BIOVALENTIA: BIOLOGICAL RESEARCH JOURNAL
A Sriwijaya Journal For International Biologist

HOME   ABOUT   LOGIN   REGISTER   SEARCH   CURRENT
ARCHIVES   ANNOUNCEMENTS   VISIONS

Home > *Archives* > *Vol 3, No 1 (2017)*

VOL 3, NO 1 (2017)

TABLE OF CONTENTS

VOL 3, NO 1 (2017): MAY 2017

DIVERSITY OF WATER ENVIRONMENT GASTROPODA IN A EMPAYANG-KASAP RIVER IN THE DISTRICT LAHAT   PDF
Desven Hecca, Saleh Hidayat, Susi Dewiyeti

CONDITION OPTIMIZATION PRODUCTION XYLANASE THERMOSTABLE BY Bacillus licheniformis TS10 USING SUBSTRATE OIL PALM EMPTY FRUIT BUNCHES   PDF
Ayu Safitri, - Muharni, Heni Yohandini Kusumawati

HABITAT OPTIMALIZATION OF CAPTIVE DEER PT. PUSRI PALEMBANG   PDF
Nadya Rahmania, Indra Yustian, Arum Setiawan

THE ANTIBACTERIAL ACTIVITY OF WATER APPLE LEAVES ACTIVE COMPOUND (Syzygium zeylanicum) AGAINST Escherichia coli AND Staphylococcus aureus   PDF
- Hamidah, - Salni, Nina Tanzerina

ANTIBACTERIAL ACTIVITY STUDY OF ACTIVE FRACTION FROM CHICK WEED PLANTS (Ageratum Conyzoides L.) AGAINST Bacillus Subtilis AND Vibrio Cholerae   PDF
Ratih Anggara, - Munawar, - Elfita

HORMESIS PHENOMENA OF SOME PARAMETER ASPECT IN USAGE OF WATER LETTUCE (Pistia stratiotes L.) FOR PHYTOREMEDIATION PROCESS OF PETROLEUM LIQUID WASTE   PDF
Hanifa Marisa, Sri Pertiwi Estuningsih

VEGETATION ANALYSIS ON RECLAMATION AREA OF COAL MINE OF PT. BUKIT ASAM TANJUNG ENIM, SOUTH SUMATERA   PDF
Rendra Bayu Prasetyo, Hanifa Marisa, - Sarno

E-ISSN: 2477-1392

Sidebar

ABOUT BIOVALENTIA

Editorial Team
Focus and Scope
Author Guidelines
Publication Ethics
Open Access Policy
List of Reviewers
Journal History

PLAGIARISM DETECTION

SCREENED BY iThenticate

BIOVALENTIA adopts the iThenticate plagiarism detection software for article processing.

BIOVALENTIA REFFERENCE TOOLS

Journal Template

MENDELEY

BIOVALENTIA INDEXED BY

DOAJ DIRECTORY OF OPEN ACCES JOURNALS
Crossref
sinta Science and Technology Index
Google Scholar

USER

Username [   ]
Password [   ]
☐ Remember me
[Login]

FOR AUTHORS

Submit Your Paper
Author Guidelines
Manuscript Template

COPYRIGHT AGREEMENT

©opyright

JOURNAL CONTENT

Search
[   ]

Search Scope
[All   ▼]
[Search]

Browse
By Issue
By Author
By Title
By Sections
By Identify Types

Journal Help

FONT SIZE

NOTIFICATIONS

View
Subscribe

GOOGLE SCHOLAR CITATIONS

Citation Indices	All	Since 2014
Citation	16	16
h-index	2	2
i10-index	0	0

HOME   ABOUT   LOGIN   REGISTER   SEARCH   CURRENT
ARCHIVES   ANNOUNCEMENTS   VISIONS

Home > *About the Journal* > *Editorial Team*

EDITORIAL TEAM

EDITOR-IN-CHIEF

Sarno Sarno, Biology Department, Sriwijaya University, Indonesia

MANAGING EDITOR

Enggar Patriono, Biology Department, Sriwijaya University, Indonesia

EDITORIAL BOARD

Budi Setiadi Daryono, Biology Faculty, Gadjah Mada University, Indonesia
Wilson Novarino, Biology Department, Andalas University, Indonesia
Zazili Hanafiah, Biology Department, Sriwijaya University, Indonesia
Agus Purwoko, Biology Department, Sriwijaya University, Indonesia
Arum Setiawan, Biology Department, Sriwijaya University, Indonesia
Laila Hanum, Biology Department, Sriwijaya University, Indonesia
Elisa Nurnawati, Biology Department, Sriwijaya University, Indonesia

PEER REVIEWERS

Syafruddin Ilyas, Biology Department, North Sumatera University, Indonesia
Sumardi Sumardi, Biology Departement, University of Lampung, Indonesia
Rudhi Pribadi, Marine Science Department, Diponegoro University, Indonesia
Zulkifli Dahlan, Biology Department, Sriwijaya University, Indonesia
Hilda Zulkifli, Biology Department, Sriwijaya University, Indonesia
Hary Widjajanti, Biology Department, Sriwijaya University, Indonesia
Indra Yustian, Biology Department, Sriwijaya University, Indonesia

SECTION EDITORS

Dwi Puspa Indriani, Biology Department, Sriwijaya University, Indonesia
Doni Setiawan, Biology Department, Sriwijaya University, Indonesia
Rahmat Pratama, Biology Department, Sriwijaya University, Indonesia

E-ISSN: 2477-1392

Sidebar

ABOUT BIOVALENTIA

Editorial Team
Focus and Scope
Author Guidelines
Publication Ethics
Open Access Policy
List of Reviewers
Journal History

PLAGIARISM DETECTION

BIOVALENTIA adopts the iThenticate plagiarism detection software for article processing.

BIOVALENTIA REFFERENCE TOOLS

Journal Template
MENDELEY

BIOVALENTIA INDEXED BY

DOAJ
Crossref
sinta
Google Scholar

USER

Username [ ]
Password [ ]
☐ Remember me
Login

FOR AUTHORS

Submit Your Paper
Author Guidelines
Manuscript Template

COPYRIGHT AGREEMENT

Copyright

JOURNAL CONTENT

Search [ ]
Search Scope
All ▼
Search

Browse
By Issue
By Author
By Title
By Sections
By Identify Types

Journal Help

FONT SIZE

NOTIFICATIONS

View
Subscribe

GOOGLE SCHOLAR CITATIONS

Citation Indices	All	Since 2014
Citation	16	16
h-index	2	2
i10-index	0	0

Habitat Optimalization of Captive Deer PT. Pusri Palembang

Nadya Rahmania[1]*, Indra Yustian[2], Arum Setiawan[3]

[1] Student of Environmental Management Postgraduate Program Sriwijaya University

[2,3] Lecturer of Biology Department FMIPA Sriwijaya University

*correspondent author: Telp. 08980155668 , (0711) 5615516

email: nadyarahmania@student.pps.unsri.ac.id

ABSTRAK

Rusa adalah salah satu spesies yang mengalami penurunan populasi karena menjadi target perburuan liar. Demi mencegah penurunan populasinya, dilakukan upaya pelestarian dengan cara konservasi baik konservasi in-situ maupun ex-situ. Penangkaran rusa PT. Pusri Palembang merupakan satu-satunya penangkaran rusa yang berada di area perkotaan Palembang yang menjalankan upaya konservasi. Tujuan penelitian ini adalah untuk menganalisis komponen habitat penangkaran rusa yang telah ada meliputi pakan sehari-hari, kebutuhan air, dan tempat naungan. Selanjutnya untuk menentukan tingkat palatabilitas pakan dalam penangkaran dan untuk menganalisis kondisi habitat sebagai dasar pengelolaan penangkaran rusa yang lebih optimal. Metode wawancara, studi pustaka dan pengamatan lapangan digunakan untuk memperoleh data mengenai populasi dan kondisi habitat di penangkaran rusa PT. Pusri Palembang. Berdasarkan hasil pengamatan, diketahui bahwa tempat naungan berupa pohon, kebutuhan air yang tersedia dengan adanya kolam air, pakan dan kondisi area penangkaran yang dijaga oleh penangkar dapat memenuhi kebutuhan hidup rusa. Dapat disimpulkan bahwa kondisi habitat di penangkaran rusa PT. Pusri Palembang masih cukup baik, dan area seluas 1,5 hektar sebagai habitat rusa masih dapat menampung jumlah total 44 rusa (22 rusa sambar dan 22 rusa totol) pada tahun 2015.

Kata kunci: rusa sambar, rusa totol, naungan, kebutuhan air, palatabilitas pakan

ABSTRACT

Deer are one of the species that going through a reduction of population because its being used as the target of illegal hunting. To prevent the reduction in population, the efforts to save them with conservation method both in-situ or ex-situ has been done. Captive deer in PT. Pusri Palembang is the only captive deer, which located in urban areas of Palembang and carrying out an ex-situ conservation effort. This research aimed to analyze the habitat condition such as daily feed, water needed, and shelter, to know about the level of palatability and also to analyze the habitat condition as a basis of captive deer management towards an optimization. The interview method, literature study and field observation are used to get the data about population and habitat condition in captive deer PT. Pusri Palembang. The results of the research showed that the shelter, water consumption has fulfilled by the water pool, foods and captivity condition that was taken care by the captive keepers. It can be concluded that overall the habitat condition in the captive deer PT. Pusri Palembang is quite good, and 1,5 hectare areas still be able to maintain the total of 44 deers (22 sambar deers and 22 chital deers) in 2015.

Key words: sambar deer, chital deer, shelter, water needed, palatability

INTRODUCTION

Captive deer of PT. Pusri Palembang was located at Mayor Zen street and was built in 2008 with the agreement from Balai Konservasi Sumberdaya Alam (BKSDA) Prov. Sumsel No. SK.66/IV-K.8/2008 Tgl. 9 Juni 2008. Captve deer PT. Pusri Palembang is part of ex-situ conservation effort to protect deer population (Bismark *et al*., 2011) and it also the only one captivity in urban areas of Palembang which has an 1,5 hectare areas. At first, the deer were imported from the captivity in Cisarua, Bogor, West Java in 2007, at that time, its only 3 paired of chital deer and six species of sambar deer (4 males and 2 females) which entrusted by West Java Police. Based on the captive keeper's data, until 2015, the population has reached 22 species of sambar deer (*Rusa unicolor*) and also 22 species of chital deer (*Axis axis*).

In Indonesia, deer are one of the species that being protected by law because of its limited status (Garsetiasih and Takandjandji, 2006).(IUCN Red List, 2015) said deer are one of the species that going through the reduction of population lately since its used as a target of illegal hunting (Dewi and Wulandari, 2011) and being used as protein source (Semiadi *et al*., 2008). Thohari *et al*., (2011) said that captivity is an effort to increase the population through breeding and rearing of wild animal and plant species while maintaining the purity of its species (PP No. 8 Tahun 1999 tentang Pemanfaatan Jenis dan Satwa Liar).

According to Kamus Besar Bahasa Indonesia, optimization or optimalization comes from the word "optimal", it means best, the highest and the most profitable. Therefore, optimization is the effort to find the highest value which has been provided in order to get results as expected. Optimization steps that can be done is habitat analysis, such as shelter (Bismark *et al*., 2011), water needed, food and palatability (Sita and Aunurohim, 2013) also the captivity condition. The aim of this research is to analyze the habitat components such as daily food, water needed, and shelter. Also to determine about the palatability level and analyze the habitat condition as a basis of captive deer management towards an optimization.

MATERIALS AND METHODS

This research was conducted in January 2015 in captive deer PT Pusri Palembang.

Tools and Object

The tools used in this research are the stationary, notebook, and camera. The object of this research is captive deer PT. Pusri Palembang.

Data Collection Technique

The primer data were obtained through interview method with the captive keeper and also field observation. Primer data included habitat condition, such as daily meal, palatability, water needed and shelter. Secondary data,including deer population and soil condition in the captivity were obtained through field observation, literature studied, keeper's data and also the latest research related to the topic. Deer population data will be presented through a table.

Data Analysis

Data analysis method used in this research is descriptive analysis.

RESULTS AND DISCUSSION

1. Shelter

According to field observation, the captivity has a shelter consist of trees along its side. The most common types of the trees are Ketapang (*Terminalia catappa*), Mahoni (*Swietenia mahagoni*) and Trembesi (*Salmania saman*) with 18 as totals. This also supported by Santoso *et al*. (2012) research, stated that these types of trees are shade plant and often uses as environment shelter and air pollution filter because its ability to absorb the carbon (Stevanus and Sahuri, 2014). Although the shelter may not be as thick as its natural habitat, it can cover the deers from extreme weather. It is supported by Hasnawati *et al*. (2006) statement, the shelter thickness will reduce the availability of grass because the sun will be blocked by the trees.

Besides trees, the captive deer also have rumput gajah (*Pennisetum purpureum*). Rumput gajah is known as a superior forage (Adrianton, 2010) which often used and consumed in the cattle also in captivity. It is also supported by Fitriyanty *et al*. (2014) research, stated that rumput gajah tend to be preferred because it becomes their habit to consume it everyday apart from alternative food given from captivity.

2. Water Needed

Water is a very important component and its needed by all living. The water needs in captive deer PT. Pusri Palembang had fulfilled by $\pm$ 10 meters of pool in the middle of captivity. The pool consists the sewer and water taps and its used to replace the water if it gets dirty. This also in accordance with the opinion of Garsetiasih and Takandjanji(2006), which states that a captive should have a tub or pool and equipped with a generator.

The waterpool in the captivity is quite enough to fulfill the water consumption of deers. But the waterpool sometimes used by the deers to wallow than using it to drink. To optimize the waterpool as a water source, it is better if the pool is not use as a wallow place, so the deer condition will always good. The other pool need to be built so it can be used as wallow place rather than drinking it directly from the waterpool. This is supported by the opinion of Semiadi and Nugraha (2004) which states a waterpool that serves as drinking water, upper place can be covered with wire so the deer will nottry to get into the pool but only its snout can get in to drink.

Figure 1. Water pool in captive deer PT. Pusri Palembang

3. Foods

According to field observation, the foods given in captive deer PT. Pusri Palembang divided into two types, such as forage and additional food. The forage is from rumputpaitan(*Paspalumconjugatum)* and bayam-bayaman (*Asystasia*sp). Both of these forages are given as much as 50 kg, and given two times a day, at 08.00 am and 03.00 pm.Furthermore, tubers are an additional food which given as much as ± 1.5 kg twice a day. It is required to cutthe tubers into small size to make it easier for the deer to consume.Forages were given in captivity is not enough for 44 deer. In accordance with related research of (Sutrisno, 1996 in Kartono*et al*. 2008) which states that a sambar deer needs as much as 5.823 kg/each/day of fresh foods or 11.64 kg/2species/day. In accordance with this research, captive deer PT. Pusri with a total of 100 kg of foods for each day (twice per day) are not enough for 44 deer. More than 200 kg per day should be added to fulfill the foods for all of the deer.

Figure 2. *Asystasia* sp (A), *Paspalum conjugatum* (B)

Besides the forages and tubers as a daily food, captive deer PT. Pusri Palembang also gives the vitamin in capsule shape and its given together with banana to make it easier for deer to consume. This result is in accordance with Sita and Aunurohim (2013) research which states, banana was chosen as a medium to deliver the vitamin because its sweeter than other fruit. This taste is growing attractiveness and stimulate the animals to consume the vitamin, so the consumption of bananas tend to be high, as well as other species of ruminants are also preferred sweeter taste than salty or bitter taste, but it can because of low crude fiber (0,6%). Semiadi and Nugraha (2004) stated that deers doesn't really need vitamin for their health so a vitamin was given only once a month.

Feeding method was done by "cafetaria method". Semiadi and Nugraha (2004) states, this method was done by providing the food and let the deer choose which food they want to eat. Its also applied in captive deer PT. Pusri Palembang. Feeding method was done by throwing the food into the captivity (catchment area) through the special place. This special place is like a small part of the land in the deer area that has been fenced all around it. Size of this place is 5x5 m approximately. Sita and Aunurohim (2013) stated that the advantage of this method is those deer can feed themselves and choose what they want to eat also which ones they do not want to eat, while the disadvantage of this method is the foods they do not want to eat will remains a lot.

Figure 3. A place for giving the food to the deers

4. Palatability

Palatability is a degree or preference level of foods consumed in the captivity, which can be seen by how much deers consume it without left over (Semiadi and Nugraha, 2004). In the field observation, it can be seen, the deer more prefer with forages than other additional food like tubers. It is supported by the research that has been done by Kushartono and Iriani (2004) which states the forages including paitan grass (*Paspalum conjugatum*) is one of the grass field that has a protein in it between 60-85%.

According to Semiadi and Nugraha (2004), the indicator of palatability is, high or low the crude fiber is contained in its food. The lower crude fibers contained in the food, the higher palatability will it be. The forages that are given in the captivity is the fresh forages taken by the keepers itself from his private garden. Crude fiber is contained in the food can be seen in this following table:

Table 1. Crude fiber content in the greeneries given in the captive deer PT. Pusri Palembang

Name	Crude Fiber (%)
Paspalum conjugatum	40,94
Asystasia sp	19,68

*source: Laboratory of Chemical and Microbiology, Faculty of Agriculture, Sriwijaya University, Indralaya (2015).

Based on the table above, it can be seen that two types of the forages have no crude fiber more than 50 %, which means that both types of the forages given in captive deer PT. Pusri Palembang has a high palatability. Church (1998) in Afzalani *et al*. (2008) states if the crude fiber content in the food is high, it will increase the pressure in the rumen and it will decrease the food consumption. Foods given in the captive deer PT. Pusri Palembang has fulfilled the nutrition contained for all of the deers. However, it still not fulfilled the total weight of the feeds that should be given.

To reach the optimization in the terms of food, the foods should be given twice more than the deer's own weight because the total of the deer also twice time more than it should be in the 1,5 hectare captive area. It can be expected that the keepers should add more forages from leguminous type because almost all of the part of leguminous (Dewi and Wulandari, 2011) including flower, leave, and fruit can be used. Furthermore,

according to Semiadi and Nugraha (2004) the other foods such as rice bran or corn bran can be given to fulfill the lack of the foods because it contains high carbohydrates.

5. Individual Deer

Based on the field observation and interview with the keeper, it can be obtained, in late 2012 and early 2013, 3 of sambar deer was born. In 2014, 2 of sambar deer was born and in early 2015, 2 of chital deer was born. So in 2015, a total deer is 44 including 22 sambar deer and 22 chital deer. The amount of the deer keep changing, cause its continue to grow and deer keeps giving a birth.

Deer in the captivity have reached its maximum level. Optimization steps that should be done to minimize deer population is by reducing the number of deer by moving or transfer it to the other captivity, because it can cause an imbalance between deer as individual with their habitat. This is also supported by a statement from Garsetiasih and Takandjanji (2006) which states that the breeding with ranch system (as implemented in captivity PT. Pusri Palembang) ideally just to accommodate 10 individual deer in 1 ha area, while captive deer PT. Pusri Palembang, which has 1.5 ha has been accommodating 44 deer. Therefore, the captive deer management from PT. Pusri Palembang may consider to reduce the number of deer in the future.

Table 2. Female and Male Ratio based on its Age

Type	Age range	Male	Female
Sambar deer	Adult	10	6
	Juvenile	2	4
	Child	-	-
Chital deer	Adult	7	11
	Juvenil	1	1
	Child		

*2 individu of chital deer still not identified whether its male or female because of newly born

Based on the field observation, it can be concluded that the number of the deer whose born from two types of deer are not as many as predicted, mortality also happened in the small number. A lower natality is because the range of pregnancy for deer is different from other mammals, pregnancy period is really long. According to Ariantiningsih (2000) research, time interval from sambar deer to give a first birth until the next birth is within one year and two months, with pregnancy period between 250 – 285 days. In other side, Semiadi and Nugraha (2004) also said, time interval from chital deer to pregnant is between 231 – 238 days. It means, most of the female deers only give a birth once a year with one individual in average.

The number of deer in captive deer PT. Pusri Palembang is actually not balance in the terms of sex ratio. Table 2 shows the male adult of sambar deer are more than the female adult, but for chital deer, male adult is lower than female adult. This can affect the natality. It is supported by the statement from Semiadi and Nugraha (2004) which states that a sex ratio in a group of tropical deer should be consist of two males compared with12-20 females. Sex ratio calculation is really important because of the deer reproductive cycleand gonad mature period are keep changing. The calculation of sex ratioof a tropical deer had used as a basis to obtain a sufficiently high pregnancy rate. The optimization in terms of deer population will be obtained if a natalityhadbalanced between male and female deer.

6. Captivity Condition

Based on the observations that has been done, the grasses which planted in the catchment area grows beautifully in the middle of captivity. However, this condition is very different from the area around the fence near the trees where that spaceis often used by the deer as a resting place from the heat and that space is often used by visitors to give a food for the deer, although its already mentions on the board that visitors do not allowed to give their food for the deer. The grass in this area is no longer exists and the soil becomes muddy.

Figure4. Muddy area which is often used by the deers

The images above may indicate that the grass condition in this area was damaged, and the soil conditions are too muddy. This can cause the deer whom stand in this area to become dirty, a lot of flies will alight the deer's feet and it will bother their comfort itself as well as the visitors. Such conditions can cause health damage for deer, especially skin disease. This is also in accordance with statements from Semiadi and Nugraha (2004) which states that the diseases that can affect deer during the rainy season and muddy conditions when the deer has to lie down or stay on the muddy ground will lead them to have an inflammation of the lungs (pneumonia) (Hasnawati *et al*. 2006). In addition, the legs, which submerged in muddy areas for too long, will cause the nail to be mushy and sooner it will be rotted so the deer will get sick easier.

The captive deer of PT. Pusri Palembang is not completely neglected. Compared to the damaged area, there are a lot of area which is in very good condition and grows beautifully. The area without the damages is on the inside of the captivity where the deer's often gather in groups either to break from their activity (Dewi and Wulandari, 2011) or to joke around. Resting behavior shown by staying next to each other for a period time. It is also supported by Semiadi *et al*. (2008) research, showed that resting behavior on deer usually between 8-11 am and 1-3 pm besides their eating behavior in meal time. According to the field observation, it can be concluded that captive deer PT. Pusri Palembang is quite good in supporting the life of the deer.

Figure 5.(a) Resting behavior

(b) Captivity area with good condition

CONCLUSION

Based on the research that has been done, it can be concluded that:

1. the result about habitat condition such as shelter, water needed, and deer population that has been done showed that the captive deer PT. Pusri Palembang is good enough to manage ex-situ conservation method.
2. palatability level of forage in the captivity is higher and preferable than the additional food (tubers).
3. Habitat condition in captive deer PT. Pusri Palembang as a basis of captive management is quite good, furthermore, the optimization steps as mentioned in the results need to be done to support the deer's living.

ACKNOWLEDGEMENTS

REFERENCES

Adrianton. 2010. Pertumbuhan Dan Nilai Gizi Tanaman Rumput Gajah Pada Berbagai Interval Pemotongan. *Jurnal Agroland*, 17(3): 192-197.

Afzalani., Muthalib, R.A., dan Musnandar, E. 2008. Preferensi Pakan, TingkahLaku Makan dan Kebutuhan Nutrien Rusa Sambar (*Cervus unicolor*) dalam Usaha Penangkaran di Provinsi Jambi. *Jurnal Media Peternakan,* 31(2): 114-121.

Ariantiningsih, F. 2000. *Sistem Perburuan dan Sikap Masyarakat Terhadap Usaha-usaha Konservasi Rusa di Pulau Rumberpon Kecamatan Ransiki Kabupaten Manokwari*. Program Studi Produksi Ternak, Jurusan Budidaya Pertanian: Fakultas Pertanian Universitas Cendrawasih, Manokwari.

Bismark, M., Garsetiasih, R., Iskandar, S., Kayat., Mukhtar. A.S., Sawitri, R., Setio, P., Subiandono, E., dan Takandjandji, M. 2011. *Sintesis Hasil-hasil Litbang:*

Pengembangan Penangkaran Rusa Timor. Penerbit Badan Penelitian dan Pengembangan Kehutanan: Jakarta.

Dewi, B.S dan Wulandari, E. 2011. Studi Perilaku Harian Rusa Sambar (*Cervus unicolor*) Di Taman Wisata Alam Bumi Kedaton. *Jurnal Sains MIPA*, 17(2): 75-82.

Fitriyanty, H., Masyud, B., dan Kartono, A.P. 2014. Respon Rusa Timor Terhadap Pemberian Pakan Alternatif Di Penangkaran. *Media Konservasi,* 19(2): 105-112.

Garsetiasih, R., danTakandjandji, M. 2006. Model Penelitian Penangkaran Rusa. *Prosiding Expose Hasil-hasil Penelitian: Konservasi dan Rehabilitasi Sumberdaya Hutan.* Padang.

Hasnawati., Alikodra, H.S., dan Mustari, A.H. 2006. Analisis Populasi dan Habitat Sebagai Dasar Pengelolaan Rusa Totol (*Axis axis*) di Taman Monas Jakarta. *Media Konservasi,* 9(2): 46-51.

Kartono, A.P., Santosa, Y., Darusman, D., dan Thohari, A.M. 2008. Penentuan Kuota Buru dan Introduksi Populasi Rusa Sambar Untuk Menjamin Perburuan Lestari. *Media Konservasi,* 13(2): 53-58.

Kushartono, B., dan Iriani, N. 2004. Inventarisasi Keanekaragaman PakanHijauan Guna Mendukung Sumber Pakan Ruminansia. *Prosiding Temu Teknis Nasional Tenaga Fungsional Pertanian.* Balai Penelitian Ternak, Bogor, 66-71.

Santoso, S., Lestari, S., dan Samiyarsih, S. 2012. Inventarisasi Tanaman Peneduh Jalan Penjerap Timbal di Purwokerto. Prosiding Seminar Nasional "Pengembangan Sumber Daya Pedesaan dan Kearifan Lokal Berkelanjutan II". *ISBN: 978-979-9204-79-0*

Semiadi, G., Adhi, I. G. M. J. danTrasodiharto, A. 2004. Pola Kelahiran Rusa Sambar (*Cervus unicolor*) di Penangkaran Kalimantan Timur. *JurnalBiodiversitas,* 6(1): 59-62.

Semiadi, G dan Nugraha, R.T.P. 2004. *Panduan Pemeliharaan Rusa Tropis*. Pusat Penelitian Biologi LIPI: Bogor.

Sita, V., dan Aunurohim. 2013. Tingkah Laku Makan Rusa Sambar (*Cervus unicolor*) dalam Konservasi Ex-situ di Kebun Binatang Surabaya. *Jurnal Sains dan Seni Pomits,* 2(1): 171-176.

Stevanus, C.T dan Sahuri. 2014. Potensi Peningkatan Penyerapan Karbon Di Perkebunan Karet Sembawa, Sumatra Selatan. *Widya riset*, 17(3): 363-372.

Thohari, A., Masyud, B., dan Takandjanji, M. 2011. Teknis Penangkaran Rusa Timor (*Cervus timorensis*) untuk Stok Perburuan. *Seminar Sehari "Prospek Penangkaran Rusa Timor (Cervustim orensis) sebagai Stok Perburuan"*. Fakultas Kehutanan IPB, IPB International Convention Center, 1-15.

Timmins, R., Kawanishi, K., Giman, B, Lynam, A., Chan, B., Steinmetz, R., Sagar Baral, H. & Samba Kumar, N. 2015. *Rusa unicolor*. Retrieved from The IUCN Red List of Threatened Species website: http://www.iucnredlist.org/details/41790/0. Access on February 4th, 2017.

Sinta Indonesia

HOME   ABOUT   AUTHORS   SUBJECTS   AFFILIATIONS   SOURCES   REGISTRATION   FAQ   AUTHOR LOGIN   Q

Journal Profile

BIOVALENTIA: Biological Research Journal
eISSN : 2477-1392 | pISSN :
Agriculture
Universitas Sriwijaya

sinta

S3
Sinta Score

GARUDA
Indexed by GARUDA

2
H-Index

2
H5-Index

5
Citations

5
5 Year Citations

| 2017 | 2018 | 2019 |

sinta Accreditations

Citation Statistics

2016   2017   2018

Search...   Q

|◀ ◀ **1** 2 3 ▶ ▶|

Page 1 of 3 / Total Records : 26

Publications	Citation
Application of Point–Centered Quarter Method for Measurement the Beach Crab (Ocypode spp) Density H Marisa BIOVALENTIA: Biological Research Journal 1 (1)	2
Application of Point–Centered Quarter Method for Measurement The Beach Crab (Ocypode spp) Density H Marisa BIOVALENTIA: Biological Research Journal 1 (1)	1
THE DIVERSITY OF AMPHIBIANS IN CAMPUS AREA OF SRIWIJAYA UNIVERSITY INDRALAYA, OGAN ILIR, SOUTH SUMATERA	1

Penerbit:
Biology Department, Faculty of Mathematics and Natural Sciences, Sriwijaya University

Website | Editor URL

Address:
Biology Department, Faculty of Mathematics

Habitat Optimalization of Captive Deer PT. Pusri Palembang

By Arum Setiawan

Habitat Optimalization of Captive Deer PT. Pusri Palembang

Nadya Rahmania[1]*, Indra Yustian[2], Arum Setiawan[3]

[1] Student of Environmental Management Postgraduate Program Sriwijaya University

[2,3] Lecturer of Biology Department FMIPA Sriwijaya University

*correspondent author: Telp. 08980155668 , (0711) 5615516

email: nadyarahmania@student.pps.unsri.ac.id

ABSTRAK

Rusa adalah salah satu spesies yang mengalami penurunan populasi karena menjadi target perburuan liar. Demi mencegah penurunan populasinya, dilakukan upaya pelestarian dengan cara konservasi baik konservasi in-situ maupun ex-situ. Penangkaran rusa PT. Pusri Palembang merupakan satu-satunya penangkaran rusa yang berada di area perkotaan Palembang yang menjalankan upaya konservasi. Tujuan penelitian ini adalah untuk menganalisis komponen habitat penangkaran rusa yang telah ada meliputi pakan sehari-hari, kebutuhan air, dan tempat naungan. Selanjutnya untuk menentukan tingkat palatabilitas pakan dalam penangkaran dan untuk menganalisis kondisi habitat sebagai dasar pengelolaan penangkaran rusa yang lebih optimal. Metode wawancara, studi pustaka dan pengamatan lapangan digunakan untuk memperoleh data mengenai populasi dan kondisi habitat di penangkaran rusa PT. Pusri Palembang. Berdasarkan hasil pengamatan, diketahui bahwa tempat naungan berupa pohon, kebutuhan air yang tersedia dengan adanya kolam air, pakan dan kondisi area penangkaran yang dijaga oleh penangkar dapat memenuhi kebutuhan hidup rusa. Dapat disimpulkan bahwa kondisi habitat di penangkaran rusa PT. Pusri Palembang masih cukup baik, dan area seluas 1,5 hektar sebagai habitat rusa masih dapat menampung jumlah total 44 rusa (22 rusa sambar dan 22 rusa totol) pada tahun 2015.

Kata kunci: rusa sambar, rusa totol, naungan, kebutuhan air, palatabilitas pakan

ABSTRACT

Deer are one of the species that going through a reduction of population because its being used as the target of illegal hunting. To prevent the reduction in population, the efforts to save them with conservation method both in-situ or ex-situ has been done. Captive deer in PT. Pusri Palembang is the only captive deer, which located in urban areas of Palembang and carrying out an ex-situ conservation effort. This research aimed to analyze the habitat condition such as daily feed, water needed, and shelter, to know about the level of palatability and also to analyze the habitat condition as a basis of captive deer management towards an optimization. The interview method, literature study and field observation are used to get the data about population and habitat condition in captive deer PT. Pusri Palembang. The results of the research showed that the shelter, water consumption has fulfilled by the water pool, foods and captivity condition that was taken care by the captive keepers. It can be concluded that overall the habitat condition in the captive deer PT. Pusri Palembang is quite good, and 1,5 hectare areas still be able to maintain the total of 44 deers (22 sambar deers and 22 chital deers) in 2015.

Key words: sambar deer, chital deer, shelter, water needed, palatability

INTRODUCTION

Captive deer of PT. Pusri Palembang was located at Mayor Zen street and was built in 2008 with the agreement from Balai Konservasi Sumberdaya Alam (BKSDA) Prov. Sumsel No. SK.66/IV-K.8/2008 Tgl. 9 Juni 2008. Captve deer PT. Pusri Palembang is part of ex-situ conservation effort to protect deer population (Bismark *et al.*, 2011) and it also the only one captivity in urban areas of Palembang which has an 1,5 hectare areas. At first, the deer were imported from the captivity in Cisarua, Bogor, West Java in 2007, at that time, its only 3 paired of chital deer and six species of sambar deer (4 males and 2 females) which entrusted by West Java Police. Based on the captive keeper's data, until 2015, the population has reached 22 species of sambar deer (*Rusa unicolor*) and also 22 species of chital deer (*Axis axis*).

In Indonesia, deer are one of the species that being protected by law because of its limited status (Garsetiasih and Takandjandji, 2006).(IUCN Red List, 2015) said deer are one of the species that going through the reduction of population lately since its used as a target of illegal hunting (Dewi and Wulandari, 2011) and being used as protein source (Semiadi *et al.*, 2008). Thohari *et al.*, (2011) said that captivity is an effort to increase the population through breeding and rearing of wild animal and plant species while maintaining the purity of its species (PP No. 8 Tahun 1999 tentang Pemanfaatan Jenis dan Satwa Liar).

According to Kamus Besar Bahasa Indonesia, optimization or optimalization comes from the word "optimal", it means best, the highest and the most profitable. Therefore, optimization is the effort to find the highest value which has been provided in order to get results as expected. Optimization steps that can be done is habitat analysis, such as shelter (Bismark *et al.*, 2011), water needed, food and palatability (Sita and Aunurohim, 2013) also the captivity condition. The aim of this research is to analyze the habitat components such as daily food, water needed, and shelter. Also to determine about the palatability level and analyze the habitat condition as a basis of captive deer management towards an optimization.

MATERIALS AND METHODS

This research was conducted in January 2015 in captive deer PT Pusri Palembang.

Tools and Object
The tools used in this research are the stationary, notebook, and camera. The object of this research is captive deer PT. Pusri Palembang.

Data Collection Technique
The primer data were obtained through interview method with the captive keeper and also field observation. Primer data included habitat condition, such as daily meal, palatability, water needed and shelter. Secondary data,including deer population and soil condition in the captivity were obtained through field observation, literature studied, keeper's data and also the latest research related to the topic. Deer population data will be presented through a table.

Data Analysis
Data analysis method used in this research is descriptive analysis.

RESULTS AND DISCUSSION

1. Shelter

According to field observation, the captivity has a shelter consist of trees along its side. The most common types of the trees are Ketapang (*Terminalia catappa*), Mahoni (*Swietenia mahagoni*) and Trembesi (*Salmania saman*) with 18 as totals. This also supported by Santoso *et al*. (2012) research, stated that these types of trees are shade plant and often uses as environment shelter and air pollution filter because its ability to absorb the carbon (Stevanus and Sahuri, 2014). Although the shelter may not be as thick as its natural habitat, it can cover the deers from extreme weather. It is supported by Hasnawati *et al*. (2006) statement, the shelter thickness will reduce the availability of grass because the sun will be blocked by the trees.

Besides trees, the captive deer also have rumput gajah (*Pennisetum purpureum*). Rumput gajah is known as a superior forage (Adrianton, 2010) which often used and consumed in the cattle also in captivity. It is also supported by Fitriyanty *et al*. (2014) research, stated that rumput gajah tend to be preferred because it becomes their habit to consume it everyday apart from alternative food given from captivity.

2. Water Needed

Water is a very important component and its needed by all living. The water needs in captive deer PT. Pusri Palembang had fulfilled by ± 10 meters of pool in the middle of captivity. The pool consists the sewer and water taps and its used to replace the water if it gets dirty. This also in accordance with the opinion of Garsetiasih and Takandjanji(2006), which states that a captive should have a tub or pool and equipped with a generator.

The waterpool in the captivity is quite enough to fulfill the water consumption of deers. But the waterpool sometimes used by the deers to wallow than using it to drink. To optimize the waterpool as a water source, it is better if the pool is not use as a wallow place, so the deer condition will always good. The other pool need to be built so it can be used as wallow place rather than drinking it directly from the waterpool. This is supported by the opinion of Semiadi and Nugraha (2004) which states a waterpool that serves as drinking water, upper place can be covered with wire so the deer will nottry to get into the pool but only its snout can get in to drink.

Figure 1. Water pool in captive deer PT. Pusri Palembang

3. Foods

According to field observation, the foods given in captive deer PT. Pusri Palembang divided into two types, such as forage and additional food. The forage is from rumputpaitan(*Paspalumconjugatum*) and bayam-bayaman (*Asystasia*sp). Both of these forages are given as much as 50 kg, and given two times a day, at 08.00 am and 03.00 pm.Furthermore, tubers are an additional food which given as much as ± 1.5 kg twice a day. It is required to cutthe tubers into small size to make it easier for the deer to consume.Forages were given in captivity is not enough for 44 deer. In accordance with related research of (Sutrisno, 1996 in Kartono*et al.* 2008) which states that a sambar deer needs as much as 5.823 kg/each/day of fresh foods or 11.64 kg/2species/day. In accordance with this research, captive deer PT. Pusri with a total of 100 kg of foods for each day (twice per day) are not enough for 44 deer. More than 200 kg per day should be added to fulfill the foods for all of the deer.

Figure 2. *Asystasia* sp (A), *Paspalum conjugatum* (B)

Besides the forages and tubers as a daily food, captive deer PT. Pusri Palembang also gives the vitamin in capsule shape and its given together with banana to make it easier for deer to consume. This result is in accordance with Sita and Aunurohim (2013) research which states, banana was chosen as a medium to deliver the vitamin because its sweeter than other fruit. This taste is growing attractiveness and stimulate the animals to consume the vitamin, so the consumption of bananas tend to be high, as well as other species of ruminants are also preferred sweeter taste than salty or bitter taste, but it can because of low crude fiber (0,6%). Semiadi and Nugraha (2004) stated that deers doesn't really need vitamin for their health so a vitamin was given only once a month.

Feeding method was done by "cafetaria method". Semiadi and Nugraha (2004) states, this method was done by providing the food and let the deer choose which food they want to eat. Its also applied in captive deer PT. Pusri Palembang. Feeding method was done by throwing the food into the captivity (catchment area) through the special place. This special place is like a small part of the land in the deer area that has been fenced all around it. Size of this place is 5x5 m approximately. Sita and Aunurohim (2013) stated that the advantage of this method is those deer can feed themselves and choose what they want to eat also which ones they do not want to eat, while the disadvantage of this method is the foods they do not want to eat will remains a lot.

Figure 3. A place for giving the food to the deers

4. Palatability

Palatability is a degree or preference level of foods consumed in the captivity, which can be seen by how much deers consume it without left over (Semiadi and Nugraha, 2004). In the field observation, it can be seen, the deer more prefer with forages than other additional food like tubers. It is supported by the research that has been done by Kushartono and Iriani (2004) which states the forages including paitan grass (*Paspalum conjugatum*) is one of the grass field that has a protein in it between 60-85%.

According to Semiadi and Nugraha (2004), the indicator of palatability is, high or low the crude fiber is contained in its food. The lower crude fibers contained in the food, the higher palatability will it be. The forages that are given in the captivity is the fresh forages taken by the keepers itself from his private garden. Crude fiber is contained in the food can be seen in this following table:

Table 1. Crude fiber content in the greeneries given in the captive deer PT. Pusri Palembang

Name	Crude Fiber (%)
Paspalum conjugatum	40,94
Asystasia sp	19,68

*source: Laboratory of Chemical and Microbiology, Faculty of Agriculture, Sriwijaya University, Indralaya (2015).

Based on the table above, it can be seen that two types of the forages have no crude fiber more than 50 %, which means that both types of the forages given in captive deer PT. Pusri Palembang has a high palatability. Church (1998) in Afzalani *et al.* (2008) states if the crude fiber content in the food is high, it will increase the pressure in the rumen and it will decrease the food consumption. Foods given in the captive deer PT. Pusri Palembang has fulfilled the nutrition contained for all of the deers. However, it still not fulfilled the total weight of the feeds that should be given.

To reach the optimization in the terms of food, the foods should be given twice more than the deer's own weight because the total of the deer also twice time more than it should be in the 1,5 hectare captive area. It can be expected that the keepers should add more forages from leguminous type because almost all of the part of leguminous (Dewi and Wulandari, 2011) including flower, leave, and fruit can be used. Furthermore,

according to Semiadi and Nugraha (2004) the other foods such as rice bran or corn bran can be given to fulfill the lack of the foods because it contains high carbohydrates.

5. Individual Deer

Based on the field observation and interview with the keeper, it can be obtained, in late 2012 and early 2013, 3 of sambar deer was born. In 2014, 2 of sambar deer was born and in early 2015, 2 of chital deer was born. So in 2015, a total deer is 44 including 22 sambar deer and 22 chital deer. The amount of the deer keep changing, cause its continue to grow and deer keeps giving a birth.

Deer in the captivity have reached its maximum level. Optimization steps that should be done to minimize deer population is by reducing the number of deer by moving or transfer it to the other captivity, because it can cause an imbalance between deer as individual with their habitat. This is also supported by a statement from Garsetiasih and Takandjanji (2006) which states that the breeding with ranch system (as implemented in captivity PT. Pusri Palembang) ideally just to accommodate 10 individual deer in 1 ha area, while captive deer PT. Pusri Palembang, which has 1.5 ha has been accommodating 44 deer. Therefore, the captive deer management from PT. Pusri Palembang may consider to reduce the number of deer in the future.

Table 2. Female and Male Ratio based on its Age

Type	Age range	Male	Female
Sambar deer	Adult	10	6
	Juvenile	2	4
	Child	-	-
Chital deer	Adult	7	11
	Juvenil	1	1
	Child		

*2 individu of chital deer still not identified whether its male or female because of newly born

Based on the field observation, it can be concluded that the number of the deer whose born from two types of deer are not as many as predicted, mortality also happened in the small number. A lower natality is because the range of pregnancy for deer is different from other mammals, pregnancy period is really long. According to Ariantiningsih (2000) research, time interval from sambar deer to give a first birth until the next birth is within one year and two months, with pregnancy period between 250 – 285 days. In other side, Semiadi and Nugraha (2004) also said, time interval from chital deer to pregnant is between 231 – 238 days. It means, most of the female deers only give a birth once a year with one individual in average.

The number of deer in captive deer PT. Pusri Palembang is actually not balance in the terms of sex ratio. Table 2 shows the male adult of sambar deer are more than the female adult, but for chital deer, male adult is lower than female adult. This can affect the natality. It is supported by the statement from Semiadi and Nugraha (2004) which states that a sex ratio in a group of tropical deer should be consist of two males compared with12-20 females. Sex ratio calculation is really important because of the deer reproductive cycleand gonad mature period are keep changing. The calculation of sex ratioof a tropical deer had used as a basis to obtain a sufficiently high pregnancy rate. The optimization in terms of deer population will be obtained if a natalityhadbalanced between male and female deer.

6. Captivity Condition

Based on the observations that has been done, the grasses which planted in the catchment area grows beautifully in the middle of captivity. However, this condition is very different from the area around the fence near the trees where that spaceis often used by the deer as a resting place from the heat and that space is often used by visitors to give a food for the deer, although its already mentions on the board that visitors do not allowed to give their food for the deer. The grass in this area is no longer exists and the soil becomes muddy.

Figure4. Muddy area which is often used by the deers

The images above may indicate that the grass condition in this area was damaged, and the soil conditions are too muddy. This can cause the deer whom stand in this area to become dirty, a lot of flies will alight the deer's feet and it will bother their comfort itself as well as the visitors. Such conditions can cause health damage for deer, especially skin disease. This is also in accordance with statements from Semiadi and Nugraha (2004) which states that the diseases that can affect deer during the rainy season and muddy conditions when the deer has to lie down or stay on the muddy ground will lead them to have an inflammation of the lungs (pneumonia) (Hasnawati *et al*. 2006). In addition, the legs, which submerged in muddy areas for too long, will cause the nail to be mushy and sooner it will be rotted so the deer will get sick easier.

The captive deer of PT. Pusri Palembang is not completely neglected. Compared to the damaged area, there are a lot of area which is in very good condition and grows beautifully. The area without the damages is on the inside of the captivity where the deer's often gather in groups either to break from their activity (Dewi and Wulandari, 2011) or to joke around. Resting behavior shown by staying next to each other for a period time. It is also supported by Semiadi *et al*. (2008) research, showed that resting behavior on deer usually between 8-11 am and 1-3 pm besides their eating behavior in meal time. According to the field observation, it can be concluded that captive deer PT. Pusri Palembang is quite good in supporting the life of the deer.

Figure 5.(a) Resting behavior
(b) Captivity area with good condition

CONCLUSION

Based on the research that has been done, it can be concluded that:
1. the result about habitat condition such as shelter, water needed, and deer population that has been done showed that the captive deer PT. Pusri Palembang is good enough to manage ex-situ conservation method.
2. palatability level of forage in the captivity is higher and preferable than the additional food (tubers).
3. Habitat condition in captive deer PT. Pusri Palembang as a basis of captive management is quite good, furthermore, the optimization steps as mentioned in the results need to be done to support the deer's living.

ACKNOWLEDGEMENTS

REFERENCES

Adrianton. 2010. Pertumbuhan Dan Nilai Gizi Tanaman Rumput Gajah Pada Berbagai Interval Pemotongan. *Jurnal Agroland*, 17(3): 192-197.

Afzalani., Muthalib, R.A., dan Musnandar, E. 2008. Preferensi Pakan, TingkahLaku Makan dan Kebutuhan Nutrien Rusa Sambar (*Cervus unicolor*) dalam Usaha Penangkaran di Provinsi Jambi. *Jurnal Media Peternakan*, 31(2): 114-121.

Ariantiningsih, F. 2000. *Sistem Perburuan dan Sikap Masyarakat Terhadap Usaha-usaha Konservasi Rusa di Pulau Rumberpon Kecamatan Ransiki Kabupaten Manokwari*. Program Studi Produksi Ternak, Jurusan Budidaya Pertanian: Fakultas Pertanian Universitas Cendrawasih, Manokwari.

Bismark, M., Garsetiasih, R., Iskandar, S., Kayat., Mukhtar. A.S., Sawitri, R., Setio, P., Subiandono, E., dan Takandjandji, M. 2011. *Sintesis Hasil-hasil Litbang:*

Pengembangan Penangkaran Rusa Timor. Penerbit Badan Penelitian dan Pengembangan Kehutanan: Jakarta.

Dewi, B.S dan Wulandari, E. 2011. Studi Perilaku Harian Rusa Sambar (*Cervus unicolor*) Di Taman Wisata Alam Bumi Kedaton. *Jurnal Sains MIPA*, 17(2): 75-82.

Fitriyanty, H., Masyud, B., dan Kartono, A.P. 2014. Respon Rusa Timor Terhadap Pemberian Pakan Alternatif Di Penangkaran. *Media Konservasi*, 19(2): 105-112.

Garsetiasih, R., danTakandjandji, M. 2006. Model Penelitian Penangkaran Rusa. *Prosiding Expose Hasil-hasil Penelitian: Konservasi dan Rehabiliasi Sumberdaya Hutan.* Padang.

Hasnawati., Alikodra, H.S., dan Mustari, A.H. 2006. Analisis Populasi dan Habitat Sebagai Dasar Pengelolaan Rusa Totol (*Axis axis*) di Taman Monas Jakarta. *Media Konservasi*, 9(2): 46-51.

Kartono, A.P., Santosa, Y., Darusman, D., dan Thohari, A.M. 2008. Penentuan Kuota Buru dan Introduksi Populasi Rusa Sambar Untuk Menjamin Perburuan Lestari. *Media Konservasi*, 13(2): 53-58.

Kushartono, B., dan Iriani, N. 2004. Inventarisasi Keanekaragaman PakanHijauan Guna Mendukung Sumber Pakan Ruminansia. *Prosiding Temu Teknis Nasional Tenaga Fungsional Pertanian.* Balai Penelitian Ternak, Bogor, 66-71.

Santoso, S., Lestari, S., dan Samiyarsih, S. 2012. Inventarisasi Tanaman Peneduh Jalan Penjerap Timbal di Purwokerto. Prosiding Seminar Nasional "Pengembangan Sumber Daya Pedesaan dan Kearifan Lokal Berkelanjutan II". *ISBN: 978-979-9204-79-0*

Semiadi, G., Adhi, I. G. M. J. danTrasodiharto, A. 2004. Pola Kelahiran Rusa Sambar (*Cervus unicolor*) di Penangkaran Kalimantan Timur. *JurnalBiodiversitas*, 6(1): 59-62.

Semiadi, G dan Nugraha, R.T.P. 2004. *Panduan Pemeliharaan Rusa Tropis*. Pusat Penelitian Biologi LIPI: Bogor.

Sita, V., dan Aunurohim. 2013. Tingkah Laku Makan Rusa Sambar (*Cervus unicolor*) dalam Konservasi Ex-situ di Kebun Binatang Surabaya. *Jurnal Sains dan Seni Pomits*, 2(1): 171-176.

Stevanus, C.T dan Sahuri. 2014. Potensi Peningkatan Penyerapan Karbon Di Perkebunan Karet Sembawa, Sumatra Selatan. *Widya riset*, 17(3): 363-372.

Thohari, A., Masyud, B., dan Takandjanji, M. 2011. Teknis Penangkaran Rusa Timor (*Cervus timorensis*) untuk Stok Perburuan. *Seminar Sehari "Prospek Penangkaran Rusa Timor (Cervustim orensis) sebagai Stok Perburuan"*. Fakultas Kehutanan IPB, IPB International Convention Center, 1-15.

Timmins, R., Kawanishi, K., Giman, B, Lynam, A., Chan, B., Steinmetz, R., Sagar Baral, H. & Samba Kumar, N. 2015. *Rusa unicolor*. Retrieved from The IUCN Red List of Threatened Species website: http://www.iucnredlist.org/details/41790/0. Access on February 4th, 2017.

Habitat Optimalization of Captive Deer PT. Pusri Palembang

6%

SIMILARITY INDEX

MATCH ALL SOURCES (ONLY SELECTED SOURCE PRINTED)

★doaj.org
Internet

6%

FORMAT PENILAIAN (VALIDASI & PEER REVIEW)
LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
KARYA ILMIAH : JURNAL ILMIAH

Jurnal Artikel Ilmiah   : Habitat Optimalization of Captive Deer PT. Pusri Palembang
Penulis Artikel Ilmiah   : Arum Setiawan
Identitas Jurnal Artikel Ilmiah   : a. Nama Jurnal   : BIOVALENTIA: Biological Research Journal
                                          b. Nomor/Volume/Hal :1/3/17-25
                                          c. Edisi (bulan/tahun)   : Mei/2017
                                          d. Penerbit   : Jurusan Biologi FMIPA Universitas Sriwijaya
                                          e. Jumlah Halaman   9
Kategori Publikasi Jurnal Ilmiah   : ☐ Jurnal Ilmiah Internasional Bereputasi
(beri √ pada kategori yang tepat)   ☐ Jurnal Ilmiah Internasional
                                             ☐ Jurnal Ilmiah NasionalTerakreditasi Sinta 1, Sinta 2
                                             ☑ Jurnal Ilmiah Nasional Terakreditasi Sinta 3, **Sinta 4**
                                             ☐ Jurnal Ilmiah Nasional Tidak Terakreditasi

I. Hasil Penilaian Validasi :

No.	ASPEK	URAIAN/KOMENTAR PENILAIAN
1.	Indikasi Plagiasi	6 %
2.	Linearitas	Isi paper sudah linier dengan bidang keilmuan Biologi Konservasi

II. Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Maksimal Jurnal Ilmiah (isikan di kolom yang sesuai)					Nilai Akhir Yang Diperoleh
	Internasional Bereputasi (Maks 40)	Internasional (Maks 20)	Nasional Terakreditasi S1, S2 Maks 25	Nasional Terakreditasi S3, S4 Maks 20	Nasional tidak Terakreditasi (maks 10)	
Kelengkapan dan Kesesuaian unsur isi jurnal (10%)				2		2
Ruang lingkup dan kedalaman pembahasan (30%)				6		4
Kecukupan dan Kemutahiran data/informasi dan metodologi (30%)				6		6
Kelengkapan unsur dan kualitas penerbit (30%)				6		6
Total = (100%)				20		18
Kontribusi Pengusul (Penulis Pertama /Anggota Utama)	Anggota Utama = (0,4x18)/2 = **3,6**					**3,6**
KOMENTAR/ULASAN *PEER REVIEW*						
Kelengkapan dan Kesesuaian Unsur:	Paper terkait inventarisasi dan monitoring diversitas fauna di Sumatera Selatan. Isi paper sudah memenuhi kaidah-kaidah karya ilmiah, dan sudah sesuai dengan bidang biologi konservasi.					
Ruang Lingkup dan Kedalaman Pembahasan:	Hasil penelitian dibahas cukup komprehensif dengan penyampaian pembanding dari temuan-temuan penelitian lainnya dan teori terkait. Referensi yang diacu dalam pembahasan sudah cukup update untuk bidang kajian ini.					
Kecukupan & Kemutakhiran Data & Metodologi:	Data-data hasil penelitian cukup baik dan didukung penjelasan dan gambar yang ditampilkan cukup menarik. Data didapatkan dengan menggunakan metode yang standard.					
Kelengkapan Unsur & Kualitas Penerbit:	Penerbit Jurusan Biologi FMIPA Universitas Sriwijaya berkualitas baik, dan jurnal terindeks di SINTA 4.					

Surabaya, 13 Mei 2020
Penilai 1

Prof. Hery Purnobasuki, M.Si., Ph.D.
NIP 196705071991021001
Unit Kerja   : Jurusan Biologi FST Unair
Bidang Ilmu   : Biologi
Jabatan/Pangkat : Guru Besar/ Pembina Utama Madya

FORMAT PENILAIAN (VALIDASI & PEER REVIEW)
LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
KARYA ILMIAH : JURNAL ILMIAH

Jurnal Artikel Ilmiah   : Habitat Optimalization of Captive Deer PT. Pusri Palembang
Penulis Artikel Ilmiah   : Arum Setiawan
Identitas Jurnal Artikel Ilmiah   : a. Nama Jurnal   : BIOVALENTIA: Biological Research Journal
                                       b. Nomor/Volume/Hal : 1/3/17-25
                                       c. Edisi (bulan/tahun)   : Mei/2017
                                       d. Penerbit   : Jurusan Biologi FMIPA Universitas Sriwijaya
                                       e. Jumlah Halaman   : 9

Kategori Publikasi Jurnal Ilmiah   :
(beri √ pada kategori yang tepat)

- ☐ Jurnal Ilmiah Internasional Bereputasi
- ☐ Jurnal Ilmiah Internasional
- ☐ Jurnal Ilmiah Nasional Terakreditasi Sinta 1, Sinta 2
- ☑ Jurnal Ilmiah Nasional Terakreditasi Sinta 3, **Sinta 4**
- ☐ Jurnal Ilmiah Nasional Tidak Terakreditasi

I. Hasil Penilaian Validasi :

No.	ASPEK	URAIAN/KOMENTAR PENILAIAN
1.	Indikasi Plagiasi	6 %
2.	Linearitas	v

II. Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Maksimal Jurnal Ilmiah (isikan di kolom yang sesuai)					Nilai Akhir Yang Diperoleh
	Internasional Bereputasi (Maks 40)	Internasional (Maks 20)	Nasional Terakreditasi S1, S2 Maks 25	Nasional Terakreditasi S3, S4 Maks 20	Nasional tidak Terakreditasi (maks 10)	
Kelengkapan dan Kesesuaian unsur isi jurnal (10%)				2		2
Ruang lingkup dan kedalaman pembahasan (30%)				6		5
Kecukupan dan Kemutahiran data/informasi dan metodologi (30%)				6		5
Kelengkapan unsur dan kualitas penerbit (30%)				6		6
Total = (100%)				20		18
Kontribusi Pengusul (Penulis Pertama /Anggota Utama)	BIOVALENTIA: Biological Research Journal. Vol.: 3(2): 43-47 Edisi November/2017. Penulis kedua dari lima. Nilai maksimal 90%. Nilai pengusul: (0,4 x 0,9x 20)/2 = 3,6					3,6

KOMENTAR/ULASAN *PEER REVIEW*	
• Kelengkapan dan Kesesuaian Unsur:	Format lengkap sesuai dengan aturan.
• Ruang Lingkup dan Kedalaman Pembahasan:	Ruang lingkup masih sesuai bidangnya. Pembahasan cukup.
• Kecukupan & Kemutakhiran Data & Metodologi:	Data cukup dan metode umum dilakukan.
• Kelengkapan Unsur & Kualitas Penerbit:	Penerbit Jurusan Biologi FMIPA Universitas Sriwijaya cukup baik karena kelengkapan unsur.

Yogyakarta,   12 Juli   2020
Penilai 2,

tanda tangan ....
Prof. Dr. Suwarno Hadisusanto
NIP 195411161983031002
Unit Kerja   : Fakultas Biologi UGM
Bidang Ilmu   : Biologi
Jabatan/Pangkat : Guru Besar/ Pembina Utama Madya