

IDENTIFICATION OF THE SUMATRAN RHINO FOOD PLANTS IN WAY KAMBAS NATIONAL PARK LAMPUNG

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ABSTRACT

The research has purposed identify Sumatran rhino (*Dicerorhinus sumatrensis*) food plants in the Way Kambas National Park. Rhino's food samples were collected from following Sumatran rhinos daily activities in the SRS area including palatability of rhino's food, following SRS's rhino food collector which was collected rhino food supply from national park natural forest location and surrounding WKNP's villages location and WKNP's ranger including RPU team was collected sign rhino food plant in the natural WKNP habitat in 2004 – 2012. The result in this study was founded 60 families with 150 genus and 211 species of rhino browse (food) in the Way Kambas National Park Lampung. Rhino food base on genus is rubiaceae 13, annonaceae 9, euphorbiaceae 9, anacardiaceae 7, myrtaceae 7, apocynaceae 5, fabaceae 5, burseraceae 4, guttiferae/hypericaceae 4, lauraceae 4, papilionaceae 4, combretaceae 3, menispermaceae 3, sapindaceae 3 and verberaceae 3. Rhino food base on species is moraceae 26 (2 genus), rubiaceae 20 (13 genus), euphorbiaceae 18 (9 genus), anacardiaceae 10 (7 genus), annonaceae 10 (9 genus), myrtaceae 9 (7 genus), guttiferae/hypericaceae 8 (4 genus), apocynaceae 6 (5 genus), burseraceae 5 (4 genus), dilleniaceae 5 (3 genus), fabaceae 5 (5 genus), lauraceae 4 (4 genus), and papilionaceae 4 (4 genus). Rhino food base on Palatability (from top to down) is akar merah (*Musaendra frondosa* L), akar jitan (*Strophantus caudatus*), ara lebar (*Ficus elastica*), pulai (*Alstonia scholaris*), mahang (*Macaranga triloba*), sirihan (*Piper retrofractum*), kasapan (*Croton caudatus* Geissel), keputihan (*Clibadium surinaraense*), torop (*Artocarpus elasticus*), akar mencret (*Merremia peltata/macrophyllus*), cakar elang (*Gardenia* sp), sulangkar (*Leea indica* Merr.), waru (*Macaranga trichocarpa* Muell. Arg.), lemok (*Artocarpus rigidus* Blume), jambuan (*Crypteronia cumingii* Endl.), luwungan (*Ficus hispida*), soka (*Ixora* sp), akar manis (*Urceola javanica* (Blume) Boerl.), angka (*Artocarpus heterophilus*), kopen (*Baccaurea javanica* (Blume) M. A.), angrung (*Tetracera scandens* Merr.), terentang (*Buchanania sessifolia* Blume.), and paku andam (*Selaginella* sp). Rhino Food plants information is essential and important to manage rhino husbandry for the survival in the future including reference for habitat management and prepare rhino food garden.

Keywords: Sumatran rhino, Way Kambas National Park

1. INTRODUCTION

Way Kambas National Park (WKNP) located in East Lampung, Lampung province is among the protected areas and natural habitat for several endangered large mammal in Indonesia (critically endangered - APPENDIX I CITES) such as the Sumatran tiger (*Panthera Tigris sumatrae*), Sumatran rhinoceros (*Dicerorhinus sumatrensis*), Sumatran elephant (*Elephas maximus sumatranus*) and others wildlife (Dephut, 2006; IUCN, 2015).

The Sumatran rhinoceros (*Dicerorhinus sumatrensis*) is the smallest living member of the family Rhinocerotidae and is considered browser feeding on a great variety of plant species (van Strien, 1985). The population of Sumatran rhino has declined from year to year and based on the Sumatran Rhino Crisis Summit in Singapore in 2013, the Asian Rhino Range State Meeting in Lampung in 2013 and PHVA Bogor in 2015, the population of Sumatran rhino believed only about 100 individuals in the world including rhinos that exist outside their natural habitat (7 in SRS Way Kambas and 3 in BORA Sabah Malaysia), especially in WKNP does not occur drastic population decline with estimated about 30 wild rhino (WKNP, 2015; PVA, 2015). Sumatran rhino population was reduced in the world because of habitat destruction, poaching, disease factors and possibly also generic factors (inbreeding Depression). To date only remaining Sumatran rhino population in three conservation areas in Bukit Barisan Selatan National Park, Way Kambas National Park and Gunung Leuser National Park.

Sumatran rhino breeding is very difficult and unique, including in the captive or semi-captive situation. Since the Sumatran Rhino Sanctuary (SRS) was established in 1998, has on June 23, 2012 SRS produce a calf (Andatu). Andatu is the world's fourth calf born in captive or semi captive after Andalas, Suci and Harapan and Andatu is the first born since 124 years ago in Asia. The other rhino (Delilah) was born again in the SRS from the same parent in 2016. One of the key for this success is good rhino foods or browse for rhinos in the SRS. Currently food supply of rhino SRS collected from natural national park forests and surrounding WKNP's villages.

SRS existence brings a little hope for Sumatran rhino survivals in addition to their natural habitat conditions are uncertain. SRS tried to produce a more rhino calf with goal is produce as many offspring as safely possible and as insurance for Sumatran rhinoceros survival in future. Compared with rhino sanctuary in Sabah (BORA Tabin), SRS WKNP is the most conducive and enabling for the successful breeding of Sumatran rhinos because availability of healthy males and females for the pair and natural habitat conditions are still good, however to sustainable food supply for seven (7) rhino with just 100 ha habitat is not enough.

Rhino food

Availability and adequacy of rhino food quality is the main factor that should receive attention in the Sumatran rhino conservation in Way Kambas. The number of Sumatran rhino's dead animals in captivity is generally due to indigestion caused by unavailability of good feed for Sumatran rhino.

Goal for this study is identification rhino food plant of the Sumatran rhino in WKNP.

2. MATERIAL AND METHOD

Rhino food plant samples were collected from following Sumatran rhinos daily activities in the SRS area including palatability of rhino's food, following SRS's rhino food collector which was collected rhino food supply from national park natural forest location and surrounding WKNP's villages location and WKNP's ranger including RPU team was collected sign rhino food plant in the natural WKNP habitat in 2004 – 2012. Then the sample is made herbarium, further samples were sent to a laboratory reference (LIPI) to be Latin name identified.

3. RESULT AND DISCUSSION

The result in this study was founded 60 families with 150 genus and 211 species of rhino browse (food) in the Way Kambas National Park Lampung.

Rhino food base on genus is rubiaceae 13, annonaceae 9, euphorbiaceae 9, anacardiaceae 7, myrtaceae 7, apocynaceae 5, fabaceae 5, burseraceae 4, guttiferae/hypericaceae 4, lauraceae 4, papilionaceae 4, combretaceae 3, menispermaceae 3, sapindaceae 3 and verberaceae 3. This result looks same with Lee (1993) study, the most common plants the rhino eats are many species from the [Euphorbiaceae](#), [Rubiaceae](#), and [Melastomataceae](#) families. The most common species the rhino consumes is [Eugenia](#).

Rhino food base on species is moraceae 26 (2 genus), rubiaceae 20 (13 genus), euphorbiaceae 18 (9 genus), anacardiaceae 10 (7 genus), annonaceae 10 (9 genus), myrtaceae 9 (7 genus), guttiferae/hypericaceae 8 (4 genus), apocynaceae 6 (5 genus), burseraceae 5 (4 genus), dilleniaceae 5 (3 genus), fabaceae 5 (5 genus), lauraceae 4 (4 genus), and papilionaceae 4 (4 genus).

Rhino food base on Palatability (from top to down) is akar merah (*Musaendra frondosa* L), akar jitan (*Strophantus caudatus*), ara lebar (*Ficus elastica*), pulai (*Alstonia scholaris*), mahang (*Macaranga triloba*), sirihan (*Piper retrofractum*), kasapan (*Croton caudatus* Geissel), keputihan (*Clibadium surinaraense*), torop (*Artocarpus elasticus*), akar mencret (*Merremia peltata/macrophyllus*), cakar elang (*Gardenia* sp), sulangkar (*Leea indica* Merr.), waru (*Macaranga trichocarpa* Muell. Arg.), lemok (*Artocarpus rigidus* Blume), jambuan (*Crypteronia cumingii* Endl.), luwungan (*Ficus hispida*),

soka (*Ixora sp.*), akar manis (*Urceola javanica* (Blume) Boerl.), nangka (*Artocarpus heterophilus*), kopen (*Baccaurea javanica* (Blume) M. A.), angrung (*Tetracera scandens* Merr.), terentang (*Buchanania sessifolia* Blume.), and paku andam (*Selaginella sp.*). Palatability is the most preferred food which is consumed more frequently than others routinely and some time rhino eaten for short term requirements of plant for natural remedy herbs.

The previous rhino's food study in WKNP was identification 82 food plants (48 saplings, 17 lianas, 9 seedlings and 8 trees) observed, 79 were able to be identified. Leaves and trunk (73 species), roots (18 species), fruit (11 species) and flower (1 species) as parts of plants have been eaten (Suharto *et al.*, 2005). Otherwise, Candra *et al.*, (2012), more than 100 browse varieties have been recorded in the diet of captive rhinoceroses at the SRS WKNP, and 8 to 10 varieties are routinely fed on a daily basis. The number of plant species which is about 150 Sumatran rhino species (Strain, 1985).

The Sumatran rhino feeds before nightfall and in the early morning. Much of the day is spent in wallows. Sumatran rhinos are solitary animals that are browsers where the rhino requires young fresh tropical forest plants to their food source by exploring forest every day. The consumption each rhino in SRS average 50 kg leaves and 5 kg fruits per day base on 10% of body weight.

Generally rhino's browse is bushes or shrubs, trees (leaves and twigs) and fruits including tubers. This is looks same with Groves (1972), the Sumatran rhino is a browser, with a diet of young saplings, leaves, twigs, bark, fruit, smaller shrubs, canes and vines. The rhinos usually consume up to 50 kg of food a day (Van Strien, 2005). Primarily by measuring dung samples, researchers have identified more than 100 food species consumed by the Sumatran rhinoceros. The largest portion of the diet is tree saplings with a trunk diameter of 1–6 cm (Van Strien, 2005). Sumatran rhino are like salt very much (lick soil, mud, water wallow, old tree, sand, etc) and visits [salt licks](#) regularly. However rhino food plant have content good nutrition base on proximate analysis but in the same leaves there have content anti nutrition also such as tannin, saponin, fittic acid, etc. This is interesting behavior of rhino browse strategy, to reduce or neutralized the anti nutrition they are just eat food plant in small contents or portion daily but very high variety of plant which namely "browse" (van Strien, Nico, 2005). The Sumatran rhino species is a browser, feeding on a wide variety of plant material in their tropical habitat as they are an opportunistic feeder. Rhino as herbivores maintain their food habit by maintaining the ecological food in the rainforest, that way rhino need good and broad habitat to survive, if deforestation occurs will be big problem for the rhino.

The sad story about Sumatran rhino rescue program during 1985-1992 which 18 rhino was captured and send to captive program. Unfortunately just one rhino (Bina) survive to date, 17 rhino was dead with different cause. One of the causes is digestive problem because not good feeding quality. Sumatran Rhinoceros in the Sumatran Rhino Sanctuary (SRS) require rhino food plant supply like leaves and fruits from outside of sanctuary area. Location of SRS which only 100 ha insufficient to fulfill feed requirement of rhinos naturally because not all locations is used, some locations applied for rotation area. Rhino food plant (browse) supply is very important for the long term health and reproduction of SRS's rhinos.

One alternative to supply rhino feeding is to create a plantation (garden) specifically planted rhino Sumatran such as shrubs and trees and even fruit, so it is expected feed requirements can continue to be fulfilled in a sustainable manner or continuously and of course safe for rhinos. Local fruits that have collected from outside SRS have skinned and only the inner part fed to the rhinos (i.e. the water melon rind has cut off the melon prior to feeding to the rhinos). Vet is quality control of rhino's foods safety.

Tabel 1. Identification rhino browse in the Way Kambas National Park Lampung

No	Family	Local Name	Latin name (Species)	Part rhino eat	Type
1	Anacardiaceae	1 Jambu Mete	<i>Anacardium occidentale L.</i>	Daun	Pohon
2	Anacardiaceae	2 Raman	<i>Bouea burmanika/appositifolia</i>	Buah	Pohon
3	Anacardiaceae	3 Gandaria	<i>Bouea macrophylla Griff.</i>	Buah	Pohon
4	Anacardiaceae	4 Terentang	<i>Buchanania sessifolia Blume.</i>	Batang, daun	Pohon
5	Anacardiaceae	5 Rau	<i>Dracontomelon mangiferum</i>	Buah	Pohon
6	Anacardiaceae	6 Rengas	<i>Gluta renghas L.</i>	Daun	Pohon
7	Anacardiaceae	7 Kemang	<i>Mangifera caesia</i>	Buah, daun	Pohon
8	Anacardiaceae	8 Mangga	<i>Mangifera sp/indica</i>	Buah	Pohon
9	Anacardiaceae	9 Pakel	<i>Mangifera spp</i>	Buah	Pohon
10	Anacardiaceae	10 Kedondong Hutan	<i>Spondias pinnata Kurz</i>	Buah	Pohon
11	Annonaceae	1 NN	<i>Alphonsea sp</i>	Batang, daun	Pohon
12	Annonaceae	2 Akar Larak	<i>Artabotrys suaveolens Blume</i>	Batang, daun	Liana
13	Annonaceae	3 Kenanga	<i>Cananga odorata</i>	Daun	Pohon
14	Annonaceae	4 Akar Sunar	<i>Friesodielsia sp.</i>	Batang, daun	Liana
15	Annonaceae	5 NN	<i>Mitrephora sp</i>	Daun	Pohon
16	Annonaceae	6 Sirsak	<i>Oxymitra sp</i>	Daun	Pohon
17	Annonaceae	7 Banitan	<i>Polyalthia lateriflora (Miq.) King</i>	Batang, daun	Pohon
18	Annonaceae	8 Karai	<i>Polyalthia rumphii Merr.</i>	Batang, daun, akar	Liana
19	Annonaceae	9 Pepisang	<i>Uvaria littoralis Blume</i>	Batang, daun, akar	Liana
20	Annonaceae	10 Antui/jangkang	<i>Xylopia malayana Hook. f. et. Th.</i>	Batang, daun, akar	Liana
21	Apocynaceae	1 Pulau Hitam	<i>Alstonia angustiloba</i>	Batang, daun	pohon
22	Apocynaceae	2 Pulau	<i>Alstonia scholaris</i>	Batang, daun	pohon
23	Apocynaceae	3 Sarsaparilla	<i>Ichnocarpus frutescens R. Br.</i>	Batang, daun	Pohon
24	Apocynaceae	4 Akar Jitan	<i>Strophantus caudatus</i>	Batang, daun	Liana
25	Apocynaceae	5 Akar Manis	<i>Urceola javanica (Blume) Boerl.</i>	Batang, daun	Liana
26	Apocynaceae	6 Cembirit/Karetan	<i>Voacanga grandifolia (Miq.) Rolfe</i>	Daun	pohon
27	Araceae	1 Akar Tampil	<i>Rhaphidophora sp.</i>	Daun, batang	Liana
28	Asteraceae/Compositae	1 Keputih	<i>Clibadium surinaraense</i>	Daun, batang	Semak
29	Asteraceae/Compositae	2 Ki Rinyuh	<i>Eupatorium inulaefolium H. B. K.</i>	Batang, daun	Semak
30	Bignoniaceae	1 Kayu Lanang	<i>Oraxylum indicum (L.) Kurz.</i>	Daun	Pohon
31	Burseraceae	1 Kenari	<i>Canarium commune</i>	Daun, pucuk	Pohon
32	Burseraceae	2 Mentru sengir	<i>Canarium denticulatum</i>	Daun, pucuk	Pohon
33	Burseraceae	3 Kandisan	<i>Dacryodes rostrata (Blume) H. J. Lam</i>	Batang, daun	Pohon
34	Burseraceae	4 Asem-asem	<i>Santiria cf. tomentosa Blume</i>	Batang, daun	Pohon
35	Burseraceae	5 NN	<i>Scutinanthe brunnea</i>	Daun	Pohon
36	Caesalpiniaceae	1 Johar	<i>Cassia javanica/siamea</i>	Daun, pucuk	Pohon
37	Caesalpiniaceae	2 Menggris	<i>Koompassia malaccensis Maing</i>	Daun	Pancang
38	Celastraceae	1 Perupuk	<i>Lophopetalum multinervium Ridley</i>	Batang, daun	Pohon
39	Celastraceae	2 Akar pelanduk	<i>Salacia chinensis Linn.</i>	Batang, daun, akar	Liana
40	Celastraceae	3 Manggong	<i>Salacia oblongifolia Blume</i>	Batang, daun	Sapling
41	Combretaceae	1 Akar Kuningan	<i>Combretum cf. tetralophum Clarke</i>	Batang, daun	Liana
42	Combretaceae	2 Teluntum	<i>Lumnitzera sp</i>	Daun	Pohon
43	Combretaceae	3 Akar Dani	<i>Quisqualis indica L.</i>	Batang, daun, akar	Liana
44	Connaraceae	1 NN	<i>Agelaea trinervis Merr.</i>	Batang, daun, akar	Pohon
45	Connaraceae	2 Akar Gung	<i>Connarus monocarpus L.</i>	Batang, daun	Liana
46	Connaraceae	3 Akar ladaan	<i>Connarus sp.</i>	Batang, daun, akar	Liana
47	Convolvulaceae	1 Kacangan	<i>Argyreia mollis Choisy</i>	Batang, daun	Liana
48	Convolvulaceae	2 Akar Mencret/ulan	<i>Merremia peltata/macrophyllus</i>	Batang, daun	Liana
49	Crypteroniaceae	1 Jambuan	<i>Crypteronia cumingii Endl.</i>	Daun	Pohon
50	Dilleniaceae	1 Sempu Air	<i>Dillenia excelsa (Jack) Mart.</i>	Daun	Pohon
51	Dilleniaceae	2 Sempu Putih	<i>Dillenia grandifolia</i>	Daun	Pohon
52	Dilleniaceae	3 Akar Boh	<i>Tetracera akara</i>	Daun	Liana
53	Dilleniaceae	4 NN	<i>Tetracera macrophylla</i>	Daun	Pohon
54	Dilleniaceae	5 Anggrung	<i>Tetracera scandens Merr.</i>	Batang, daun	Pohon
55	Dipterocarpaceae	1 Minyak	<i>Dipterocarpus caudiferus Merr.</i>	Daun, pucuk, kulit	Pohon
56	Dipterocarpaceae	2 Meranti merah	<i>Shorea leprosula</i>	Batang, daun	Pohon
57	Dipterocarpaceae	3 Meranti	<i>Shorea sp</i>	Batang, daun	Pohon
58	Ebenaceae	1 Serutan	<i>Diospiros buxifolia (Blume) Hiern.</i>	Batang, daun	Pohon
59	Elaeocarpaceae	1 Ganitri	<i>Elaeocarpus sphaericus K. Sch.</i>	Batang, daun	Pohon
60	Euphorbiaceae	1 Mericaan	<i>Antidesma montanum Blume</i>	Daun	Pohon
61	Euphorbiaceae	2 Plangas	<i>Antidesma neurocarpum Miq.</i>	Daun, pucuk	Pohon
62	Euphorbiaceae	3 Teluntum, kisapi	<i>Antidesma stipulare Blume</i>	Batang, daun	Pohon
63	Euphorbiaceae	4 Meniran	<i>Antidesma tetrandrum</i>	Daun	Pohon
64	Euphorbiaceae	5 Rambai-rambai	<i>Aporosa frutescens Blume</i>	Daun, buah	Pohon
65	Euphorbiaceae	6 Berasan	<i>Aporosa nervosa</i>	Daun	Pohon
66	Euphorbiaceae	7 Kopen d besar/rawa	<i>Baccaurea javanica (Blume) M. A.</i>	Daun, buah	Pohon
67	Euphorbiaceae	8 Bolawah	<i>Baccaurea pyrifomis Gage</i>	Batang, daun	Pohon
68	Euphorbiaceae	9 Kokosan/kepundung	<i>Baccaurea racemosa (Reinw. Ex Blume) Muell. Ar</i>	Buah	Pohon
69	Euphorbiaceae	10 Joho	<i>Baccaurea sumatrana Muell. Ars.</i>	Daun, pucuk	Tiang
No	Family	Local Name	Latin name (Species)	Part rhino eat	Type
71	Euphorbiaceae	12 Kelandri	<i>Bradleya hirsuta Roxb</i>	Daun	Pohon
72	Euphorbiaceae	13 Landri	<i>Brenya Virgata (Blume) Muell. Arg.</i>	Batang, daun	Pohon
73	Euphorbiaceae	14 Kasapan	<i>Croton caudatus Geissel</i>	Batang, daun	Semak
74	Euphorbiaceae	15 Pohon Ling/Rois	<i>Glochidion rubrum Blume</i>	Daun	Pohon
75	Euphorbiaceae	16 Waru	<i>Macaranga trichocarpa Muell. Arg.</i>	Batang, daun	Pohon
76	Euphorbiaceae	17 Mahang Hijau	<i>Macaranga triloba</i>	Daun	Pohon
77	Euphorbiaceae	18 Ladaan Pohon	<i>Mallotus subpeltatus (Blume) Muell. Arg</i>	Daun	Pohon
78	Fabaceae	1 Jalingan	<i>Archidendron sp.</i>	Daun	Pohon
79	Fabaceae	2 Kaliandra	<i>Calliandra</i>	Daun	Pohon
80	Fabaceae	3 Akar Delapan	<i>Canthorsema pubescens Benth</i>	Batang, daun	Liana

No	Family	Local Name	Latin name (Species)	Part rhino eat	Type
141	Moraceae	26 Kiara	<i>Ficus sp.</i>	Daun, batang	Pohon
142	Myrsinaceae	1 NN	<i>Embelia viridiflora</i> Scheff.	Daun	Pohon
143	Myrsinaceae	2 NN	<i>Maesa perlaris</i> (Lour.) Merr.	Batang, daun	Pohon
144	Myrsinaceae	3 Akar Katu	<i>Maesa ramentacea</i> Wall.	Batang, daun	Liana
145	Myrtaceae	1 Salam Sayur	<i>Acmena acuminatissima</i> (Blume) Merr. & Perry	Daun	Pohon
146	Myrtaceae	2 Cengkehan	<i>Eugenia sp</i>	Daun	Pohon
147	Myrtaceae	3 Gelam	<i>Melaleuca cajuputi</i>	Daun	Pohon
148	Myrtaceae	4 Jambu Biji	<i>Psidium guajava</i> L.	Daun, buah	Pohon
149	Myrtaceae	5 NN	<i>Pternandra caeruleascens</i> Jack	Daun	Pohon
150	Myrtaceae	6 Tiga Urat 1	<i>Rhodamnia cinerea</i> Jack.	Daun	Pohon
151	Myrtaceae	7 Salam	<i>Syzygium polyanthum</i>	Daun	Pohon
152	Myrtaceae	8 Jambon	<i>Syzygium sp / Eugenia sp</i>	Daun, pucuk	Pohon
153	Myrtaceae	9 Salaman	<i>Syzygium sp.</i>	Batang, daun	Pohon
154	Oleaceae	1 NN	<i>Chionanthus nitens</i> K. et V.	Daun	Pohon
155	Oleaceae	2 Melati Hutan	<i>Jasminum multiflorum</i>	Daun	Semak
156	Papilionaceae	1 Johar	<i>Dalbergia mimosella</i> (Blanco) Prain	Batang, daun	Pohon
157	Papilionaceae	2 Akar tuba/Gadel	<i>Derris trifoliata</i> Lour.	Batang, daun, akar	Liana
158	Papilionaceae	3 Bengkoang	<i>Pachyrrhizus erosus</i> L.	Buah	Umbi
159	Papilionaceae	4 Angsana/sono kembang	<i>Pterocarpus indicus</i> Will.	Daun	Pohon
160	Piperaceae	1 NN	<i>Piper aduncum</i> L.	Daun	Pohon
161	Piperaceae	2 Sirihan	<i>Piper retrofractum</i>	Batang, daun	Semak
162	Poaceae	1 Alang-Alang	<i>Imperata cylindrica</i> (L) Beauv.	Akar	Semak
163	Polygalaceae	1 NN	<i>Xanthophyllum flavescens</i> Roxb.	Daun	Semak
164	Polygalaceae	2 Minyak berok	<i>Xanthophyllum sp.</i>	Daun	Pohon
165	Proteaceae	1 NN	<i>Helicia robusta</i> Wall	Buah	Pohon
166	Rhamnaceae	1 Damar	<i>Vetilago sp.</i>	Daun	Pohon
167	Rhamnaceae	2 NN	<i>Zizyphus horsfieldii</i> Miq.	Daun	Pohon
168	Rosaceae	1 Akar Duri Kampretan	<i>Rubus moluccanus</i> L.	Batang, daun, akar	Semak
169	Rubiaceae	1 Nangi	<i>Adina Polycephala</i>	Daun, pucuk	Pohon
170	Rubiaceae	2 Nangok	<i>Adina sp.</i>	Daun	Pohon
171	Rubiaceae	3 Akar Duri	<i>Canthium horridum</i> Blume	Batang, daun	Liana
172	Rubiaceae	4 NN	<i>Coptosapelta tomentosa</i> (Blume.) Val. Ex K. H.	Daun	Pohon
173	Rubiaceae	5 Soka Putih	<i>Gaertnera vaginans</i> (DC.) Merr.	Batang, daun	Semak
174	Rubiaceae	6 Cakar elang	<i>Gardenia sp</i>	Batang, daun	Semak
175	Rubiaceae	7 Jambuan Tiga	<i>Gardenia tubifera</i> Wall.	Daun	Pohon
176	Rubiaceae	8 Kopen d kecil/darat	<i>Hypobathrum microcarpum</i> (Blume) Bakh. F.	Daun	Pohon
177	Rubiaceae	9 Soka Merah	<i>Ixora sp</i>	Batang, daun	Semak
178	Rubiaceae	10 Soka Bulu	<i>Ixora sp.</i>	Batang, daun	Semak
179	Rubiaceae	11 Soka Klewer	<i>Ixora sp.</i>	Daun	Semak
180	Rubiaceae	12 NN	<i>Lasianthus sp</i>	Daun	Semak
181	Rubiaceae	13 Akar Merah	<i>Musaendra frondosa</i> L.	Batang, daun	Liana
182	Rubiaceae	14 NN	<i>Psychotria polycarpa</i> Hook.f.	Batang, daun, akar	Liana
183	Rubiaceae	15 Georan	<i>Psychotria sarmentosa</i>	Daun	Liana
184	Rubiaceae	16 Kepil	<i>Tarenna fragrans</i> (Blume) K. et. V	Daun	Pohon
185	Rubiaceae	17 NN	<i>Tricalysia singularis</i> K. Schum.	Daun	Semak
186	Rubiaceae	18 Cakar Elang Hijau	<i>Uncaria acida</i> (Hunter) Roxb.	Batang, daun	Semak
187	Rubiaceae	19 Gambir	<i>Uncaria gambir</i> Roxb.	Umbi	Semak
188	Rubiaceae	20 Lemok Akar	<i>Uncaria hirsuta</i> Havil.	Batang, daun	Liana
189	Rutaceae	1 Jeruk Hutan	<i>Citrus sp</i>	Buah	Pohon
190	Rutaceae	2 Karetan	<i>Evodia cf. pilulifera</i> King	Buah	Pohon
191	Sapindaceae	1 Pancang	<i>Allophylus cobbe</i> L. R	Batang, daun	Semak
192	Sapindaceae	2 NN	<i>Lepisanthes sp</i>	Daun	Pohon
193	Sapindaceae	3 Rambutan	<i>Nephelium lappaceum</i>	Buah	Pohon
194	Sapotaceae	1 Nangkan	<i>Palaquium rostatum</i>	Daun, buah	Pohon
195	Selaginellaceae	1 Paku Andam/cakar ayam	<i>Selaginella sp</i>	Batang, daun	Menjalar
196	Simarubaceae	1 Pasak Bumi	<i>Eurycoma longifolia</i> Jack.	kulit kayu	Pohon
197	Smilacaceae	1 Gembilian	<i>Smilax sp</i>	Batang, daun, akar	Liana
198	Solanaceae	1 Terongan	<i>Solanum torvum</i>	Daun	Semak
199	Sterculiaceae	1 Walangan	<i>Pterospermum diversifolium</i> Blume	Daun	Pohon
200	Sterculiaceae	2 Bayur	<i>Pterospermum javenicum</i> Jungh.	Daun	Pohon
201	Sterculiaceae	3 NN	<i>Schapium macropodium</i> Beume.	Daun	Pohon
202	Theaceae	1 Teluntum	<i>Gordonia exelsa</i> Blume	Daun	Pohon
203	Theaceae	2 Mentru / Puspa	<i>Schima walchii</i> Choisy	Batang, daun	Pohon
204	Thymelaeaceae	1 Gaharu	<i>Aquilaria malaccensis</i> Lamk	Batang, daun	Pohon
205	Tiliaceae	1 Deluak/talok	<i>Grewia acuminata</i> Juss.	Daun, pucuk	Pohon
206	Verbenaceae	1 Winong	<i>Clerodendrum paniculatum</i>	Buah	Pohon
207	Verbenaceae	2 Laban kapur	<i>Vitex quinata</i> (Lour.) F. N. Will.	Batang, daun	Pohon
208	Verberaceae	3 Sungkai Hutan	<i>Pheronema canescens</i> Jack.	Batang, daun	Pohon
209	Vitaceae	1 Tribin	<i>Cissus nodosa</i> Blume	Batang, daun	Pohon
210	Vitaceae	2 NN	<i>Tetrastigma lanceolarium</i> Planch.	Daun	Pohon
211	Zingiberaceae	1 Tepus/laosan	<i>Alpinia galanga</i>	Daun	Semak

Habitat big herbivore mammal in WKNP

The other herbivore wildlife such as elephant, tapir and deer has been food plants competition with rhino because they have similar food plants, however natural habitat have natural mechanism in the ecosystem. Wild rhino population in WKNP has been stable since few year ago and is best population Sumatran rhino in Sumatera to date but they are habitat just in the middle of WKNP, probably one of reason rhino choice this area because feeding supply is good with high variety of browse plants.

4. CONCLUSION

Rhino Food plants information is essential and important to manage rhino husbandry for the survival in the future including reference for habitat management and prepare rhino food garden.

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