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Lambung Mangkurat University

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Utilization of Medical Plants of Dayak Community in Saka Mangkahai Village, West Kapuas in Central Kalimantan as Local Wisdom <i>Wahyu Supriyati, Alpian</i>	341-345
The Ability of Wood Vinegar From Gelam (<i>Melaleuca cajuputi</i>) as a Coagulant Latex <i>Siti Hamidah, Yudi Firmanul Arifin</i>	346
Agroforestry Study As A Business To Improve Community Food Security In Krph-Oro Oro Ombo Bkph Pujon Kph Malang <i>Joko Triwanto</i>	347-358
Natural Honey Quality in Tabukan Barito Kuala and Development Potentials <i>Rosidah Radam, Arfa Agustina Rezekiah, Eva Prihatiningtyas, Anna Marya Makalew</i> ..	359
Improving Economic Value Of South Borneo Indigeneous Fruits Through The Processing Of Chips Fruit <i>Yuniarti, Henni Aryati, Lusita Wardhani</i>	360-365
The Population Structure Of Vegetation On Rawa Kalang Hakurung Village <i>Dharmon, Maulana Khalid Riefani, Mahrudin</i>	366-372
Improving Management of Bitter Honey Production in Loksado, South Kalimantan <i>Trisnu Satriadi, Yudi Firmanul Arifin, Siti Hamidah</i>	373
Feasibility Study Agroindustry Cajuput Oil "Burung Kenawai" UPT. KPHL Tarakan <i>Mohammad Wahyu Agung, Fendi Asrian</i>	374
The Influence of Organic Additives on Low Cost Flat Membrane Support Fabrication From Clay <i>Muthia Elma, Nor Aldina, Hesti Kesumadewi, Isna Syauqiah Yulian Firmana Arifin, Nurhakim, Agus Triantoro</i>	375-382
What is Pirdot (<i>Saurauibracteosa</i> dc)? (Challenges and Oppor Tunities of Pirdot Development in South Kalimantan) <i>Sudin Panjaitan, Tri Wira Yuwati</i>	383-386
The Potential Of Jernang Rattan (<i>Daemonoropsdraco</i>) Development In South Kalimantan <i>Sudin Panjaitan</i>	387
Sub-Acute Erythrocytes Toxicity Evaluation Of The Aqueous Extract Of Leaves Of Gemor (<i>Nothaphoebe Coriacea</i>)	

The Population Structure of Vegetation on Rawa Kalang Hakurung Village

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ABSTRACT

The maximum rate of population show develop plant in environment. The state of natural environment never stays for a certain time. The aim of research to describe the population structure of the vegetation on Kalang swamp. Type of research is the population structure description. The study was conducted in the area of Rawa Kalang, Hakurung village North Daha Hulu Sungai Selatan in March to June 2016. The samples were all plants on a total area of 10 Ha were taken randomly and the total specific plot. Calculations include seedling, sapling, pole and tree. Natural plant trees found (Ampalam, Kasturi, Jingah, Randu, Bungur, Pinang, Mengkudu, and Alaban). Eights plant found in Hakurung North Daha Hulu Sungai Selatan all have disrupted the structure of the population.

Keywords: population structure, swamp, rawa kalang, plant, hulu sungai selatan

INTRODUCTION

The population formulated as collection of individuals organisms somewhere having traits similar, have the same origin, and nothing hinders individual its members to connect with each other and develop offspring freely because it is a collection of individual heterosexual. While Odum (1993) said the population is a collective organisme-organisme of the same species occupying space or a particular place. Having many the unique traits and has organization and structure that should be presented. Size of a population in a specific areas usually expressed in a name density of populations. Population density can be expressed in biomass per a broad, or can also expressed in biomass per a broad if the population. Formed by individuals varying size, is sprouts, is feed and plants and herbs of old age. In the course of the time a population will be changed, in studying change this sense speed plays an important role, and change this population is very much determined by several factors (birth or regeneration; death; imigration; and emigration).

The size of plants in the natural world population is very much determined by carrying capacity, namely the most number of individuals who may be accommodated in a ecosystem where of a microorganism it to be alive. In a state of competition amongst this species is in maximum savings that can be borne by the of a microorganism. The population structure of herbs constituting step population of herbs that were on a place. The structure of the population Study is very important to determine what is the status of or state of a populasi in a habitats, which is critical, threatened and safe. So that efforts can be done action against the population so not become rare or extinct.

Research on the structure of the population in the South Kalimantan had done especially for some kind of plants. A number of studies of the structure of the population has been done. Wati (2010) of the structure of the population of sungkai (*peronema canescens* jack.) in the village Balangan Aranio Banjar District. Syamsuddinnor (2015) of the structure of the population of *erythrina rista-galli* L. in tourism waterfall Bajuin Tanah Laut District. Based on those two research had the structure different population.

Hakurung is one of the villages in the sub-district Hulu Sungai Selatan South Kalimantan that is largely the area was streams and swamps and ordinary called as a lake kalang because there are many kalang or cage buffalo swamp. Herbs living in the area is plants able to live on condition habitat saturated water. The purpose of this research is to find the structure of the population of region of kalang village North Hakurung daha Hulu Sungai Selatan.

MATERIALS AND METHODS

The kind of research used is research description. The data was undertaken by using cruiser technique for the total of 1000 meters x 1000 feet or 10 ha in region of kalang village North Hakurung Daha Hulu Sungai Selatan. The data calculated is the number of seedling, sapling, poles, and trees. The structure of the population density of analyzed based on plants analyzed using formulas of odum (1993) as follows.

$$\text{Density} = \frac{\text{The total number of individuals}}{\text{area (ha)}}$$

The structure of the population of data can be presented in the form of a pyramid age. Categori scarcity based on International Union for The Conservation of Nature and Natural Resources / IUCN (2014), it is critical that if in 1 km² found less than 25 individual adults and if less than 5 individual mature called crunch. Based on the concept modified as follows.

> 25 Adult individual / Km² : Uncritical

5-25 Adult individual / Km² : Critical

< 5 Adult individual / Km² : Crucial

RESULT AND DISCUSSION

According to the research in region of hakurung about plants natural or not planted berhabitus trees found 8 sorts of crops with the density of as on a Table 1 the following.

Table 1. Population Density of Northern Hakurung Daha Hulu Sungai Selatan

No	Species	Local Name	Density (Individual / km ²)			
			Trees	Poles	Seedling	Sapling
1	<i>Mangifera indica</i>	Ampalam	88	106	6	113
2	<i>Mangifera casturi.</i>	Kasturi	31	44	31	69
3	<i>Gluta renghas</i>	Jingah	13	44	25	6
4	<i>Ceiba pentandra</i>	Randu	25	6	6	25
5	<i>Lagerstroemia speciosa</i>	Bungur	25	6	31	6
6	<i>Areca catechu</i>	Pinang	19	0	0	6
7	<i>Morinda citrifolia</i>	Mengkudu	19	6	6	0
8	<i>Vitex pubescens</i>	Alaban	25	6	0	0

Table 1 seen , that structure population of any kind of plants have a difference. Five types of plant having the number of sapling lower than phase upon it is *Areca catechu*, *Morinda citrifolia*, *Gluta renghas*, *Lagerstroemia speciosa*, and *Vitex pubescens*. *Morinda citrifolia*, and *Vitex pubescens* not having a phase sapling. Plant having phase sapling higher than the bushes phase is *Mangifera indica*, *Mangifera casturi*, and *Ceiba pentandra*.

Referring to Table 1, then form of structure population according to Odum (1993) eight different types of plants in the region of Northern Hakurung Daha Hulu Sungai Selatan having the form of the population as presented in table 2 the following.

Table 2. Structure population of region of Northern Hakurung Daha Hulu Sungai Selatan

No	Species	Structure Population Shape*
1	<i>Mangifera indica</i>	Pyramid the wide disturbed
2	<i>Mangifera casturi.</i>	Pyramid the wide disturbed
3	<i>Gluta renghas</i>	Pyramid reversed disturbed
4	<i>Ceiba pentandra</i>	Pyramid the wide disturbed
5	<i>Lagerstroemia speciosa</i>	Pyramid pitcher disturbed
6	<i>Areca catechu</i>	Pyramid pitcher disturbed
7	<i>Morinda citrifolia</i>	Pyramid reversed disturbed
8	<i>Vitex pubescens</i>	Pyramid reversed disturbed

* Naming explanation by researchers

Table 2 shows that of eight plants found in region of Northern Hakurung Daha Hulu Sungai Selatan all structured population disturbed. *Mangifera indica*, *Mangifera castur*, *Ceiba pentandra* have a structured population by Pyramid the wide disturbed. *Gluta renghas*, *Areca catechu*, *Lagerstroemia speciosa* have a structured population by Pyramid pitcher disturbed. *Vitex pubescens*, *Ceiba pentandra* *Morinda citrifolia*, *Vitex pubescens*, dan *Morinda citrifolia* have a structured population by Pyramid reversed disturbed.

Referring to iucn (2014) of data research on Table 1, so the scarcity 8 sorts of crops are as on a Table 3 the following.

Table 3. The Scarcity of Region of Northern Hakurung Daha Hulu Sungai Selatan.

No	Species	Density (Individual / km ²)	The Scarcity
1	<i>Mangifera indica</i>	88	Unritical
2	<i>Mangifera casturi.</i>	31	Unritical
3	<i>Gluta renghas</i>	13	Critical
4	<i>Ceiba pentandra</i>	25	Critical
5	<i>Lagerstroemia speciosa</i>	25	Critical
6	<i>Areca catechu</i>	19	Critical

7	<i>Morinda citrifolia</i>	19	Critical
8	<i>Vitex pubescens</i>	25	Critical

From the Table 3 above , it is evident that six that plants are *Areca catechu*, *Morinda citrifolia*, *Gluta renghas*, *Vitex pubescens*, *Morinda citrifolia*, and *Vitex pubescens*, in status critical. While 2 plant species, namely *Mangifera indica*, *Mangifera casturi* remain in status uncritical. According to the interviews that have been done on 10 respondents consists of 5 the male and 5 of the female, shows that the swamp Hakurung know the origin of herbs naturally. They usually take up plants only the mature hew. Most of community does not replanting.

The structure of the population is region of Northern Hakurung having a triple form, namely *Mangifera indica*, *Mangifera casturi*, *Ceiba pentandra* with the structure of the population pyramid wide disturbed. *Gluta renghas*, *Areca catechu*, *Lagerstroemia speciosa* with the structure population pyramid pitcher disturbed troubled. *Vitex pubescens*, *Ceiba pentandra*, *Morinda citrifolia*, *Vitex pubescens*, and *Morinda citrifolia* with the structure population pyramid reversed disturbed.

According to odum (1993) pyramid with natural width of having a number of individuals young more of the old. According to Hardjosuwarno (1990) mention simply structure age a population are simply as population developed quite, characterized by a number of individuals young very large proportion called also population. Odum (1993) pyramid with natural width of having a number of individuals young more of the old. Selajutnya according to Riyanto dkk (1995) said individual young more of the old , then natalias larger than mortalitas. Based on the concept of above, then plants *Mangifera indica*, *Mangifera casturi*, *Ceiba pentandra* developing characterized by the comparison of young individual be greater than old individuals, but in the normal. So that the term researchers give the structure of the population pyramid wide base disturbed.

Meanwhile *Gluta renghas*, *Areca catechu*, *Lagerstroemia speciosa* with the structure population pyramid pitcher disturbed troubled. It is alleged the percentage of young age group in plants *Gluta renghas* lower than herbs *Areca catechu*. The difference this is what causes of pyramidal form of plants *Gluta renghas* and plants *Areca catechu* is different. The number of seedling found many, but seedling which grow to be sapling , the and the table shows the calculation their numbers are declining, one of the causes because of death, many seedling the dead it is probably caused happened competition between seedling, due to lack of land to scramble find a riot gear and water for growth , so that the not able to endure will die and that were able to survive will live and developing.

The number of a larger than sapling as shown by table 1. According to Odum (1993) structure population of appropriate for survival of plants is the number of the smaller than sapling. While ihal was allegedly caused by the slow growth in the pole to phase trees according to Odum (1993) structure population of appropriate for survival of plants is the number of the smaller than sapling. Consequently phase sapling which grow to be collected phase pole with the initial phase slow grow into the trees. The impact is a phase pole having a

larger number of phase sapling. Suspected it is a cause of *Vitex pubescens*, *Ceiba pentandra*, *Morinda citrifolia*, *Vitex pubescens*, and *Morinda citrifolia* with the structure population pyramid reversed. Provides term population basic structure pyramid wide disturbed.

The structure of the population changing according to time, one factor causing the changes are human activity (Surasana & Taufikurrahman, 1994). According to the interviews, usually people hew of the old and the to take its be firework and building materials for example to board and fruit forest area usually not all harvested to consumed and sold so many dropped grew seedling. According to the interviews according to local residents, the sum of eight plants are now was less than years earlier, but residents not worry population will be reduced the plant. Trees are affected by by the community to be taken its, but the absence of an effort to planting back, this is what caused the reduced population plants in the area.

CONCLUSION

Based on Table 2 looks that 6 that plants are *Areca catechu*, *Morinda citrifolia*, *Gluta renghas*, *Vitex pubescens*, *Morinda citrifolia*, and *Vitex pubescens*, in critical status .While type plant 2, namely *Mangifera indica*, *Mangifera casturi* still be in the status of not critical. The population in conjunction with units, density can show the existence of a plant or sustainability. Therefore the population in that region of Northern Hakurung continued decline, we need any formal by residents to preserve the plants by means of planting.

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