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3rd INTERNATIONAL WILDLIFE SYMPOSIUM

"[illegible]"

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WELCOMING SPEECH FROM CHAIR PERSON OF THE ORGANIZING COMMITTEE

Distinguished guests,

- Minister of Environment and Forestry Republic of Indonesia, Dr. Siti Nurbaya or representing,
- Rector University of Lampung, Prof. Dr. Ir. [illegible] M.P.
- Honorable Keynote Speaker, Invited Speakers, participants, sponsorships, ladies and gentlemen

Assalamu'alaikum warahmatullahi wabarakatuh
May God bless all of us
Thank you

It gives me great pleasure to extend to you all a very warm welcome to the 3rd International Wildlife Symposium (IWS 2018), here in Bandar Lampung.

Ladies and gentlemen, it is gratifying to note that symposium is designed to improve awareness on wildlife conservation and sustainability in order to improve the welfare of society. To increase the consciousness and understanding on the potential, economic value, and sustainable management of tropical wildlife through bioengineering application and to strengthen international scientific network of biological and related scientists to share and exchange progress in various fields of wildlife research.

No matter how much we can do by ourselves on the institutional and national level, it is never enough. International level of collaboration work would be the best answer. Therefore I wish that this event which is attended by distinguished speaker and attendants from Malaysia, India, US, and Indonesia, would be a great opportunity for us to establish scientific collaboration between scientist internationally.

Hereby, on the behalf of Organizing Committee I acknowledge Dr. Siti Nurbaya, Minister of Environment and Forestry Republic of Indonesia or representing, and also to Mrs. [illegible] [illegible], Ph.D. (Middle Tennessee State University), as a keynote speaker, and also to the following invited speakers, Dr. Ashley Brooks (WWF Tigers Alive Initiative), Dr. Barney Long (Global Wildlife Conservation), and drh. Dedi Candra (Way Kambas National Park) for willingness to share their valuable knowledge and scientific information.

To make this symposium happen, I would like to gratefully acknowledge to the valuable contributions from personal and institutional sponsorships including University of Lampung, [illegible] Coffee, [illegible], PT. Nestle Indonesia, [illegible] Indonesia, and [illegible] [illegible] ([illegible]). In particular, thanks a lot to the World Wide Fund (WWF) for supporting the financing of this symposium.

I would like also to take this opportunity to express my sincere thanks to the Head and Secretary of Research Institution and Community Service University of Lampung, for giving an opportunity and support to organize this symposium. Heartfelt thank is delivered to

steering committee, academic reviewers, organizing committee, for all participation and hard works. All of them have been working since the begining of the planning stage and they are still here today for all of us.

Despite our best efforts, it is inevitable that there is a lack in organizing this symposium and I proudly apologize to all invited speakers, oral and poster presenters, attendants, donators, and committee members.

Finally, I would like to offer my best wishes for a highly enjoyable, succesful, productive and fruitful symposium.

Thank you so much.

Dr. Erdi Suroso
Chair Person of the Organizing Committee

OPENING REMARKS FROM THE HEAD OF RESEARCH INSTITUTION AND COMMUNITY SERVICE, UNIVERSITY OF LAMPUNG

Distinguished guests

- Minister of Environment and Forestry Republic of Indonesia, Dr. Siti Nurbaya or representing,
- Rector University of Lampung, Prof. Dr. Ir. Hasriadi Mat Akin, M.P.
- Honorable Keynote Speaker, Invited Speakers, participants, sponshorships, ladies and gentlemen

Assalamu'alaikum warohmatullohi wabarokatuh.
May God give us health and happiness.
Tabik pun.

It is my great pleasure to welcome all speakers and participants to the 3rd International Wildlife Symposium 2016 (IWS-2016) held in Meeting Room 2nd floor Rektorat University of Lampung, Bandar Lampung, Indonesia. I recognize that this symposium is principally designed to enhance and strengthen the contribution of researchers to the wildlife conservation. The theme of this event is "*Conserving Sumatran Wildlife Heritage for Sustainable Livelihood*". Therefore, I wish that this event will be a great opportunity and wonderfull venue to lay down a cooperative framework and to internationally establish scientific collaboration among scientiests.

Hereby, I appreciatively acknowledge Dr. Siti Nurbaya, Minister of Environment and Forestry Republic of Indonesia, and also to Mrs. Siti Nur Hidayati, Ph.D. (Middle Tennessee State University), as a keynote speaker, and also to the following invited speakers, Dr. Ashley Brooks (WWF Tigers Alive Initiativ), Dr. Barney Long (Global Wildlife Conservation), and drh. Dedi Candra (Way Kambas National Park) for delivering their valuable scientific information.

My appreciation also goes to the Steering Committee, Academic Reviewers, and the Organizing Committee that spend almost their valuable time to review, manage and organize this symposium effectively. I also would like to gretefully acknowledge to the valuable contributions from personal and institutional sponshorship and funding to make this program happen.

Finally, I wish you all best wishes to have meaningfull and useful symposium. Thank you.

Wassalamu'alaikum warohmatullohi wabarokatuh.

Warsono, Ph.D.
Head of Research Institutions and Community Service

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SUMATRAN ELEPHANT (*ELEPHAS MAXIMUS SUMATRANUS* T) FOOD COMPOSITION AND ITS PREFERENCE IN TESSO NILO NATIONAL PARK

Defri Yoza[1] and Yuliantony[2]

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ABSTRACT

Tesso Nilo is one of national park that has human elephant conflict over time. The conflict caused by the use of same habitat between man and elephant. The research about food preference of Sumatran elephant have conducted in Tesso Nilo National Park in Riau Province in June to August 2016. The aim of this research was to identified elephant food species vegetation and its preference in elephant habitat. This research used direct observation method in 4 transect, 2 transect at forest and 2 transect at shrubsand used grab method to identified elephant food preference. That,found 24 species at the forest and 5 eaten by Sumatran elephant and found 4 species at the shrubs and 1 eaten by elephant at Tesso Nilo National Park. Species important value from the forest 44,14% at *Artocarpus elasticus*/Moraceae dan 45,18% at *Nephelium cuspidatum*/Sapindaceae. The food preference consist of *Cyperus rotundus*/Cyperaceae (341 grabs), *Paspalum conjugatum*/Poaceae (265 grabs), *Panicum repens*/Poaceae (99 grabs), *Artocarpus elasticus*/Moraceae (72) and *Ficus alba*/Moraceae (27 grabs)

Keywords: Food preference, Sumatran elephant, vegetation composition, Tesso Nilo National Park, vegetation analysis

1. INTRODUCTION

Elephant population has decreased drastically 700 to 800 in 1999 and 354 to 431 in 2003 (WWF and BBKSDA Riau, 2006). Declining populations due to declining habitat quality and also the conflict between human and the elephant. On one side of the elephant is protected under the Act No. 5 of 1990 on Conservation of Natural Resources and CITES Appendix 1. On the other hand elephants are considered pests by palm farmers.

Reduction of elephant habitat is evident due to the change of the elephant habitat into monoculture plantations (palm and rubber) are destroying the habitat of Sumatran elephants. This resulted elephant trapped in small blocks of forest that is not enough to support life in the long term. It became a trigger for conflict between humans and elephants (Jogasara, 2011).

The highest conflict are found in spaces shared by humans and elephants. Many cases occur on lands that have been converted from forest to oil palm plantation (Yoza, 2009). As a result of forest conversion causes a fragmentation of habitat for the animals (Yoza, 1995).

Sumatran elephant (Elephas maximus sumatranus, Temminck, 1847) is an endangered species that spread to almost all parts of Sumatra island from Aceh until Lampung Province, but its main habitats are lowland island of Sumatra. This endangered species can be found in some forest areas of production, among others in the group TessoNilo that most of the region has changed her status to TessoNilo National Park.

TessoNilo National Park still offers the lowland forests is one of the remaining regions in Sumatra. This area is very possible for the population of Sumatran elephants due to their topography is relatively flat and water sources are available throughout the year. Besides the abundant availability of food is an important factor in determining the survival of Sumatran elephants.

The large number of elephant populations inside TessoNilo National Park area is very dependent on the carrying capacity of the habitat and food available. Based on this it is necessary to feed the elephants inventory to adjust the carrying capacity of its habitat and the purpose of providing feed

elephants in the field. The purpose of this research is to identify the types of feed elephants contained in TessoNilo National Park and identify the palatability of feed elephants in TessoNilo National Park

2. MATERIAL AND METHOD

2.1. Location

Research was conducted during 2 months in May-June 2016. Research located in Gondai village, LubukKembangBungaand TessoNilo National Park

2.2. Procedures

2.2.1. Elephant Position

Elephantsposition can be determined by using direct and indirect methods. Direct methods such as elephant observation, while the indirect method may include the discovery of traces (former fault elephant, feces and footprints of elephants) and interviews. Interviews were conducted with local people who know the existence of elephants. If found traces of elephants or elephant, then use GPS to save the point.

2.2.2. Elephants Food Palatability

The types of elephant food plants known from bites, the rest being eaten elephant and mahout information. Parameter potential vegetation elephant feed studied cover the diversity of vegetation types of feed, spread types, the palatability of feed and feed production. Data collected vegetation types feed concurrent with vegetation analysis (in the sample plot vegetation analysis) to determine the quantitative density and dominance in the structure and composition of vegetation in the habitat of elephants. In addition, data collection elephant feed types also performed in other transects to seek information other diets plant species as well as the edible part. To quantify the elephants feed production is done by cutting the plant species feed on seedlings, saplings, lower plants (including grass), shrubs, lianas, epiphytes, palms and pandanus; then weighed to obtain the wet weight. The size of the sample plot observations for the types of grasses (including weeds) is 1m x 1m, while for the nursery, lower plants (other than grasses) shrubs / herbs, ferns, with a sample plot size of 2m x 2m. Laying the sample plots were selected based on observations of the location of a food source, with a number of sample plots adapted to field conditions.We use mount of grab to know elephant food palatability around the field.

2.2.3. Plot Sample Location of Elephants Food

Vegetation composition is done by using the plots are made on location into elephant habitat feed using a line transect using purposive sampling method (selected sample). Transect Line is a method of observation of wildlife populations through sampling with unit form samples of transect.Based on secondary data and interviews obtained from the manager and the public stated that the number of elephants in groups of as many as three elephants Gondai village and in the village of LubukKembangBunga there are seven elephants. Therefore, observations in the form of lines, then the number of samples required track is two transect with a broad sample of 2 hectares. Each transect has a width of 20 m and a length of 500 m.

2.3. Data analysis

Vegetation composition analyzed by importan value index with density index, frequency index, dominance index. The amount of TIP for growth on trees and poles maximum level is 300%, while the growth rate of saplings and seedlings / herb maximum is 200% (Soerianegara and Indrawan, 1978).To obtain quantitative data of vegetation inorder the vegetation analysis to determine the potentialelephant food in Tesso Nilo national Park,it is necessary to count the value of vegetation following parameters:Absolute frequency (FM), Relative Frequency (FR),Absolute density (KM), Relative Density (KR),Absolute Dominance (DM), relative dominance (DR), ValueImportant (NP), and species diversity index(H).To find natural food species of elephantswhich has an important value

is high, then the wholestations merged into one, so that it candemonstrated species dominatearea studied. So that significant value can beinterpreted, then the value is classified onthree groups: low, high, and very high(Barbour et al., 1987).

Preferences feed elephants Sumatra was determined by observation directly in the field to the number anddiets plant species. Determining the location sampling and plant species feedby traces (fault or plant remainsfeed) abandoned elephants. laying downplot carried out along the daily path of elephantsby purposive sampling of 10 plotswith a size of 1x1 meters.

3. RESULT AND DISCUSSION

3.1. Composition of Elephants Feed

Identify the composition of tree species found in natural forests carried of Tesso Nilo National Park (TNNP) by using the path along 500 meters and a width of 20 meters. Information about the composition of plant species found in the region can be seen in Table 1 and important values can be seen in Table 2.

Table 1.Types of Trees in Elephant Tracks

No	Name Trees	Latin Name	Family
1	Petatal	*Ochanosthacys amentaceae*	Olacaceae
2	Terap	*Artocarpus elasticus*	Moraceae
3	Saga	*Adenanthera pavonina*	Fabaceae
4	Bintangur	*Callophyllum sp.*	Callophylaceae
5	Keranji	*Dialium platysepalum Baker.*	Fabaceae
6	Kedondong	*Dacryodes costata*	Burseraceae
7	Tambal	unidentified	unidentified
8	Dara-dara	*knema hookeriana*	Myriticaeceae
9	Rambutan Hutan	*Nephelium cuspidatum*	Sapindaceae
10	kelat	*Syzygium sp.*	Myrtaceae
11	Kelat merah	*Eugenia ridleyi*	Myrtaceae
12	Kelat putih	*Eugenia odorata*	Myrtaceae
13	Empelur	*Dillenia reticulata*	dilleniaceae
14	Samak	*Syzygium spicata*	Myrtaceae
15	Pisang-pisang	*Mezzettia parvifolia Becc*	Annonaceae
16	Ludai	*Sapium bicolor*	Euphorbiceae
17	Medang kangkung	*Litsea sp*	Lauraceae
18	Meranti kunyit	*Shorea sp.*	Dipterocarpaceae
19	Rengas	*Swintonia sp*	Anacardiaceae
20	Putat	*Barringtonia pendula*	Lecytidaceae
21	Meranti Kanuar	*Shorea sp.*	Dipterocarpaceae
22	Tempunik	*Artocarpus rigidus*	Moraceae
23	Tembalun	*Parashorea aptera*	Dipterocarpaceae
24	Kandis	*Garcinia farvifolia*	Guttifer ae

From the results in Table 1 obtained 24 species of trees found in the path of an elephant. Of the 24 types of the most common types of rambutan hutan and terap with importan value respectively 44.14% and 45.18%. importan value most determined of the high relative frequency, relative dominance and relative abundance of a species. Of the 24 species found in secondary forest, 5 types of which are the food of elephants are terap (*Artocarpus elasticus*), pisang-pisang (*Mezzettia parvifolia*), ludai (*Sapium bicolor*), Rengas (*Swintonia sp*) and tempunik (*Artocarpus rigidus*). Of the five types of the two of them came from the family Moraceae namely terap (*Artocarpus elasticus*) and tempunik (*Artocarpus rigidus*).

Table 2.Importan Values Type Trees in the Forest Nature around TNNP

No.	Local name	Latin name	Family	K	KR	F	FR	D	DR	INP
1	Petatal	*Ochanosthacys amentaceae*	olacaceae	0.00	5.63	0.12	4.55	0.29	3.76	13.94
2	Terap	*Artocarpus elasticus*	Moraceae	0.00	15.49	0.36	13.64	1.18	15.01	44.14
3	Saga	*Adenanthera pavonina*	Fabaceae	0.00	5.63	0.16	6.06	0.44	5.61	17,31
4	Bintangur	*Callophyllum sp.*	Clusi aceae	0.00	2.82	0.08	3,03	0.13	1.69	7.54
5	Keranji	*Dialium platysepalum Baker.*	Fabaceae	0.00	4.23	0.08	3,03	0.26	3.34	10.60
6	Kedondong	*Dacryodes costata*	Burseraceae	0.00	8.45	0.24	9.09	0.67	8.60	26.14
7	Tambal	Unidentified	Unidentified	0.00	1.41	0.04	1.52	0.03	0.44	3.37
8	Dara-dara	*knema hookeriana*	Myri sticaceae	0.00	4.23	0.12	4.55	0.32	4.08	12.85
9	Rambutan Hutan	*Nephelium cuspidatum*	Sapindaceae	0.00	14.08	0.32	12.12	1.54	19.68	45.88
10	kelat	*Syzygium sp.*	Myrtaceae	0.00	4.23	0.12	4.55	0.12	1.55	10.32
11	Kelat merah	*Eugenia ridleyi*	Myrtaceae	0.00	2.82	0.08	3,03	0.13	1.60	7.45
12	Kelat putih	*Eugenia operculata*	Myrtaceae	0.00	1.41	0.04	1.52	0.04	0.49	3.41
13	Empelur	*Dillenia reticulata*	dilleniaceae	0.00	8.45	0.20	7.58	0.78	10,00	26.03
14	Samak	*Syzygium spicata*	Myrtaceae	0.00	7.04	0.20	7.58	0.47	5.97	20.59
15	Pisang-pisang	*Mezzettia parvifolia Becc*	Annonaceae	0.00	1.41	0.04	1.52	0.04	0.49	3.41
16	Ludai	*Sapium bicolor*	Euphorbiceae	0.00	1.41	0.04	1.52	0.09	1.09	4.02
17	Medang kangkung	*Litsea sp*	Lauraceae	0.00	1.41	0.04	1.52	0.11	1.45	4.37
18	Meranti kunyit	*Shorea sp.*	Dipterocarpaceae	0.00	1.41	0.04	1.52	0.14	1.77	4.69
19	Rengas	*Swintonia sp*	Anacardiaceae	0.00	1.41	0.04	1.52	0.14	1.77	4.69
20	Putat	*Barringtonia pendula*	Lecytidaceae	0.00	1.41	0.04	1.52	0.11	1.45	4.37
21	Meranti Kanuar	*Shorea sp.*	Dipterocarpaceae	0.00	1.41	0.04	1.52	0.08	1.03	3.95
22	Tempunik	*Artocarpus rigidus*	Moraceae	0.00	1.41	0.04	1.52	0.10	1.30	4.22
23	Tembalun	*Parashorea aptera*	Dipterocarpaceae	0.00	1.41	0.04	1.52	0.08	0.96	3.89
24	Kandis	*Garcinia farvifolia*	Guttifer ae	0.00	1.41	0.04	1.52	0.04	0.53	3.45
		Amount		0.01	100.00	2.64	100.00	7.83	99.97	299.97

Relative density is highest on terap (*Artocarpus elasticus*) and rambutan hutan (*Nephelium cuspidatum*) amounted to 15.49% and 14.08%. According to Arief (1994) high relative abundance of a species indicates that type have the ability to adapt better to the environment than other types. While the low relative density indicates that the number of individuals of a species that is not able to adapt to the environment.

The highest frequency is also found in terap (*Artocarpus elasticus*) and rambutan hutan (*Nephelium cuspidatum*) of 0.36 and 0.32. According Soerianegara (1998) shows the frequency of a particular type of deployment types in an area. Types that are distributed over a large frequency has a value, otherwise the species has a small frequency value having a small distribution area. This can be caused by a lack of factors that can help its spread, so that the power distribution is reduced.

The highest importan value was found in the rambutan hutan (*Nephelium cuspidatum*) and types of terap (*Artocarpus elasticus*) respectively by 45.88% and 44.14%. Described by Soerianegara and Indrawan (1978) in Andriyani (2006), that a plant species with the highest important value in a vegetation, meaning that type is the dominant species. Where these types have advantages over other types of competing and adapt to the existing environment.

In addition to natural forests, vegetation analysis was also performed on shrubs. In shrub found four tree species from four families. The following types of trees found in the scrub around TNNP (Table 3)

Table 3. Trees Type in Shrublands around TNNP

No	Local Name	Latin Name	Family	Diameter (cm)	High (m)
1	Petatal	*Ochanosthacys amentaceae*	Olacaceae	40	16
2	Terap	*Artocarpus elasticus*	Moraceae	34	14
3	Saga	*Adenantera parvifolia*	Fabaceae	42	17
4	Bintangur	*Callophylum sp.*	Clusia ceae	32	14

Based on Table 3 it can be seen that there are 4 species of 4 families that are around shrubs in TNNP. These species grow among the shrubs that are all around TNNP. Of the four species found in thickets, one species is food that is kind of the applicability of elephants (*Artocarpus elasticus*).

Both natural forests and shrubs used by elephants as well as a source of feed passage in addition to other functions as a bed or shelter from the sun. The results of the identification of plants contained in the trajectory path of elephants totaling 24 species consist of 16 *family*. The composition of plant species in natural forests as many as 24 species of trees with a growth rate of seedlings. Plants that are found to herbaceous level of Poaceae and Asteraceae while seedling plants from syzygium (Myrtaceae), nangka-nangkaan (Moraceae), and Euphorbiaceae. Sumatran elephant allegedly like species of Poaceae because in addition to having a soft texture morphology, stature such as shrubs or bushes so it's easier to reach than the leaves on tall trees in the forest are difficult to reach (Yansyah, 2005).

In general, species that were found in the arearesearch has an important value is low. Symptom so common in the type of vegetation leads to the climactic conditions and stable (Djufri,1995). It thus also relevant to a conclusion Mueller-Dombois and Ellenberg (1974) that the composition of forest vegetation is disturbedin the long term will show physiognomy, phenology and regeneration relativefast, so that the dynamics in the communitytakes place quickly and easily observe the pacechange of the composition of a constituent. More real toif the area at any time experience disruption for their grazing (grazing) conducted by an elephant, so that the regeneration species is rapid, and usually can not becompleting the cycle of life as it should be.

3.2. Preferences Feed Elephants

3.2.1. Based wrench

Overall found the observed type of feed it directly to the three elephants grazing for 3 days. Observations preference elephant feed to the first adult male elephants (38 th), 1 adult female elephants (36 th) and 1 juvenile male elephants (8 th) in the *Flying Squad* village Gondai Base. Here are the types of feed eaten by elephants during two days of observation for each elephant

Table 4. Types of Animal Feed and Eating Behavior Observation Elephant

No.	Elephants sample	Food type	Observation					
			Day 1			Day 2		
			Morning (grab)	Evening (grab)	Amount	Morning (grab)	Evening (grab)	Amount
1	Jambo	Rumput teki	17	63	90			
		Rumput jarum	6	2	8			
		Rumput sianik	1	0	1			
		Akar	0	2	2			
		Terap				72		72
		Akar Kunyit					7	7
		Beringin					13	13
		Semantung					27	27
		Rumput teki	17	143	160	11	68	79
		Rumput sianik	10	0	10			
		Ilalang	2	2	4			
2	Novi	Lampuyangan	29	0	29	38	32	70
		Papaitan	51	2	53	33	4	37
		Pakis	2	0	2			
		Akar				1	0	1
3	Dono	Rumput teki	13	7	20			
		Papaitan	80	95	175			

Sources: Observations, 2016

Table 5. Grab amount for 3 Elephants in 3 Days

No.	Local name	Scientific name	Family	Grab amount
1	Rumput Teki	*Cyperus rotundus*	Cyperaceae	341
2	Rumput jarum			8
3	Rumput sianik	*Cyperus aromaticum*	Cyperaceae	11
4	Akar			3
5	Ilalang	*Imperata cylindrica*	Poaceae	4
6	Rumput lampuyangan	*Panicum repens L*	Poaceae	99
7	Papaitan	*Paspalum conjugatum*	Poaceae	265
8	Pakis	*Nepholepis biserrata SCHOTT.*	Polypodiaceae	2
9	Terap	*Artocarpus elasticus*	Moraceae	72
10	Akar Kunyit	*Coscinium blumeanum Merr.*	Menispermaceae	7
11	Beringin	*Ficus benjamina*	Moraceae	13
12	Semantung	*Ficus alba*	Moraceae	27

Sources: Observations, 2016

According to Table 4 rumput teki and papaitan favored by a third elephant to pull the highest number found on rumput teki for two elephants and papaitan for one elephant. This is in accordance with Fadillah (2013) which states that the elephant like papaitan of the family Poaceae. Information on the number of grab for 3 days and feed a family of elephants can be seen in Table 5.

The observation and identification of plants that belong to feed the elephants numbering 12 species consist of five *family*. Elephant food plants at the seedling stage as much as 3 types and 9 types of

herbs. Plants that are found to herbaceous level of tribe Poaceae and Cyperaceae while seedling plants from the tribe found jackfruit-nangkaan (Moraceae). Plants are most taken by elephants for 3 days, namely: rumput teki (*Cyperus rotundus)* as much as 341 times, Papaitan *(Paspalum conjugatum)* as much as 265 times grabs, lampuyangan *(Panicum repens L)* as much as 99 times, sianik *(Ciperus aromaticum)* as 11 times and only occasionally eat grass needles, roots, ferns. The Sumatran elephant allegedly liked species of Cyperaceae and Poaceae because in addition to having a soft texture morphology, stature such as bushes or shrubs making it easier to reach them, other than that the plant also does not contain a very sharp odor and not slimy. To more clearly the amount of pull feed the elephants for 30 minutes in the morning and 30 minutes late for 3 days against 3 observations Sumatran elephants can be found in Appendix 1. The parts are eaten by elephants can be seen in Table 6.

Table 6. Edible Plants Section Elephant

No.	Local Name	Latin Name	Family	Parts
1	Rumput Teki	*Cyperus rotundus*	Cyperaceae	All parts
2	Rumput Jarum	*Eleusine indica*	Poaceae	All parts
3	Rumput Sianik	*Cy perus aromaticum*	Cyperaceae	All parts
4	Akar			All parts
5	Ilalang	*Imperata cylindrica*	Poaceae	Leaf
6	Lampuyangan	*Panicum repens L*	Poaceae	All parts
7	Papaitan	*Paspalum conjugatum*	Poaceae	All parts
8	Pakis	*Nepholepis biserrata*	Polypodiaceae	Stems and leaves
9	Terap	*Artocarpus elasticus*	Moraceae	All parts
10	Akar Kunyit	*Coscinium blumeanum*	Menispermaceae	All parts
11	Beringin	*Ficus beyamina*	Moraceae	The leaves and bark
12	Semantung	*Ficus alba*	Moraceae	all parts

Sources: Observations, 2016

Based on Table 6 it can be seen that for these kinds of herbs and seedlings, elephants usually ate all the plants. On the types of trees, elephants eat the leaves and bark. Elephants are homoiterm animals that can not be to graze in the open. Part of plant that elephant ate show at Figure 1.

Fig 1. Proporsion of Plant Partthat elephant ate

In doing variouselephant feeding activity usingtrunk to grab or graspeating plants, ivory to openbark on the trunk asthe food, the front legs are used forhelps suppress in choosing the typefeed plants and mouth to chew(Zulkarnaini, 1993: 24). needs elephantthe fresh herbs in a number ofmany require elephant eating vegetationsecondary forest, undergrowth and lianaswhich generally prefers elephantthe types of plants grow fast (fastgrowing species).

Grazing is done in the area of shrubby vegetation dominated by *pioneer* . Among the plants that exist around grazing can be seen in Table 6.

Table 6. Pioner plants around Areal Grazing Elephant

No.	Plant names	Scientific name	Family	Habitus
1	Akar ribu-ribu	*Lycodium flexuosum*	schizaeaceae	herb
2	Mahang*	*Macaranga* sp.	Euphorbiacea	Tree
3	Tenggek burung*	*Euodia lucida* Miq.	Rutaceae	Tree
4	Anggrung	*Trema orientalis*	ulmaceae	Semai / Tree
5	Laban	*Vitex pubescens*	Verbenaceae	Tree
6	Rumput setawar	*Boreria alata*	Rubiaceae	herb
7	Akar kait*	*Uncaria sp.*	Rubiaceae	herb
8	Rumput pait*	*Axonopus compressus*	Poaceae	herb
9	Marapuyan	*Rhodamnia cenerea*	Myrtaceae	Tree
10	Dalok	*Fordea splendidissima* L.	faba ceae	Tree
11	Kelat	Syzygium sp.	Myrtaceae	Tree
12	Sikeduduk	*Melastoma malabathricum*	Melastomaceae	Terna
13	Resam*	*Gleichenia linearis*	gleicheniaceae	herb
14	Kacang-kacangan*	*Centrosema pubescens*	Fabaceae	herb
15	Maniran	*Phyllanthus urinary*	Euphorbiaceae	herb
16	Mahang tapak gajah*	*Macaranga gigantean*	Euphorbiaceae	Tree
17	Gletang	*Tridax procumbens*	Asteraceae	herb
18	Bandotan	*ageratum conyzoides*	Asteraceae	herb
19	Krinyuh	*Eupathorium odoratum*	Asteraceae	herb
20	Putri malu	*Mimosa pudica*	Fabaceae	herb
21	Akasia*	*Acacia mangium*	Fabaceae	Tree
22	Balik angin*	*Mallotus paniculata*	Euphorbiaceae	Tree
23	Merambung	*Vernonia Arborea* Buch.	Co mpositae	Tree
24	Layau	*Adinandra dumosa* jack.	Theaceae	Tree
25	Kantong semar	*Nepenthes* sp.	Nepenthaceae	herb
26	Pulai	*Alstonia pneumatophora* Bach.	Apocynaceae	Tree

Description: * feed elephants

Table 7. Number of Family and habitus Plant Food Elephants

No.	Family	Amount	habitus
1	Schizaeaceae	1	Herb
2	Euphorbiaceae	3	Tree
		1	Herb
3	Rutaceae	1	Tree
4	ulmaceae	1	Tree
5	Verbenaceae	1	Tree
6	Rubiaceae	2	Herb
7	Poaceae	1	Herb
8	Myrtaceae	2	Tree
9	Fabaceae	2	Tree
		2	Herb
10	Melastomaceae	1	Terna
11	gleicheniaceae	1	Herb
12	Asteraceae	3	Herb
13	Campositae	1	Tree
14	Theaceae	1	Tree
15	Nepenthaceae	1	Herb
16	Apocynaceae	1	Tree
	Amount	26	

The identification results overall observation of plants in the area of grazing elephants, total 26 species. Of the 26 species, 9 of them are food elephants. Plants belonging to feed the elephants (can be

seen in Table 5) and the remaining 17 species are not favored by the elephants. Based on the observations, most plants around grazing is not favored by elephants due to taste, smell or liquid contained in the plants. Elephants only break and used to repel insects that attach to the surface of the body. Here is the number of families and habitus of plants being the food of elephants.

Based on Table 7 it can be seen that the types of trees are eaten by elephants about 13 species, as many as 12 kinds of herbs and herb as much as 1 type. Family of the most widely eaten elephants of the family Fabaceae and Euphorbiaceae each as much as 4 types. The composition of elephant feed most commonly found in tree habitus followed by herbs and herb. The types of herbs and trees are found in the area of the edge of the forest. Composition and habitus of elephant food shown at Fig 2 and Fig 3.

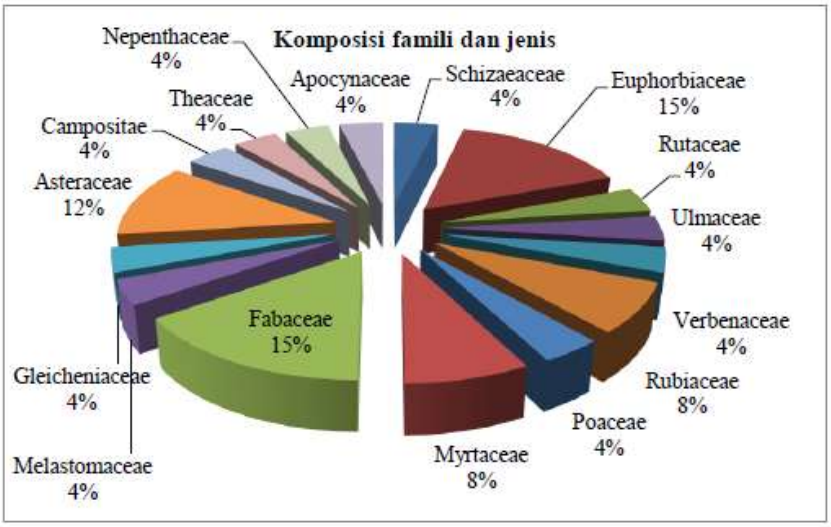

Fig 2. Composition and Family of Elephant Food

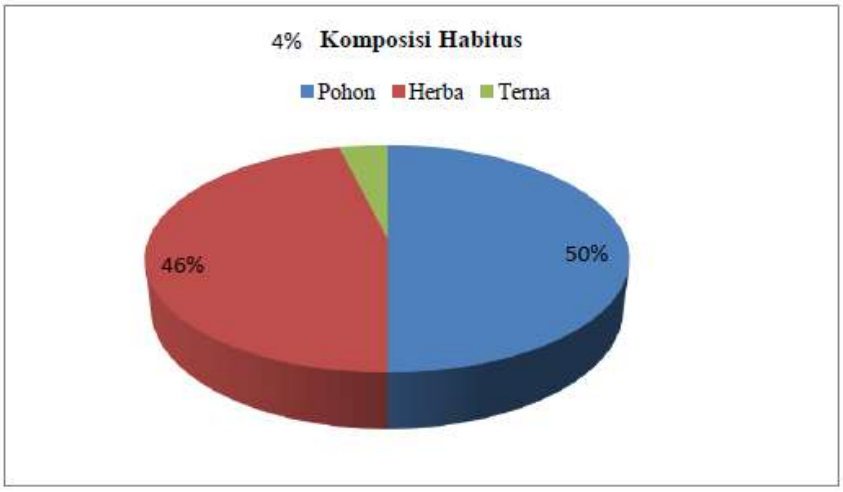

Fig 3. Habitus composition of Elephant Food

3.2.2. Based Feeding Test

Additional food is also given to the elephants to see if a plant species eaten or not by elephants. From feeding can be determined a certain plant species are feeding an elephant or not. Here is a test of elephants feeding in the field.

Table 8. Feeding trials against Elephants

No.	Local Name	Latin name	Family	Condition
1	Pagar-Pagar	*Ixonanthes icisandra*	linaceae	not edible
2	Dara-Dara	*knema hookeriana*	Myriticaeceae	not edible
3	Dalok	*Fordea splendidissima L.*	Papilionaceae	not edible
4	Medang	*Litsea sp*	Lauraceae	not edible
5	Semantung	*Ficus alba*	Moraceae	Twigs and leaves
6	Karet	*Hevea braziliensis*	Euphorbiaceae	Twigs and leaves
7	Petatal	*Ochanosthacys amentaceae*	olacaceae	not edible
8	Terap	*Artocarpus elasticus*	Moraceae	Twigs and leaves
9	Kelat Jambu	*Syzygium cuprea*	Myrtacea	not edible
10	Lengkuas Hutan	*Alpinia aquatica*	Zingiberaceae	not edible
11	Nasi-nasi	*Syzygium sp.*	Myrtacea	not edible
12	Kandis	*Garcinia sygyfolia*	guttiferae	not edible
13	Keranji	*Dialium platysephalum*	Leguminosae	not edible
14	Ludai	*Sapium baccatum*	Euphorbiacea	not edible
15	Kedondong Hutan	*Dacryodes costata*	Burseraceae	not edible
16	Nangka	*Artocarpus heterophylus*	Moraceae	Ranting and da un
17	Laban	*Vitex pubescens*	Verbenaceae	not edible
18	Mahang	*Macaranga gigantifolia*	Euphorbiacea	not edible
19	Beringin	*Ficus benjamina*	Moraceae	Twigs and leaves

Based on Table 8 it can be seen from 19 species of plants are given to the elephants, which are eaten are 15 kinds. In general the types of family Moraceae favored by elephants. This family is characterized by abundant white latex. Additionally one kind of family Euphorbiaceae also favored by elephants. According to Allen, *et al* (1997) in Andriyani (2006) says that in the rainy season elephants prefer to feed on flowers and in the dry season elephants prefer bark, bark, and twigs.

Elephants have the nature of *browsing* and *grazing* (Allen, *et al* ., 1997 in Andriyani, 2006). The nature of *browsing* is the nature of the elephant in the selection of plant parts are preferred, namely the roots, twigs, leaves, bark and sap. The nature of *grazing* is the nature of the elephant in the selection of the preferred vegetation type is a primary or secondary forest and shrubs. From the research results can be presumed that the wild elephants that live in Tesso Nilo National Park have the nature of *grazing* , where the elephants were like shrub vegetation for foraging and secondary forests used for shelter and rest.

Knowing the fondness feed the elephants do with taking some of the plants found in nature. Observation is done by providing a direct one by one of the plant species as many as 19 types of plants are taken directly from nature to an elephant. Generally giving the plant to determine the level of joy elephant be identified types of jackfruit tree-nangkaan of famyli Moraceae lot like elephants. Famyli Moraceae generally has a sweet taste and stature are not hard to make an elephant like this plant. The results showed that the elephant was like rubber from Famyli Euphorbiaceae, but only rubber are eaten by elephants. Stature and eskudat (fluid) from the rubber tree is different from trees that also belong to the Euphorbiaceae Famyli. Have the white latex rubber, not smelly and slimy like an elephant

Preferences eat an elephant is not only influenced by plant species ineating, availability of the number of plants feed and seasons also greatly affectplant taken by elephants sufficient feed her every day,therefore, elephants often doall year long journey surrounds its forest habitat(Home range). According to Mulya (1978) in Abdullah et al (2006) mentions that the source of feed elephants primary forest, secondary forest even the types of agricultural crops such as rubber and palm tree leaves sawit.dari groups of grasses, kind of wild sugarcane (*Sacharumspontanium*) is the most favoured by elephant grabbed her food by way of the browser or by crop damage. Logs (Cambium) are also eaten to meet especially calcium mineral to strengthen bones, teeth and ivory continues to grow.According Soeriaatmadja (1982: 34), "for the life of an elephant should eat at least 300-350 kg

plants a day because it is a part of life elephant, time is only used foreating and chewing. And almost everything of plants eaten, although theresome species of choice and his favorite".

4. CONCLUSION

Based on the results of the study can be summarized as follows

1. The survey results get 24 species of trees found in the trajectory path of elephants and of the 24 types of the most common types of forest rambutan and arranging with important value respectively 44.14% and 45.18%.
2. Plants are most taken by elephants for 3 days ie: rumput teki (*Cyperus rotundus)* as much as 341 times, Papaitan *(Paspalum conjugatum)* as much as 265 times the pull, grass lampuyangan *(Panicum repens L)* as much as 99 times, grass sianik *(Ciperus aromaticum)* 11 times and only occasionally eat grass needles, roots, ferns. Allegedly Sumatran elephants like plants from the tribe Cyperaceae and Poaceae because in addition to having the texture morphology soft, stature such as bushes or shrubs making it easier to reach them, besides these plants also does not contain a very sharp odor and not slimy
3. Pemberian plants to determine the level of joy elephant be identified types of nangka-nangkaan of famyli Moraceae lot like elephants. Family Moraceae generally has a sweet taste and stature are not hard to make an elephant like this plant.

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