herbs	tubers	Taste, Aromatic

No.	Familia	Common name / surname local / Scientific name	Habitus	Plant part	Utilization Pattern
10		Onion leaves / Onion leaves / *Allium fistulosum*	Herbs	Leaf	Taste, Aromatic
11	Myrtaceae	Regards/ Regards/ *Syzigum polyanthum*	Tree	Leaf	Aromatic, Neutralizer
12		Cloves / Cloves / *Syzygium aromaticum*	Tree	Flower	Flavor, Aromatic, Neutralizer
13	Oxalidaceae	Star fruit vegetables / Star fruit wuluh / *Averrhoa bilimbi*	Tree	Fruit	Taste
14	Pandanaceae	fragrant pandan / Pandan/ *Pandanus amarillifolius*	Herbs	Leaf	Aromatics, Dyes
15	Piperaceae	Pepper / Pepper / Spicy/ *Piper nigrum*	Bush	Seed	Flavor, Aromatic, Neutralizer
16	Poaceae	Lemongrass/ Lemongrass / *Cymbopogon citratus*	Herbs	Leaf base	Flavor, Aromatic, Neutralizer
17	Rutaceae	Orange purut / Orange purut / *Citrus hystrix*	Shrub	Leaves and Fruit	Flavor, Aromatic, Neutralizer
18	Rutaceae	Orange thin / Orange thin / *Citrus aurantifolia*	Shrub	Fruit	Flavor, Aromatic, Neutralizer
19	Solanaceae	Chilli cayenne domestic / chili sheep / baby / *Capsicum frutescens*	Shrub	Fruit	Flavor, Aromatic, Neutralizer
20	Solanaceae	Chilli red big / chili green, chili curl . beureum chili / *Capsicum annum*	Shrub	Fruit	Flavors, Aromatics, Colorants, Neutralizers
21	Solanaceae	Chilli bendol / *Capsicum chinense*	Shrub	Fruit	Taste
22	Solanaceae	Tomato / *Solanum lycopersicum*	Shrub	Fruit	Flavors, dyes
23	Zingiberaceae	Jahe/ Jahe/ *Zingiber officinale*	Herb	Rhizome	Flavor, Aromatic, Neutralizer
24	Zingiberaceae	Kencur/ Cikur/ *Kaempferia galanga*	Herb	Rhizome	Flavor, Aromatic, Neutralizer
25	Zingiberaceae	Kunyit/ Koneng/ *Curcuma domestica*	Herb	Rhizome	Flavors, Aromatics, Colorants, Neutralizers
26	Zingiberaceae	Kecombrang/ Rombeh atau Honje/ *Etlingera elatior*	Herb	Flower, fruit	Flavor, Aromatic, Neutralizer

No.	Familia	Common name / surname local / Scientific name	Habitus	Plant part	Utilization Pattern
27	Zingiberaceae	Kapulaga/ Kapol/ *Elettaria cardamomum*	Herb	Seed	Flavor, Aromatic, Neutralizer
28	Zingiberaceae	Lengkuas/ Laja/ *Alpinia galanga*	Herb	Rhizome	Flavor, Aromatic, Neutralizer

Family Solanaceae is order second from *familia* most used. Plants in *the family* This own benefit as spice working cook as additional flavors, neutralizers and even dye. The most frequent species utilized in Cook that is *Capsicum annum* and *Capsicum frutescens.* Onion red, onions white and onions leaf is species plant with *family Liliaceae*. plant the often used almost every cuisine in the area ward mount. Because the function of alone add aroma and flavor to dishes food.

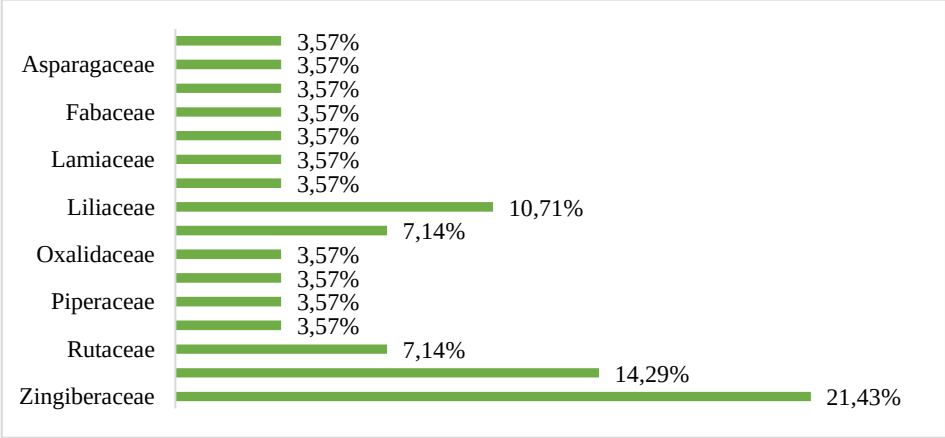

Figure 1. Percentage based on *familia.*

Familia Zingiberaeceae, Sonalaneace, and *Liliaceae* is the most common plants cultivated by society area Gununggede (Figure 1). Because besides easy planted and cared for plants in the family the own diverse benefits, easy found as well as own period relative harvest.

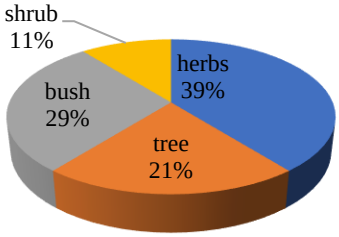

Figure 2. Habitus percentage.

The diversity species plant spice consists on some habitus. Habitus is stature grow something plant like trees, shrubs, shrubs climbing, lianas, herbs, and epiphytes. Habitus diversity includes entire habitus each species plant (Susanti et al., 2018). The type of habitus present in study are 4 types that is trees, shrubs, herbs, and shrubs. Based on Figure 2 regarding the percentage of plant habitus that it consists of from herb 11 species (39 %), 3 species of shrubs (10%), trees as many as 6 species (21%), shrubs as many as 8 species (28%).

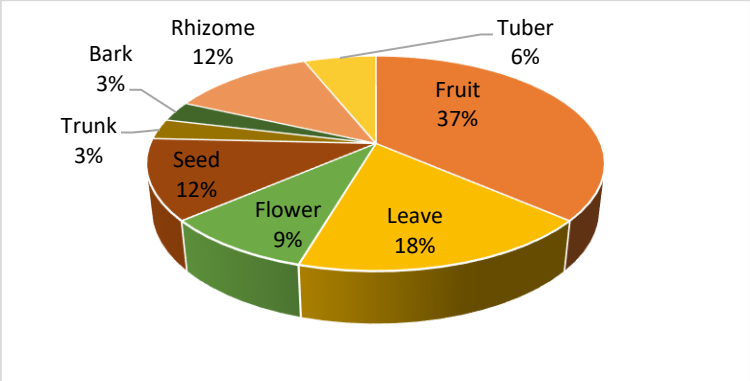

Figure 3. Percentage part the plants used.

Based on percentage part plants used, plant parts can grouped into 8 types that is fruit, tubers, rhizomes, skin stems, stems, seeds, flowers and leaves. Based on results interviews and observations, section the most plants used in study This is fruit as many as 12 species (37%) which are sour java, starfruit, oranges lime, orange purut, chili cayenne domestic, chili cayenne lamb, chili red, chili greens, chilies curly, chili bendol, tomato, *honje*. There are 6 species plants (18%) were part the leaves utilized namely Suji (*Dracena angustifolia*), basil (*Ocimum basilicum*), fragrant pandanus (*Pannus amarillifolius*), onions leaves (*Allium fistulosum*), salam (*Syzygium polyanthum*) and oranges purut (*Citus hystrix*) (Figure 3). There are 4 types plants used the rhizome with percentage as much as 12% which are turmeric (*Curcuma domestica*), ginger (*Zingiber officinale*), galangal (*Alpinia galanga*) and kencur (*Kaempferia galanga*). Seed section own percentage as much as 12% there are 4 types plant which are coriander (*Coriandrum sativum*), hazelnut (*Alleuriteus moluccana*), pepper (*Piper nigrum*), and cardamom (*Elettaria cardamomma*). Next part flower own percentage as much as 9% with 3 species plant that is clove (*Syzygium aromaticum*), kecombrang (*Etlingera elatior*), and flowers mace (*Illicium verum*) Then as for utilization tubers on research This is as many as 2 species (6%) of layered tubers on onion red (*Allium cepa*) and onions white (*Allium sativum*). Plants used part stem only there is 1 species namely lemongrass (*Cimbopogon citratus*) or as much as 3%. Plants used skin stem there is 1

species yes wood sweet (*Cinnamomum burmanii*).

Table 1. Cultural Significance Index Value

No.	Local name / Scientific Name	ICS value
1	Coriander (***Coriandrum sativum***)	24
2	Suji (***Dracaena angustifolia***)	12
3	Kemiri (***Alleuriteus moluccana***)	12
4	Sour java (***Tamarindus indica***)	12
5	Basil (***Ocimum basilicum***)	24
6	Cinnamon (***Cinnamomum burmanii***)	18
7	Onion red (***Allium cepa***)	30
8	Onion white (***Allium sativum***)	30
9	Onion leaves (***Allium fistulosum***)	15
10	Regards (***Syzygium polyanthum***)	24
11	Clove (***Syzygium aromaticum***)	18
12	Star fruit vegetables (***Averrhoa bilimbi***)	9
13	Pandanus amarilifolius (***Pandanus amarilifolius***)	24
14	Pepper (***Piper nigrum***)	24
15	Lemongrass (***Cymbopogon citratus***)	24
16	Orange kaffir lime (***Citrus hystrix***)	24
17	Orange lime (***Citrus aurantifolia***)	12
18	Chilli domestic cayenne pepper (***Capsicum i frutescens***)	24
19	Chilli cayenne lamb (***Capsicum i frutescens***)	12
20	Chilli red (***Capsicum annum***)	24
21	Chilli green (***Capsicum annum***)	12
22	Chilli curly (***Capsicum annum***)	24
23	Chilli bendol (***Capsicum chinense***)	9
24	Tomato (***Solanum lycopersicum***)	15
25	Ginger (***Zingiber officinale***)	24
26	Kencur (***Kaempferia galanga***)	24
27	Turmeric (***Curcuma domestica***)	24
28	Kecombrang (***Etlingera elatior***)	24
29	Cardamom (***Elettaria cardamoma***)	18
30	Galangal (***Alpinia galanga***)	24
31	Star anise (***Illicium verum***)	18

Based on Table 2 ICS (Index of Cultural Significance) numbers results ICS calculations show level interest every type plant spice benefit the community sundae. Based on results plant data analysis spices used by the people sundae in Kelurahan Gununggede obtained data as following :

Table 2. Mark level interest culture spice useful (ICS)

No.	Predicate	Score	Species plant	amount
1	Very high	30	Onion red , onions white	2
2	Tall	20-29	coriander , basil , salam , pandan, pepper , lemongrass, orange purut , chili cayenne , chili red , chili curly , ginger , kencur , turmeric , kecomrang , galangal	15
3	Currently	10-19	suji , candlenut, tamarind java , wood sweet , onions leaves , cloves , oranges lime , chili cayenne lamb , chili green , cardamom , tomato , flower gate .	12
4	Low	1-9	star fruit vegetables , chilies goosebumps	2
5	No is known	0	-	-

From the results research and data calculation accordingly Table 3 shows that in processing material food, dish food and drink Still need plant spice traditional as seasonings and boosters the flavors in their dishes serve. The following ICS calculation results based on value quality, value intensity, and value exclusivity. According to public Sunda onion white and onions red own highest ICS value ie 30 is used as spice working spices as flavour, and aromatic. The results of interviews also show that skin from onion red normal utilized in making boiled egg as dye natural.

calculation results in table 1 are based on the guidelines ICS counts, which in the study This only use One variable counting q value (*quality value*) which are including into the category worth 3 ingredients food others (adding taste, aroma, sweetness and seasonings) other flavor enhancers, supplements as mixture form food, packaging material food and other materials used in preparation making material food, ingredients cigarettes, feed cattle and animals), makes score 30 as mark the highest on the ICS count in the study this.

CONCLUSION

Based on research conducted, it found 31 species plant spices used as spice in processing food in the Village Gununggede Subdistrict Kawalu City of Tasikmalaya. The part of the plant used that is leaves, fruit, seeds, rhizomes, stems, skin stems, flowers, and tubers. Then method processing or its use there are 6 ways that is used fresh and whole, fresh and creamed, dry and whole, dried and creamed, fresh and sliced, and grated. Based on category plants used public sundae in the kelurahan Gununggede results calculation *Index Cultural Significance* (ICS) there are 2 species that show mark index interest highest culture among them that is onion red *(Allium cepa),* and onions white *(Allium sativum)* with ICS value of 30. Species the is the most frequently species used as well as function in processing dish cooking. Final result writing study This will arranged in form *booklet* with hope will give donation knowledge in learning ethnobotany.

REFERENCE

Batoro, J. (2015). *Environmental Management with Ethnobiology-Ethnobotany Approach* (UB Press Team (ed.)). UBPress.

Dyah Pramesthi, Isyana Ardyati, & Agus Slamet. (2020). The Potential of Herbs and Seasonings Used in Local Cuisine of Buton as a Source of Learning. *Biodik , 6* (3), 225-232. https://doi.org/10.22437/bio.v6i3.9861 Evizal, R. (2013). *Herbs and Phytopharmaca Plants* . Lampung University Research Institute.

Fuadi, A. (2020). *Diversity in the Dynamics of Socio-Cultural Socio-Cultural Competence Bonds the Nation* . Deeppublish Publisher.

Hakim, L. (2015). *Herbs and Herbs in Community Home Yards* . Diandra Creative. Hardani, Andriani, H., Ustiawaty, J., Utami, EF, Istiqomah, RR, Fardani, RA, Sukmana, DJ, & Auliya, NH (2020). *Book of Qualitative & Quantitative Research Methods* (H. Abadi (ed.)). CV. Group Science Library.

Kusmana, C., & Hikmat, A. (2015). Flora Biodiversity in Indonesia. *Journal of Natural Resources and Environment Management , 5* (2), 187-198. https://doi.org/ doi: 10.19081/jpsl.5.2.187 Lianah. (2019). *Mijen Zingiberaceae Biodiversity Semarang City* . Deeppublish Publisher.

Putri, W., & Fibrianto, K. (2018). *Spices for Food and Health* . UB Press.

Setiyawan, R. (2020). *Indonesian Spices in the World Market* . Tanamiku Books. Sugiyono. (2013). *Quantitative Research Methods, Qualitative and R&D* . Alphabet. Sunyoto, M., Arifin, HR, & Kurniati, D. (2018). *Worldwide Spices from Indonesia that Become the Prima Donna of the World* . Bitread Publishing.

Susanti, AD, Wijayanto, N., & Hikmat, A. (2018). Diversity of Medicinal Plants Agroforestry Repong Damar Krui, Lampung Province.

Conservation Media , 23 (2), 162-168.

Shamsiah. (2014). Exploration of traditional medicinal plants in West Malinau District, Malinau Regency. *Journal of Bionature , 15* (2), 127-136. http:// ojs.unm.ac.id/bionature/ article/ download/1560/624