The Dynamics of the Repong Damar Vegetation in Krui Pesisir Barat

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Abstract Repong Damar is a plantation management system that is cultivated and managed by the Krui community, Lampung. The time of this research was conducted in July 2020. The research locations were carried out in Pahmungan and Pekon Gunung Kemala Pekon. The method used in this research is 25 plots in Pahmungan Pekon and 25 Mount Kemala Pekon Plots, Krui, Pesisir Barat Regency, Lampung Province, Indonesia. This study aims to determine the dynamics of Repong Damar vegetation. In Pahmungan Pekon found 19 species of tree phases with a total of 131 trees. 13 species of pole phase trees, 6 types of sapling phase trees, and 26 species of undergrowth and seedling phase trees. In Pekon Gunung Kemala, there were 7 types of tree phases, 7 types of tree pole stages, 4 types of tree piles, and 17 species of plants under the seedling phase. The most dominant tree species in Pahmungan Pekon and Gunung Kemala Pekon are Damar, so that the Dappiness Value Index (INP) of Damar trees in Pahmungan Pekon is 119.44 and INP in Pekon Gunung Kemala is 178.711. Communities in Pahmungan Pekon and Gunung Kemala Pekon still depend on the economy of the community by searching for gum resin (Shorea javanica), Repong Damar is the success of agroforestry managed by local communities which are still traditional. the Pahmungan Pekon and the Mount Kemala Pekon. The need for government education in protecting the cat eye (Shorea javanica) ecosystem in Krui,

I.   PRELIMINARY

Repong damar (Kolbinur and Hutagalung, 2016) is a management system of plantation crops whose ecosystem is a stretch of plants that forms a forest that is cultivated managed by the community. Geographically, Pahmungan Pekon is located on the edge of the Bukit Barisan Selatan National Park (TNBBS), so it is important as a buffer for the nature conservation area (Findua et al, 2016). According Saputri et al (2015) Repong in the terminology of the West Coast community is a piece of dry land that is overgrown with diverse types of productive plants from various types of wood that have economic value. Called repong resin because the cat's eye tree (Shorea javanica) is the dominant number of stands in each repong field. Repong Damar is one example of the success of agroforestry managed by local communities that are still very traditional (Dewi and Harianto, 2015). Susanti et al (2018), explained that agroforestry is a system of forest land management by combining forestry plants and agricultural crops with the aim of obtaining maximum results from both while still paying attention to the conservation aspects of a land. The use of this agroforestry system according to Pardona et al (2017) has many advantages compared to a land management system with one species (monoculture). Chakraborty et al (2015) in Rajagukguk et al (2018) state that agroforestry systems can limit pest attacks and increase crop production. One example of agroforestry is Repong Damar on the Krui Coast of Lampung, which produces resin resin products (Lensari and Yuningsih, 2017). The management of the resin repong in the Krui coastal area of Pesisir Barat Regency, Lampung Province is one of the biodiversity preservation models carried out by the community (Hidayah, 2007; Putri and Wulandari, 2015).

The Krui people refer to natural forests as Pulan and damar agroforestry as Repong. The vertical structure and the Pulan and Repong ecosystems are not much different. Both are marked by the high diversity of natural biota which is a component. The composition of the Pulan and Repong mosaics that lay green now has covered a cluster of hills along the west coast of Lampung Province to the boundaries of the Bukit Barisan Selatan National Park

(TNBBS) in the north and northeast. The resin that is harvested periodically provides regular cash income for family income. Repong plants can also be obtained by other products such as firewood, building materials and also various types of medicinal plants (Lubis, 1997).

According to Lensary (2011) explains that the ecological development phase of Repong Damar resembles the succession stage of natural forests with all its ecological benefits, such as soil protection, microclimate evolution, and so forth. From a technical point of view of cultivation, the stages of planting productive plants, ranging from subsistence plants to old plants where the maintenance is intentional or not by farmers that takes place in suitable ecological conditions. Changes in species diversity can occur due to hotspots (Izzo et al, 2006; Riniarti et al, 2017).

Cat's eye resin (Shorea javanica) belongs to the family dipterocarpaceae,

with the following classification:

Diviso : Spermatophyta

Fillum : Angiospermae

Class : Dicotyledone

Sub Class : Dialypetalae

Order : Theales / Guttiferales

Family : Dipterocarpaceae

Genus : Shorea
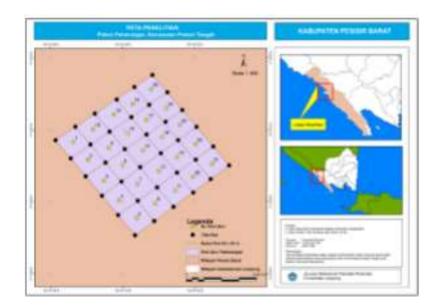
Species : *Shorea javanica* (Harianto, et al. 2016).

Shorea javanica generally bear fruit every 4-5 years and the seeds produced can only last for 10 days. The Krui people plant damar trees under coffee stands for 4-6 years. The first tapping is done at the age of 15-20 years from planting and can produce resins for 30-50 years. Therefore, research on plant dynamics in the Krui repong damar needs to be carried out to provide a comprehensive picture of changes in vegetation conditions in the dung resamar from year to year and as a form of monitoring and evaluation of community-based forest management

models that need to be preserved. Damar plantations in the Regency of Pesisir Barat are community plantations that have been hereditary, and some even reach the age of 70 years (Hidayan, 2015; Anasis and Sari, 2015).

II.   RESEARCH METHODS

A. Research Time and Location

The time of this research was carried out in July 2020. The research location was in the resin dunk area which consisted of 2 (two) permanent resin dots, each of which had an area of one ha. Pesisir Barat Regency has an area of around 2,809.71 Km2 (Hadiyan, 2015). Administrative research plots are included in the Pahmungan and Pekon Gunung Kemala, Krui, Pesisir Barat, Lampung Province, Indonesia regions as shown in Figure 1. and Figure 2.

Picture. 1. Research Location of Repong Damar Vegetation Dynamics in Krui Pesisir Barat at Pahmungan Pekon July 2020.

Picture. 2. Research Location of Repong Damar Vegetation Dynamics in Krui Pesisir Barat
At the Kemala Mount Pekon in July 2020.

B. Research Tools and Materials

Equipment that will be used are (1) Suunto Clinometer and Christen meters, used to measure tree height; (2) Tape diameter and meter, used to measure the diameter of a tree; (3) Stationery, used to record measurement results; (4) Compass, used in determining direction to assist in making measurement plots; (5) Mining, used to make measuring plots with 20 mx 20 m = 400 m2 each; (6) Wood paint and brushes, used to mark trees that have been measured, so that repeated measurements do not occur against the same tree; (7) Zinc plates, hammers and nails are used in numbering trees.

C. Research methods

Vegetation analysis is done by making plots in the observation plot. Measurements were made at two locations, namely Pahmungan Pekon and Gunung Kemala Pekon. In Pahmungan Pekon,

25 plots were made and 25 Kemek Gunung Pala plots were made. Measurements were made using the census method, which measures all the trees that are inside the plot.
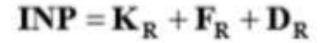
D. Data Collection in the Field

The stages of implementation are detailed as follows:

a. Implementation begins with the rearrangement of plot boundary markers that are damaged such as boundary pal and zinc plates. All zinc plates bearing the identification number of each individual tree.

b. Determine 25 plots in an observation plot of 20m x 20m, 10m x 10m, 5m x 5m and 2m x 2m. Measuring plots were made using raffia ropes as the boundaries of each measuring plot.

c. The 20m x 20m plot is counted by the number of individual tree species including the height and diameter of the tree, calculated by the number of individuals of each tree species, measured by the diameter and height of the tree. Plots of 10m x 10m are calculated individual tree pole stages covering height and diameter. Plots of 5m x 5m are calculated individual tree saplings covering height and diameter. And in the 2m x 2m plots the number and species of individual seedlings of the seedlings and undergrowth were calculated.

d. Trees that have been numbered and measured, are given paint as a sign so as not to be repeated in subsequent measurements. Embroidery plants are recorded in species and height. While the species of dead plants are recorded and their causes.

e. Data from the field measurements are then calculated the values of density, relative density, frequency, relative frequency, relative dominance, index of values important to determine the vegetation type and diversity index of each type.

E. Data analysis

The Importance Value Index (INP) is a form of analysis of vegetation data (Fachrul, 2006; Michael, 1995; Soerianegara and Indrawan, 1982). Important Value Index is the sum of Relative Density (KR), Relative Frequency (FR) and relative dominance.

$$INP = K_R + F_R + D_R$$

Keterangan:
INP : Indeks nilai penting dari suatu jenis tumbuhan
K_R : Kerapatan relatif dari suatu jenis tumbuhan
F_R : Frekuensi relatif dari suatu jenis tumbuhan
D_R : Dominasi penutupan relatif dari suatu jenis tumbuhan

III.   RESULTS AND DISCUSSION

A. The Dynamics of Repong Damar in Pekon Pahmungan

The Repong Damar Pekon Pahmungan area is a forest consisting of mixed stands, so there is a need for vegetation analysis using the INP method. INP is an analysis parameter to find out which plants dominate a vegetation in a forest area (Indriyanto, 2006; Bhaskara et al, 2018). The form of agroforestry repong resins that resembles natural forests has a physical uniqueness and a huge contribution to the economy in the West Coast of Lampung (Laura et al, 2019). Resin is a forest product from plant sap that is frozen due to organ injury and air contamination (Langenheim, 2003; Andhika et al, 2015). According to Wijayanto and Hartoyo (2015), the canopy strata in Repong Damar are varied due to the diverse composition of stands.

Table 1. Diversity of Tree Species on a 20m x 20m plot in the Pahmungan Pekon

	Local Name	Scientific name	total LBDs	Individual	Plot	K	KR	F	FR	D	DR	INP
1	Petai	*Parkia speciosa*	625.00	2	2	50	1.53	.15	3.64	15625.00	0.33	5.49
2	Pulai	*Alstonia scholaris*	1207.09	3	2	75	2.29	.15	3.64	30177,15	0.64	6.57
3	Durian	*Durio Zibethinus*	20159.08	4	3	100	3.05	0.23	5.45	503976.91	10,68	19.19
4	Resin	*Shorea javanica*	94378.50	60	13	1500	45.80	1,00	23.64	2359462,58	50.00	119.44
5	Duku	*Lansium domesticum*	33866.16	30	12	750	22.90	0.92	21.82	846654.06	17.94	62.66
6	Pepper	*Piper Ningrum*	2407.80	4	4	100	3.05	0.31	7.27	60195.06	1.28	11.60
7	Andita	-	3184.71	1	1	25	.76	0.08	1.82	79617.83	1.69	4.27
8	Rambutan	*Nephelium lappaceum*	561.78	1	1	25	.76	0.08	1.82	14044,59	0.30	2.88
9	Bayur	*Pterospermum javanicum*	23046.50	15	6	375	11.45	0.46	10.91	576162.42	12.21	34.57
10	Kabau	*Archidendron microcarpum*	390,13	1	1	25	.76	0.08	1.82	9753.18	.21	2.79
11	Haneban	-	4740,13	1	1	25	.76	0.08	1.82	118503.18	2.51	5.09
12	Medang Seluang	*Litsea spec.*	439.89	2	2	50	1.53	.15	3.64	10997.21	0.23	5,40
13	Mangosteen	*Garcinia mangostana*	296.26	1	1	25	.76	0.08	1.82	7406.45	.16	2.74
14	Samang Wood	-	472.05	1	1	25	.76	0.08	1.82	11801,35	0.25	2.83

Table 1. Diversity of Tree Species on a 20m x 20m plot in Pahmungan Pekon (continued)

	Local Name	*Scientific name*	total LBDs	Individual	Plot	K	KR	F	FR	D	DR	INP
15	A copy	-	357,40	1	1	25	.76	0.08	1.82	8935.11	.19	
16	Ricup	*Baccaurea racemosa*	733.76	1	1	25	.76	0.08	1.82	18343.95	0.39	2.97
17	Taro Wood	-	306.05	1	1	25	.76	0.08	1.82	7651.27	.16	2.74
18	Heling	-	140.45	1	1	25	.76	0.08	1.82	3511.15	0.07	2.66
19	Binjai	*Caesian Mangifera*	1429.62	1	1	25	.76	0.08	1.82	35740.45	.76	3.34
	TOTAL			131		3275	100	4.23	100	4718558.92	100	300.00

Table 1 shows if the species of Cat's Eye Damar (Shorea javanica) is found more than other

tree species, and after that there are species of fruit plants that people use as seasonal income in

addition to harvesting cat eye resin. The existence of cat eye species and fruit plants in Repong Damar in Pekon Pahmungan can improve the sustainability of ecosystems, this is because the time of seasonal harvesting between harvesting resin and fruit plants can encourage the existence of ecosystem sustainability in Repong Damar and according to Fahrizal (2017) it is a local wisdom found in the Krui Pesisir Barat Community, Lampung from generation to generation. The highest INP in Repong Damar Pekon Pahmungan is the Cat Eye Damar species (Shorea javanica) with an INP value of 119, 19 and the next largest INP are Duku species (Lansium domesticum) with an INP value of 62.66 and Bayur (Pterospermum javanicum) with an INP of 34.57. Data on the diversity of pole types in the 10 mx 10 m plog in Pahmungan Pekon can be seen in Table 2.

Table 2. Diversity of Pole Tree Type on 10m x 10m Plots in Pahmungan Pekon

No.	Local Name	Scientific name	tot LBD	Individual	Plot	K	KR	F	FR	D	DR	INP
1	Resin	*Shorea javanica*	775.64	12	9	12000	31.58	0.69	28.14	775636.94	35.75	95.48
2	Duku	*Lansium domesticum*	706.69	9	7	9000	23.68	0.54	21.89	706687,90	32.58	78,15
3	Tangkil	*Gnetum gnemon*	38.54	1	1	1000	2.63	0.08	3.13	38535.03	1.78	7.53
4	Ricup	*Baccaurea racemosa*	28.74	3	3	3000	7.89	0.23	9.38	28742.04	1.32	18.60
5	Pulai	*Alstonia scholaris*	192.12	3	3	3000	7.89	0.23	9.38	192117.83	8.86	26,13
6	Kungki	-	189.81	2	1	2000	5.26	0.08	3.13	189808.92	8.75	17,14
7	Petai	*Parkia speciosa*	62.42	1	1	1000	2.63	0.08	3.13	62420.38	2.88	8.64
8	Sandpaper	*Emery ficus*	31.85	1	1	1000	2.63	0.08	3.13	31847.13	1.47	7.23
9	To get on with	-	28.74	1	1	1000	2.63	0.08	3.13	28742.04	1.32	7.08
10	Kabau	*Archidendron microcarpum*	25.80	1	1	1000	2.63	0.08	3.13	25796.18	1.19	6.95
11	Durian	*Durio Zibethinus*	31.85	1	1	1000	2.63	0.08	3.13	31847.13	1.47	7.23
12	Sepat Kayu	*Macaranga triloba*	43.74	2	2	2000	5.26	.15	6.25	43742.04	2.02	13.53
13	Regards	*Syzygium polyanthum*	13.46	1	1	1000	2.63	0.08	3.13	13455.41	0.62	6.38
	TOTAL			**38**		**38000**	**100**	**2.46**	**100**	**2169378.98**	**100**	**300**

Table 2 shows the presence of pole phase trees found in Repong Damar which contained the most species of damar cat eye, and other species such as duku, pulai, and ketupak. The presence of cat-eye resin species found in many tree pole stages is because the seeds that fall on the resin tree fall to the forest floor and grow naturally, and are the same as other species. The largest INP value in the 5m x 5m plot was in the cat eye resin species with 95.45 INP. This makes the presence of a cat's eye resin species dominate, according to Ariyanti et al (2018) which states that this species is consistently dominant at each level of growth in the resin recess.

Table 3. Diversity of saplings on the 5m x 5m plot in the Pahmungan Pekon

No.	Local Name	Scientific name	total LBDs	Individual	Plot	K	KR	F	FR	D	DR	INP
1	Resin	*Shorea javanica*	31.85	10	6	20000	50	0.46	50.17	63694.27	47.28	147.45
2	Aloes	*Aquilaria malaccensis*	9.63	1	1	2000	5	0.08	8.36	19267,52	14.30	27.66
3	Croton	*Codiaeum variegatum*	1.04	2	1	4000	10	0.08	8.36	2070.06	1.54	19.90
4	Pulai	*Alstonia scholaris*	9.24	2	2	4000	10	.15	16.72	18471,34	13.71	40.43
5	Kabau	*Archidendron microcarpum*	1.99	1	1	2000	5	0.08	8.36	3980.89	2.96	16.32
6	Sepat Kayu	*Macaranga triloba*	13.61	4	1	8000	20	0.08	8.36	27229.30	20.21	48.57
	TOTAL		20			40000	40000	0.92	0.92	100	134713,38	100	300

Table 3 shows the presence of the most found saplings species is damar cat species with INP 147.28 with the other 2 highest species such as INP 48.54 sepat wood and INP 40.38 pulai variety according to Ariyanti et al (2018), due to Ariyanti et al (2018). by environmental factors at the place of growth such as temperature, humidity, competitiveness of competing nutrients, sunlight, and growing space.

Table 4. Diversity of seedlings and undergrowth on 2m x 2m plot in Pahmungan Pekon

No.	Species Name	Scientific name	total	K	KR	Plot	F	FR	INP
1	Sepat	*Macaranga triloba*	47	117500	15.82	8	0.32	5.10	20.92
2	Medang	*Cinnamomum spp*	9	22500	3.03	3	0.12	1.91	4.94
3	Verse	-	71	177500	23.91	13	0.52	8.28	32.19
4	Teki	*Cyperus rotundus*	646	1615000	217.51	5	0.2	3.18	220.69
5	Raka	-	10	25000	3.37	3	0.12	1.91	5.28

No.	Species Name	Scientific name	total	K	KR	Plot	F	FR	INP
6	Sandpaper	*Emery ficus*	499	1247500	168.01	9	0.36	5.73	173.75
7	Andamali	-	8	20000	2.69	2	0.08	1.27	3.97
8	Betel couplet	*Piper betle*	30	75000	10.10	4	0.16	2.55	12.65
9	Rambutan	*Nephelium lappaceum*	17	42500	5.72	12	0.48	7.64	13.37

Table 4. Diversity of seedlings and undergrowth on 2m x 2m plot in Pahmungan Pekon (continued)

No.	Species Name	Scientific name	total	K	KR	Plot	F	FR	INP
10	Behind the wind	-	2	5000	0.67	1	0.04	0.64	1.31
11	Bayur	*Pterospremum javanicum*	3	7500	1.01	1	0.04	0.64	1.65
12	Resin	*Shorea javanica*	39	97500	13.13	5	0.2	3.18	16.32
13	Duku	*Lansium domesticum*	35	87500	11.78	1	0.04	0.64	12.42
14	Coffee	*Coffea sp.*	8	20000	2.69	2	0.08	1.27	3.97
15	Pacing	*Cheilocostus speciosus*	2	5000	0.67	1	0.04	0.64	1.31
16	Forest fern	*Nephrolepehis bisserata*	105	262500	35.35	10	0.4	6.37	41.72
17	Petai	*Parkia speciosa*	2	5000	0.67	1	0.04	0.64	1.31
18	Pulai	*Alstonia scholaris*	13	32500	4.38	2	0.08	1.27	5.65
19	Raka	-	10	25000	3.37	3	0.12	1.91	5.28
20	Rangkeni	-	62	155000	20.88	5	0.2	3.18	24.06
21	Rarebo	-	1	2500	0.34	12	0.48	7.64	7.98
22	Regards	*Syzygium polyanthum*	9	22500	3.03	2	0.08	1.27	4.30
23	Sampedis	-	3	7500	1.01	2	0.08	1.27	2.28
24	Synchronous	-	7	17500	2.36	1	0.04	0.64	2.99
25	Tonggalok	-	14	35000	4.71	2	0.08	1.27	5.99
26	Tupa	-	3	7500	1.01	1	0.04	0.64	1.65
Total				4137500	557.24		4.44	70.70	627.94

Table 4 shows the conditions in the damar repong forest floor in Pahmungan Krui Pekon, where the lush canopy conditions in the damar repong make the forest floor ecosystem have fertility that can affect the presence of undergrowth species and trees in the seedling type. This is indicated by the discovery of various species of undergrowth and seedling phase trees found as follows with the highest INP value consisting of puzzle grass with INP 220, 69, sandpaper INP 173.75 and other species with lower INP values.

B. The Dynamics of Damar Repong in Pekon Gunung Kemala

The results of the vegetation analysis carried out at Pekon Gunung Kemala obtained various types of trees other than the Cat Eye Damar species (Shorea javanica), such as Bayur

(Pterospermum javanicum), Durian (Durio zibethinus), Ketupak (Baccaurea racemose), Pulai (Alstonia scholaris), and others can be seen in Table 5.

Table 5. Diversity of Tree Species on a 20m x 20m plot in Pekon Gunung Kemala

no.	Local Name	Scientific name	total LBDs	Individual	Plot	K	KR	F	FR	D	DR	INP
1	Bayur	*Pterospermum javanicum*	1805.02	4	3	100	10,26	0.75	20.00	45125.40	3.80	34.05
2	Resin	*Shorea javanica*	41813.61	25	4	625	64.10	1,00	26.67	1045340.37	87.94	178.71
3	Durian	*Durio Zibethinus*	2523.25	6	4	150	15.38	1,00	26.67	63081.21	5,31	47.36
4	Garak wood	-	688.61	1	1	25	2.56	0.25	6.67	17215,37	1.45	10,68
5	Ricup	*Baccaurea racemosa*	258.68	1	1	25	2.56	0.25	6.67	6466.96	0.54	9.77
6	Slouching	-	258.68	1	1	25	2.56	0.25	6.67	6466.96	0.54	9.77
7	Pulai	*Alstonia scholaris*	199.04	1	1	25	2.56	0.25	6.67	4976.11	0.42	9.65
	TOTAL			39		975	100	3.75 00	100	1188672,37	100	300.00

Table 5 shows that in Pekon Gunung Kemala, 7 species of trees were found with a total of 39 individuals. In the 20 x 20 meter plots, there were 4 Bayur (Pterospermum javanicum) trees with 4 INP values of 34.05, Damar cat tree (Shorea javanica) 25 individuals found INP of 178.71, Durian tree (Durio zibethinus) of 6 individuals found with an INP value of 47.36, Garak tree of 1 individual found INP of 10.68, Ketupak tree of 1 individual found INP of 9, 77, 1 individual serlover tree found INP of 9.77 and Pulai tree of 1 individual with an INP value of 9.65. From Table 5 it can be seen that the cat eye tree (Shorea javanica) dominates the most with a total of 25 individuals with a total INP value of 178.71.

Table 6. Diversity of Pole Types on the 10m x 10m Plot in Pekon Gunung Kemala

No.	Local Name	Scientific name	total LBDs	Individual	Plot	K	KR	F	FR	D	DR	INP
1	Purple Leaf	*Graptophyllum pictum*	38.54	1	1	1000	10,00	0.25	10,00	38535.03	18.26	38.26
2	Pulai	*Alstonia scholaris*	38.54	1	1	1000	10,00	0.25	10,00	38535.03	18.26	38.26

Table 6. Diversity of Pole Types on the 10m x 10m Plot in Pekon Gunung Kemala (continued)

No.	Local Name	Scientific name	total LBDs	Individual	Plot	K	KR	F	FR	D	DR	INP
3	Rukam	*Flacourtia rukam*	9.63	1	1	1000	10,00	0.25	10,00	9633.76	4,56	24.56
4	Medang	*Cinnamomum spp.*	31.85	1	1	1000	10,00	0.25	10,00	31847.13	15.09	35.09
5	Taro Wood	-	23.01	1	1	1000	10,00	0.25	10,00	23009,55	10,90	30.90
6	Resin	*Shorea javanica*	53.90	3	3	3000	30.00	0.75	30.00	53901.27	25.54	85.54
7	Duku	*Lansium domesticum*	15.61	2	2	2000	20.00	0.50	20.00	15605.10	7.39	47.39
		TOTAL		10		10000	100	2,500	100	211066.88	100	300.00

Table 6 showsIn Pekon Gunung Kemala, 7 types of poles were found with a total of 10 individuals, in the 10 x 10 meter plots a purple leaf (Graptophyllum pictum) was obtained with 1 individual with an INP value of 38.26, a pulai (Alstonia scholaris) of 1 individual found INP of 38.26, rukam poles (Flacourtia rukam) of 1 individual found with an INP value of 24.56, medang poles (Cinnamomum spp) of 1 individual found INP of 35.09, taro wood poles of 1 individual found INP of 1 30,90, 3 individual cat eye poles (Shorea javanica) found INP of 85.54 and duku poles (Lansium domesticum) of 3 individuals with an INP value of 47.39.From Table 6 we get the dominant type of pole, namely Cat's eye resin (Shorea javanica) with a total of 3 individuals with an INP value of 85, 54.

Table 7. Diversity of saplings on the 5m x 5m plot at the Kemala Mountain Pekon

No.	Local Name	Scientific name	LBD total	Individual	Plot	K	KR	F	FR	D	DR	INP
1	Coffee	*Coffea*	1.99	1	1	2000	25	0.25	25.00	3980.89	26.32	76.32
2	Turok	-	.72	1	1	2000	25	0.25	25.00	1433.12	9.47	59.47
3	Duku	*Lansium domesticum*	2.87	1	1	2000	25	0.25	25.00	5732.48	37.89	87.89
4	Croton	*Codiaeum variegatum*	1.99	1	1	2000	25	0.25	25.00	3980.89	26.32	76.32
		TOTAL		4		8000	100	1,00	100	15127.39	100	300.00

Table 7 showsin the Kemala Gunung Pekon found 4 types of saplings with a total of 4 individuals, in a 5 x 5 meter plot obtained coffee piles (Coffea) of 1 individual with an INP value of 76.32, 1 potted sapling with an INP value of 59, 47, duku piles (Lansium domesticum) of 1 individual with INP values of 87, 89, puring piles (Codiaeum variegatum) of 1 individual with INP values of 76, 32. Of the 4 types of stakes found in duku stakes (Lansium domesticum) more dominant because the value of INP stakes is greater than the three types of stakes found with an INP value of 87, 89.

Table 8. Diversity of seedlings and undergrowth on the 2m x 2m plot at Pekon Gunung Kemala

No.	Species Name	Scientific name	total	K	KR	Plot	F	FR	D	DR	INP
1	Sepat	*Macaranga triloba*	9	22500	3.03	2	0.08	1.27	0	0	4.30
2	Medang	*Cinnamomum spp*	3	7500	1.01	1	0.04	0.64	0	0	1.65
3	Verse	-	3	7500	1.01	1	0.04	0.64	0	0	1.65
4	Teki	*Cyperus rotundus*	44	110000	14.81	2	0.08	1.27	0	0	16.09
5	Bayur	*Pterospermum javanicum*	6	15000	2.02	1	0.04	0.64	0	0	2.66
6	Sandpaper	*Emery ficus*	18	45000	6.06	4	0.16	2.55	0	0	8.61
7	Resin	*Shorea javanica*	6	15000	2.02	1	0.04	0.64	0	0	2.66
8	Kanihai	-	15	37500	5.05	1	0.04	0.64	0	0	5.69
9	Mulberry	*Morus alba*	3	7500	1.01	1	0.04	0.64	0	0	1.65
10	Pacing	*Cheilocostus speciosus*	1	2500	0.34	1	0.04	0.64	0	0	0.97
11	Forest fern	*Nephrolepehis bisserata*	9	22500	3.03	2	0.08	1.27	0	0	4.30
12	Prilik	-	12	30000	4.04	1	0.04	0.64	0	0	4.68
13	Croton	*Codiaeum variegatum*	5	12500	1.68	1	0.04	0.64	0	0	2.32
14	Rengkuni	-	4	10000	1.35	1	0.04	0.64	0	0	1.98
15	Sambiloto	*Andrographis paniculata*	2	5000	0.67	1	0.04	0.64	0	0	1.31
	total			362500	48.82		0.92	14.65			63.47

pacing underwater plants as much as 1 individual with a total FR of 0.63, underwater plants as many as 3 individuals with a total FR of 0.63, underwater fern as many as 9 individuals with a total FR of 1.27, under-proprietary plants as many as 12 individuals with total FR of 0.63, croton undergrowth of 5 individuals with total FR of 0.63, undergrowing of 4 individuals with a total FR of 0.63, bitter vegetation of 2 individuals with a total FR of 0.63. Of the 17 types of undergrowth found under the type of sandpaper under vegetation is the most dominating under vegetation because the FR value of this type is the largest with a total of 2.54. 12 individual under-vegetation plants with a total FR of 0.63, the croton under-vegetation of 5 individuals with a total FR of 0.63, the perennial rhizome plants with a total FR of 0.63, the bitter-root vegetation of 2 individuals with a total FR of 0.63. Of the 17 types of undergrowth found under the type of sandpaper under vegetation is the most dominating under vegetation because the FR

value of this type is the largest with a total of 2.54. 12 individual under-vegetation plants with a total FR of 0.63, the croton under-vegetation of 5 individuals with a total FR of 0.63, an under-grove of 4 individuals with a total FR of 0.63, a bitter-root vegetation of 2 individuals with a total FR of 0.63. Of the 17 types of undergrowth found under the type of sandpaper under vegetation is the most dominating under vegetation because the FR value of this type is the largest with a total of 2.54.

IV. CONCLUSION

The conclusions obtained in this study are as follows.

1. In Pahmungan Pekon, 19 species of trees were found in the 20m x 20m measuring plot, 13 species of pole phase trees in the 10m x 10m measuring plot, 6 species of saplings, and 26 species of undergrowth and seedling trees. The Importance Value Index (INP) of Cat Eye Damar (Shorea javanica) is 119.44416% and not dominating from 19 species of trees because Cat Eye Damar (Shorea javanica) dominates by 0.21.

2. In Gunung Kemala Pekon found 7 species of trees in the 20m x 20m measuring plot, 7 species of pole phase trees in the 10m x 10m measuring plot, 4 species of sapling phase trees, and 17 species of undergrowth and seedling trees. The Importance Value Index (INP) of Cat Eye Damar (Shorea javanica) at Pekon Gunung Kemala was 178.7111% and did not dominate from 7 tree species because Cat Eye Damar (Shorea javanica) had a dominance of 0.21.

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