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# ETHNOBOTANICAL STUDY OF MEDICINAL PLANTS USED TO TREAT HUMAN DISEASES IN REJANG TRIBE, SEKAYUN MUDIK VILLAGE, BENGKULU, INDONESIA

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## INTERNATIONAL CONFERENCE ON BIODIVERSITY FOR LIFE SUSTAINABLE DEVELOPMENTOF INDONESIABIODIVERSITY

## ETHNOBOTANICAL STUDY OF MEDICINAL PLANTS USED TO TREAT HUMAN DISEASES IN REJANG TRIBE, SEKAYUN MUDIK VILLAGE, BENGKULU, INDONESIA

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### Abstract

This study documents information on significant ethnomedicinal plants, which was collected from traditional healers of Rejang tribe in Sekayun Mudik village of Bengkulu. The study focused g) documentation of medicinal plants used to treat various human diseases in the study area. The informa n was obtained through open-ended, semi strucutral questionnaires and guided feld walks. A total of 32 ethnomedicinal plants species, which 3 ere distributed in 25 families used to treat 32 human diseases in the community. Of these, 18 species were obtained from the wild ecosystem, and 14 plants were cultivated. Of a majority of documented species, herbs and leaves were the most utilized plant parts for the preparation of ethnomedicinal (60%). Concerning the traditional method of drug preparation, the decoction was the most community utilized. Among the documented species, the dominant families were Acanthaceae, Arecaceae, Euphorbiaceae, Lamiaceae, Poaceae, Rutaceae and Zingiberaceae with 2 species respectively. The plant that presented a major relative importance were Murraya paniculata. Curcuma longa, Jatropha curcas, Orthosiphon stamineus, Piper b and Zingiber officinale. Effort to conserve and cultivate medicinal plants is non existent. To save medicinal plants from further loss, involving local communities in cultivation of the most utilized medicinal plants is recommended.

Keywords : Bengkulu, medicinal plants, rejang tribe, Sekayun Mudik village, traditional knowledge

## I. INTRODUCTION

Medicinal plants have important contributions in the healthcare system of local communities as the main source of medicinal for the majority of the rural population (Abbink, 1995). According to detail from the World Health Organization (WHO), about 80% of the world's population, especially the rural people of developing countries, still primarily sely on traditional medicine (Islam, 2006).

Ethnomedicinal knowledge is usually passed verbally from one generation to the next through family members (Nadembega et al, 201) and most of this knowledge has not been formally documented (Asase et al, 2008). Adequate information of such knowledge, and especially of traditional ethnomedicinal practices is important because

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ethnomedicinal healers have a long essociation with herbs and their medical properties (Kabir et al, 2014). The knowledge and use of plants is an integral part of many ethnic rural cultures, such as Rejang tribe in Bengkulu District, the extent of which has not yet been studied in depth (Pei et al, 2009).

On a world wide scale, due to the globalization trend, the traditional knowledge including that regarding the medicinal plants, vanishes and get lost even more. The use of synthetic and artificial products is on the rise and at the same time indigenous plant species are replaced with introduced ones which push out the plant use traditionally (Koleva et al, 2015). More over, in recent years there has been a continous decline in traditional medicinal practices, because of reduced intertest in the younger generation toward traditional treatment system. These factors have contributed to the rapid loss of this rich knowledge (Kader et al, 2013). It is, therefore necessary to preserve this indigenous knowledge on traditional medicine by proper documentation, identification of plant species used and herbal preparation. To save medicinal plants from further loss, involving local communities in cultivation of the most utilized medicinal plants is recommended.

## II. RESEARCH METHODS

## A. StudyArea

The study was carried out in Rejang community located in Sekayun Mudik Village, Bengkulu District. The village is about 32 km far from Bengkulu. Bengkulu is a lowland district with an area of 70.71 km sq. km, between 102°11'24" - 102°37'12" East longitude and 3°28'48" - 3° 5'36" South Latitude. The economy of this village is predominantly agricultural and plantation. Climate within the village is typically wet climate, the average annual rainfall is 3.394 mm.

## B. Field Study and Data Collection

The field survey was carried out from December 2012 to January 2019 at Rejang community in Sekayun Mudik village, Bengkulu District. A total of 32 (9 males 21 females) informant were interviewed in the study area, in which all the informants were selected purposively based on the recommendation of knowledgeable elders and local authorities. All of the informants were local inhabitants. The formation was mostly provided by adult woman (72%) because they usually know the plants better than men and younger people. They provided useful and firsthand information on the popular use of medicinal plants. Males (28%) were also interviewed to examine their medicinalknowledge.

Ethnobotanical investigation were carried out to collect data on medicinal plants use to treat human ailment. The methodological approaches weresemi-structured

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interview, field observation and guided field walks. Interviews and discussion based on a checklist of questionnare. Information was carefully recorded during interviews with each informant. Field observations were performed with traditional healers guided on the morphological features and habitats of each medicinal plant species. The information obtained was cross-checked with other informants. The information such as local name, habit, wild/cultivation, availability of medicinal plants and traditional medicinal uses of plants were recorded.

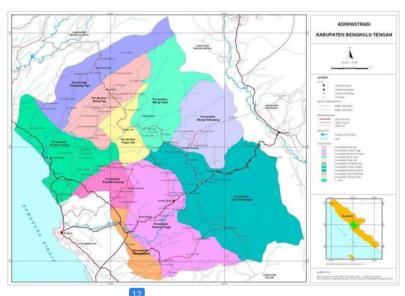


Figure 1. A map of the study area

## III. RESULTS AND DISCUSSION

## A. Medicinal plants of the study Area

The routs showed that the people of Rejang tribe in Sekayun Mudik village have used 32 medicinal plants belong to 32 genera and 24 families to treat 32 human ailment (Table 1.). Of these 32 species of medicinbal plants collected from the study area, most of them 18 (56,3%) were obtained from the wild habitats whereas 14 (43,7%) werte from home garden. The majority of plants used as medicine were freely harvesteds by traditional healers from natural environment. Generally fresh part were wild harvest. The plant family are dominated by Lamiaceae, Acanthaceae, Arecaceae, Euphorbiaceae, Fabaceae, Poaceae and Zingiberaceae with 2 species (6,25%) respectively (Figure 1.). Similar results were reported by other ethnobotanist, Silalahi and Nisyawati (2018). Silalahi and Nisyawati (2018). Silalahi and Nisyawati (2018) reported that the top fivelargest

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families in the home garden of Batak Karo in North Sumatra Indonesia are the Zingiberacea, Poaceae, Fabaceae, Arecaceae and Acanthaceae. Similar results wee reported by other ethnobotanist (Khastini et al, 2019). Khastini et al (2019) according to them, that Lamiaceae, Acanthaceae, Arecacea Lephorbiaceae, Fabaceae, Poaceae and Zingiberaceae were the dominant families. The dominance of Lamiaceae species in treating ailments may be due to the richness in essential oil (Nieto, 2017) that have both diuretic and vasodilator effect (Adam et al, 2009). It was found that, Murraya paniculata, Curcuma longa, Jatropha curcas, Orgosiphon stamineus, Piper betle and Zingiber officinale were the most commonly used species (Table 1).



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Table 1. Inventory of Medicinal Plants Traditionally Used by People in Rejang tribe of Sekayun Mudik Village, Bengkulu

No.	Scientific name	Local name	Family	Life form	Part used	Preparation and uses
-	15 Aloe vera (L.) Burm 11 and	Lidah buaya	Asphodelaceae	Herb	Leaves	Mucus from inside of leaves, add a little salt,
	ulcer Aloe vera (L.) Burm.f	Lidah buaya	Asphodelaceae	Нетр	Leaves	applied on affected treating for Mucus from inside of leaves, and applied on affected are treating for burn wound
2. treating	Andrographis paniculata Nees	Sambiloto	Acanthaceae	Herb	Leaves	Boiled with water and drunk he liquid for typhus
treating	Andrographis paniculata Nees ing	Sambiloto	Acanthaceae	Herb	Leaves	Squeezed the fresh part, drunk the liquid for fever
3. treati	3. Annona muricata L. treating diabetes	Srikayo	Annonaceae	Herb	Leaves	Boiled with water and drunk the liquid for
4. urina	4. Areca catechu L. urinary stone	Punbakeak	Arecaceae	Tree	Youngstem	Boiled with water, taken orally treatingfor
S. S	Arenga pinnata (Wurmb.)Merr.	Beluluk	Arecaceae	Tree	Fruit	Boiled with water, taken orally treating for uric
6.	Averrhoa bilimbi L.	Belimbing	Oxalidaceae	Tree	Fruit	Boiled with water and drunk the liquid for treating hypertension
7. Bahapatitis	Bambusa vulgaris Schrad. itiis	Hawurkuning	Poaceae	Tree	Bud	Boiled with water, taken orally for treating

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Squeeze the fresh part, add alittle salt and duink	Grinding, decoction, drunk the liquid for worms	2 Pound fresh part, applied on the affected area Burn wound	Squeezed, and drunk the liquid for ttreating	Squeezed the fresh part, the liquid mix with lime	on the armpit and clean with water treating for odor	Sap of petipole, applied on affected area treating	Shredded the fresh part, enveloped by banana	set on tire, applied on the affected area freating. Shredded the fresh part. Squeezed, drunk the gastricism	Boiled with water, drunk the liquid treating for	5  Boiled with water and drunk the liquid treating	
Leaves	Seeds	Leaves	Fruit	Fruit		Petiole	Rhizome	Rhizome	Leaves	Leaves	
Tree	Tree	Herb	Tree	Tree		Herb	Herb	Herb	Herb	Shrub	
Caricaceae	Caricaceae	Apocynaceae	Rutaceae	Rutaceae		Araceae	Zingiberaceae	Zingiberaceae	Poaceae	Acanthaceae	
Sangsilo	Sangsilo	Tapakdara	Jeruknipis	Jeruknipis		Keladi	Beikunik	Beikunik	Serai	Daunungu	
CaricapapayaL.	inkriquid Caricapapayal. treatingintestinal	9 Catharathus roseus(L.)G.Don treatingfor	CitrusaurantifoliaSwingle gh	CirrusaurantifoliaSwingle betel applied	reducing body	11. Colocasia esculenta (L.)Schott. for cut wound	Curcuma longaL. leaves, bum or	for itching  CurcumalongaL.  liquid treatingfor	Cymbopogon nardus(L.)Rendle gh	Graptophyllum pictum(L.)Griff.	
8. C.	теай	9 rreati	10. cough	betel	reduc	11. for $\alpha$	12.		13 c	14 for	C

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promoting menstruation after birth.  Soiled with water and drunk the liquid treating excessive bleeding during menstruation dan th.	Pound the fresh part, applied on the affected bum wound	Smeared with vegetable oil, withered until abdomen treating for intestinal worm	Sap of petiole applied on the affectedarea	Fresh seeds consume daily treating for intestinal	Boiled with water and taken orally for treating	Soiled with water and drunk the liquid treating	Pound the fresh part, applied on the affected sprain	Grinding, drunk the liquid treating forasthma
Leaves E e c	Leaves	Leaves	Petiole treating for sprue	Seed	Leaves	Leaves	Leaves	Leaves
Shrub	Herb	Shrub	Shrub	Shrub	Herb	Shrub	Shrub	Shrub
Malvaceae	Balsaminaceae	Euphorbiaceae	Euphorbiaceae	Fabaceae	Limnocharitaceae	Muntingiaceae	Rutaceae	Rutaceae
Kembangrayo	Pacarair	Jarakpagar	Jarakpagar	Petaicina	Selayau	Seris	Kemuning	Kemuning
15 Hibiscusrosa-sinensisL. for	16 ImpatiensbalsaminaL. area treatingfor	17 JarophacurcasL. warm appliedon	JatrophacurcasL.	18 Leucaena leucocephala (Lamk.) deWit worms	19 Limnocharis flava(L.)Buchenau uric acid	20 Muntingiacalabura L. for diabetes	F21 Muraya paniculata(1.)Jack area treatingfor	Muraya paniculata(L.)Jack
					<b>∠</b>			

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Kumis kucing Lamiaceae Herb Leaves  Jambeu mentega Lauraceae Tree Leaves  hypertension  Boerl. Cempaka dewa Thymelaeceae Tree Fruit  Daun iben Piperaceae Liana Leaves  Daun iben Piperaceae Liana Leaves  and other part	urinarystone OrthosyphonstamineusBenth. Kumis kucing Lamiaceae Herb Leaves Uppertension Perseaamericana Mill. Jambeu mentega Lauraceae Tree Leaves treadingfor hypertension Phaleria macrocarpa(Scheff.)Boerl. Cempaka dewa Thymelaeceae Tree Fruit treadingfor Tree Leaves Phperbentel. Daun iben Piperaceae Liana Leaves pain of eye Piperbentel Daun iben Piperaceae Liana Leaves and other part discharge	urinarystone OrthosiphonstamineusBenth. Kumis kucing Lamiaceae Herb Leaves Spertension Perseaamericana Mill. Jambeu mentega Lauraceae Tree Leaves treatingfor hypertension Phaleria macrocarpa(Scheff.)Boerl. Cempaka dewa Thymelaeceae Tree Fruit treatingfor treatingfor Daun iben Piperaceae Liana Leaves Spin of eye PiperbetleL. Daun iben Piperaceae Liana Leaves and other part discharge	24 Orthosiphonstamineus Benth.	Kumis kucing	Lamiaceae	Herb	Leaves	5 Boiled with water and drunk the Jiquid treating
Orthosiphonstamineus Benth.     Kumis kucing     Lamiaceae     Herb     Leaves       Perseaamericana Mill.     Jambeu mentega     Lauraceae     Tree     Leaves       Phaleria macrocarpa(Scheff.)Boerl.     Cempaka dewa     Thymelaeceae     Tree     Fruit       PiperbetleL.     Daun iben     Piperaceae     Liana     Leaves       PiperbetleL.     Daun iben     Piperaceae     Liana     Leaves       PiperbetleL.     Daun iben     Piperaceae     Liana     Leaves       PiperbetleL.     Dauniben     Piperaceae     Liana     Leaves	Orthosiphonstaminens Benth.     Kumis kucing     Lamiaceae     Herb     Leaves       Perseaumericana Mill.     Jambeu mentega     Lauraceae     Tree     Leaves       Phaleria macrocarpa(Scheff.)Boerl.     Cempaka dewa     Thymelaeceae     Tree     Fruit       Piperbettel.     Daun iben     Piperaceae     Liana     Leaves       Piperbettel.     Daun iben     Piperaceae     Liana     Leaves       Piperbettel.     Daun iben     Piperaceae     Liana     Leaves       Piperbettel.     Daun iben     Piperaceae     Liana     Leaves	OrthosiphonstamineusBenth.     Kumis kucing     Lamiaceae     Herb     Leaves       Perseamericana Mill.     Jambeu mentega     Lauraceae     Tree     Leaves       Phaleria macrocarpa(Scheff.)Boerl.     Cempaka dewa     Thymelaeceae     Tree     Fruit       PiperberleL.     Daun iben     Piperaceae     Liana     Leaves       PiperberleL.     Daun iben     Piperaceae     Liana     Leaves       PiperberleL.     Daun iben     Piperaceae     Liana     Leaves       PiperberleL.     Dauniben     Piperaceae     Liana     Leaves	for urinarystone					
Per sea annericana Mill.       Jambeu mentega       Lauraceae       Tree       Leaves         Phaleria macrocarpa(Scheff.)Boerl.       Cempaka dewa       Thymelaeceae       Tree       Fruit         PiperberleL.       Daun iben       Piperaceae       Liana       Leaves         PiperberleL.       Daun iben       Piperaceae       Liana       Leaves         PiperberleL.       Dauniben       Piperaceae       Liana       Leaves	Per seamericana Mill.       Jambeu mentega       Lauraceae       Tree       Leaves         treatingfor       Phaleria macrocarpa (Scheff.)Boerl.       Cempaka dewa       Thymelaeceae       Tree       Fruit         PiperbetteL.       Daun iben       Piperaceae       Liana       Leaves         PiperbetteL.       Daun iben       Piperaceae       Liana       Leaves         PiperbetteL.       Dauniben       Piperaceae       Liana       Leaves	Perseamericana Mill. Jambeu mentega Lauraceae Tree Leaves hypertension Phaleria macrocarpa(Scheff.)Boerl. Cempaka dewa Thymelaeceae Tree Fruit treatingfor PiperbetleL. Daun iben Piperaceae Liana Leaves cted area PiperbetleL. Dauniben Piperaceae Liana Leaves discharge	OrthosiphonstamineusBenth. forhypertension	Kumis kucing	Lamiaceae	Herb	Leaves	Soiled with water and drunk the liquid treati
hypertension  Phaleria macrocarpa (Scheff.) Boed. Cempaka dewa Thymelaeceae Tree Fruit  treating for  Piperbetle L. Daun iben Piperaceae Liana Leaves  Piperbetle L. Daun iben Piperaceae Liana Leaves  Piperbetle L. Daun iben Piperaceae Liana Leaves  and other part	Phaleria macrocarpa(Scheff.)Boerl. Cempaka dewa Thymelaeceae Tree Fruit treatingfor treatingfor  PiperbetleL. Daun iben Piperaceae Liana Leaves  PiperbetleL. Daun iben Piperaceae Liana Leaves  cted area and other part  discharge	Phaleria macrocarpa (Scheff.) Boerl. Cempaka dewa Thymclaeceae Tree Fruit treatingfor  Piperbettel Daun iben Piperaceae Liana Leaves pain of eye  Piperbettel Daun iben Piperaceae Liana Leaves and other part  discharge	25 Perseaamericana Mill. day treatingfor	Jambeu mentega		Tree	Leaves	Boiled with water and drunk the liquid twice
Phaleria macrocarpa(Scheff.)Boerl.       Cempaka dewa       Thymelaeceae       Tree       Fruit         PiperbetleL.       Daun iben       Piperaceae       Liana       Leaves         PiperbetleL.       Daun iben       Piperaceae       Liana       Leaves         cted area       Dauniben       Piperaceae       Liana       Leaves	Phaleria macrocarpa(Scheff.)Boerl.       Cempaka dewa       Thymelaeceae       Tree       Fruit         PiperbetleL.       Daun iben       Piperaceae       Liana       Leaves         PiperbetleL.       Daun iben       Piperaceae       Liana       Leaves         PiperbetleL.       Daun iben       Piperaceae       Liana       Leaves         PiperbetleL.       Dauniben       Piperaceae       Liana       Leaves         Aischarge       Liana       Leaves	Phaleria macrocarpa (Scheff.)Boerl.       Cempaka dewa       Thymelaeceae       Tree       Fruit         PiperbetteL.       Daun iben       Piperaceae       Liana       Leaves         PiperbetteL.       Daun iben       Piperaceae       Liana       Leaves         cted area       and other part       Liana       Leaves         discharge       Liana       Leaves	hypert	ension				
PiperbetteL.  PiperbetteL.  Piperaceae Liana Leaves I Daun iben Piperaceae Liana Leaves I cted area  PiperbetteL.  Daun iben Piperaceae Liana Leaves t and other part	PiperbetleL.  Paun iben Piperaceae Liana Leaves I Daun iben Piperaceae Liana Leaves I cted area  PiperbetleL.  Daun iben Piperaceae Liana Leaves I discharge  discharge	Piperbettel Daun iben Piperaceae Liana Leaves I pain of eye Piperbettel Daun iben Piperaceae Liana Leaves I piperbettel Dauniben Piperaceae Liana Leaves discharge		Cempaka dewa	Thymelaeceae	Tree	Fruit	Flesh of fruit boiled with water, drunk the liq
PiperbetteL.       Daun iben       Piperaceae       Liana       Leaves       I         PiperbetteL.       Daun iben       Piperaceae       Liana       Leaves       I         red area       Piperaceae       Liana       Leaves       I         PiperbetteL.       Dauniben       Piperaceae       Liana       Leaves	PiperbetteL.       Daun iben       Piperaceae       Liana       Leaves       1         PiperbetteL.       Daun iben       Piperaceae       Liana       Leaves       1         PiperbetteL.       Dauniben       Piperaceae       Liana       Leaves       t         PiperbetteL.       Dauniben       Piperaceae       Liana       Leaves       t         discharge       discharge       Liana       Leaves       t	PiperbetteL.       Daun iben       Piperaceae       Liana       Leaves       I         PiperbetteL.       Dauniben       Piperaceae       Liana       Leaves       I         PiperbetteL.       Dauniben       Piperaceae       Liana       Leaves       I         PiperbetteL.       Dauniben       Piperaceae       Liana       Leaves       I         Aischarge       Liana       Leaves       I       I						diabetes
teL. Daum iben Piperaceae Liana Leaves I  table Daumiben Piperaceae Liana Leaves and other part	teL. Daum iben Piperaceae Liana Leaves I  Daumiben Piperaceae Liana Leaves  discharge	teL. Daun iben Piperaceae Liana Leaves I  Dauniben Piperaceae Liana Leaves  discharge	Д	Daun iben	Piperaceae	Liana	Leaves	Fresh leaves soaked with warm water, treatin
Dauniben Piperaceae Liana Leaves and other part	Dauniben Piperaceae Liana Leaves and other part discharge	Dauniben Piperaceae Liana Leaves and other part discharge	PiperbetleL.	Daun iben	Piperaceae	Liana	Leaves	Boiled with water, and the liquid spashed on treating for itching
	part	part	PiperbetleL.	Dauniben	Piperaceae	Liana	Leaves	Boiled with water, and drunk some othe liqu
used on affected area				and oth	er part			used on affected area treating for vaginal
				dischar	se se			0

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	Pound the fresh part, applied on the affected	toothache	Frsh leaves chewed together with seed of betel	strengthening teeth	Pound tghe fresh part applied on theaffected	uleer,	Pound the rind of young fruit, squeezed drunk	treating for malaria Pounding the fresh part, squeezed, drunk the	hemorrhoid	Pounding the young leaves, squeezed, drunk the	for diarrhea	Boiled with water, taken orally treating for	Boiled with water and drunk the liquid treating	Boiledwithwater,mixwithpalmsugar,drunk treating forbody	Boiled with water, mix with palm sugar, drunk treating for relieve menstrual pain and		
	Leaves		Leaves		Leaves		fruit	leaves		leaves		Leves	Leaves	Rhizome	Rhizome		
	Liana		Liana		Tree		Shrub	Shrub		Shrub		Shrub	Herb	Herb	Herb		
	Piperaceae		Piperaceae		Fabaceae		Myrtaceae	Myrtaceae		Myrtaceae		Euphorbiaceae	Lamiaceae	Zingiberaceae	Zingiberaceae		
	Daun iben		Daun iben		Jeing		Janmeutelung	Janmeutelung		Janmeutelung		Katuk	Piung	Jahe	Jahe		
1	$Piper\ bette\ L.$		Piper bette L.	וותי תכשוווה זסו	viumlobatum Benth.	area, ucating for	29 Psidium guajava L. thelianid	Psidium guajava L.	nquia treating 101	Psidium guajava L.	וולחום הפמוווה	30 Sauropus androgynus (L.)Merr. promoting lactation	31 Plectranthus scutellaroides(L.)R.Br. For poorappetite	32 Zingiber officinaleRoscoe the liquid freshener	Zingiber officinale Roscoe the liquid	C	

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## B. Growth Form of Medicinal Plants

The result of life frowth analysis of medicinal plants showed that herbaceous plants constituted the highest propportion represented by 12 (37,5%), while there were 10 (31,2%) tree species, 8 (25%) shrub species, 1 (3,1%) liana and 1 (3,1%) epiphyte species (Figure 2). This finding shows that the most represented life forms of medicinal plants in the study area were herbs for wed by tree. Similar result reported with analogous studies conducted elsewhere (Jima and Megersa 2018: Kasrina et al, 2015). For instance, Juma and Megersa (2018) identified 48,6% herbs and 24,3% trees from Bale Zone of Oromia Regiene State in Berberic District, South East Ethiopia, while Kasrina et al (2015) documented 43,6% herbs and 25,6% trees from Mukomuko regency, Bengkulu province, Indonesia.

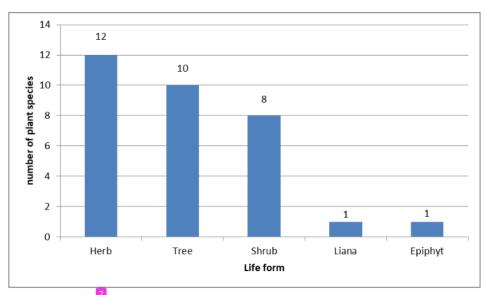


Figure 2. Life form of medicinal plants in the study area

## C. Plant Part Used to Treat Human Diseases

People of the study area harvest different plant part for tge preparation of traditional remedies (e.g leaves, fruits, petiole, rhizome, young stem, bud, seeds and balb). In the study area, 21 species (60%) were harvested for their leaves (Figure 3). This is because it is believed that leaves contain the highest medicinal properties and part of olant that most easily harvested. The finding of leaves as the contributorof

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higher number of plant species used for medicinal purpose than other plant part in line with similar study conducted by Malini *et al* (2017) in which leaves (51,8%) were reported as the most widely used plant part followed to stem (22,9%). The study conducted by Khan et al (2018) showed that leaves 41% as a major plant part used in the treatment of humanailment.

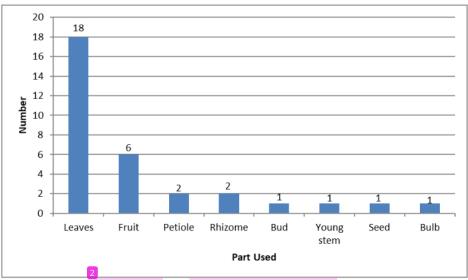


Figure 3. Plant part used for treatment of human ailment

## D. Method of Preparation and Administration

In the collection of data concerning the preparation of medicine, Informants reported various skills associated with herbal preparation. The result showed that all remedies were prepared from a single plant. Similarly, various research findings reported the use of single plant species of parts for traditional remedy preparation (Nahdi et al. 2016; Zenebe et al. 2012) Most of the medicinal plant preparations involved the use of single plant species or a single plant part while thosemixing different plant parts were less encountered in the study area. The dependency of local people on fresh material is mostly due to the effectiveness of fresh medicinal plant in treatment as the content are not lost before use compared to the driedforms.

The local communities employ various method of preparation of traditional medicines for different type of diseases. The preparation vary based on the type and actual site of diseases treated. The principal methods of remedy preparation were reported to be through decoction for 21 preparations (65,7%) powdering accounted for 6 preparation (18,7%) and squeezing accounted for 5 preparation (15,6%). Decoction asthemostcommonmodeofpreparationisinagreement with the findings of Pacifica

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et al (2018) and Taek et al (2019) who noted that the principal method of remwdy preparation was through decoction.

Medicinal plants were applied through different routes of administration (Table 1). In the study area, the substantial proportion of prescription were administrated orally (67,4%), followed by external application (30,2%) and chewing (2,3%). This result is in line with the findings of Malini et.al. (2017) and Khan et al., (2018). Internal aliment were commonly tretaed by making the patient drink herbal preparations; tooth infection was treated by pounding and applies on the affected area on the tooth surface; skin infections such as ulcer werte treated by creaming herbal preparation on an infected skin.

## E. Diseases Treated in the Study Area

The medicinal plants were used to treat 32 human ailments in the study area. With regard to human diseases, Diabers, intestinal worms, hypertension and burns wound were diseases wich a higher number of medicinal plants (3 species) were prescribeds, follow by cough, ulcer, urinary stone, uric acid, malaria, itching, promoting lactation Bone problem were treated with one species, *Murayya paniculata*. Skin problem with 7 species (21,9%) used for treatment, and respiratory problem were treated with one species, *Murraya paniculata* (Table 1).

## IV. CONCLUSIONS AND RECOMMENDATION

## A. Conclusion

A study on medicinal plant utilization in area revealed that Rejang communities of Sekayun Mudik village use the medicinal plants for maintaning their primary healthcare, The study resulted in documenting 32 medicinal plants species where some families, e.g. Acanthaceae, Arcaceae, Fabaceae, Euphorbiaceae, Lamiaceae, Poaceae and Zingioberaceae are the leading family with the highest proportion of medicinal plants. Most of (18) medicinal plants in the study area were harvested from wild habitats. Herbs were found to be dominant growth from of medicinal plant used for preparation traditional remedies and followed by trees. Leaves were found to be the most frequently used plant parts for the preparation of traditional femedies. Traditional medicinal preparation mostly involves a single plant and method of prepration was mainly decoction, foolowed by powdering. Depletion of indigenous knowledge among the people of study area was serious due to disinterest of young generationtogaintheknowledge. Efforttoconservetheplants and associated

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indigenous knowledge was observed to be very poor. Conservation of medicinal plants by local communities is vital to avoidloss.

## B. Recommendation

Medicinal plants played a significant role in healing human disorder in Rejang community of Sekayun Mudik illage, Bengkulu. However, agricultural expansion and disinterest of young generation resulted in the reduction or loss both medicinal plants and associated indigenous knowledge. It is, therefore, necessary to preserve indigenous knowlwdge on traditional medicines by proper documentation, identification of plant used and herbal preparation. To safe medicinal plants for further loss, involving local communities in cultivation of the most utilized medicinal plants is recommended.

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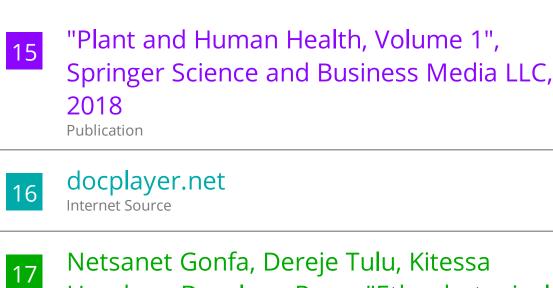
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