

**SUMATRAN RHINO CONSERVATION CENTRE
DEPARTMENT OF WILDLIFE AND NATIONAL PARKS
SUNGAI DUSUN, SELANGOR
MALAYSIA**

MONTHLY REPORT

JANUARY 2001

BY

Dr. AIDI MOHAMAD

&

STEVE ROMO

INTRODUCTION

Out of five females, only two females; namely Rima and Seputeh showed a regular estrus cycle since last month and they were bred successfully this month. Another female; Mas Merah showed an irregular cycle. However, the other two females: Minah and Panjang did not show any cycle based on the low level of the plasma progesterone. Three breeding took place during the month involving two females and a male. Ara bred Seputeh and Rima successfully on predicted date of the females' estrus cycles. Rima was bred on 10/01/01 while Seputeh was bred on 26/01/01. On 29/01/01, Rima was bled and the sample was sent to UPM for pregnancy detection. Unfortunately, the blood result revealed that she is not pregnant and she was bred again on two consecutive days from 31/01/01 to 01/02/01.

As for the bleeding procedure, the program is still carried out twice weekly on all females for progesterone analysis. As for the bred females, they will be bled once a week. Other than that, the fecal sampling was still collected from all females. Once a month, the blood was also taken from all rhinos for CBC. Weighing procedure was also conducted on 16/01/01 this month.

RHINO MANAGEMENT

A) Daily Management

i) Night stall

Daily work

Adam and Umor managed the night stalls. However, Umor and Shariff arrived first at 7.00 a.m. and they cleaned the night stalls. Then, Shariff will inspect the electric fencing with Mohd Noor while Umor and Adam will continue the work in the night stall. If bleeding procedure was carried out, both rangers will help the veterinarian. When the food supply arrived, the browse and fruits were weighed and cleaned before giving to the rhinos. About 40 kg of browses and 7kg of fruits including papaya, banana and sweet potatoes were given daily. Usually, the browses consist of *Macaranga* sp., *Artocarpus* sp., *Astonia* sp. and *Ficus* sp. Apart from that, concentrate was given about 1.5kg every morning.

The rhinos

The rhinos were let out first before cleaning the night stalls. After cleaning, the browses were put in the feed trough and the rhinos were let in for their morning meal. The drinking water was changed daily and stress vet (multi-mineral powder) was mixed inside it. Daily observation was made and recorded in the workbook for each rhino. The rhinos were fed three times daily; 9.00 a.m., 12.00 noon and 3.00 p.m.

ii) Ten acres enclosure

Daily Work

Mohd Noor and Shariff inspect the electric fencing every morning. The fencing was cleaned from any foreign objects such as spider web, dried leaves or creepers to avoid short circuit. Voltmeter was used to ensure that the voltage of the fencing is about 7.0 kV.

After inspection, the rangers will give the rhinos their concentrate before feeding them with the browse. They were confined in the quarter acre first before putting their browse in the feeding trough. The amount given was about 200kg for two rhinos daily. About 100kg were given in the morning and the other half in the afternoon.

B) Breeding Program

i) Rhino Pairing

The rhinos were paired inside the quarter acre enclosure during the month since the breeding yard was under repaired. Rima and Seputeh were mixed based on their predicted estrus cycle. This was done since the blood result cannot be obtained on time.

Rima was expected to be in estrus between 10/01/01 to 15/01/01. On the 10/01/01 morning, she was paired with Ara around 9.30 a.m. Ara was observed following Rima and try to mount but Rima is not ready. She refused to be mounted and try to challenge the male. She was also vocalized a lot. Some aggression was noted and it was controlled by calling the rhino names and also using the fruits. The rhinos were separated after 20 minutes of mixing.

Around 3.45 p.m., both rhinos were mixed again. Ara mounted Rima after five minutes of mixing but no intromission. He kept following Rima and try to mount when she presents herself. About twelve mountings were observed without any intromission. Erection was only observed on two occasions. On the last mounting, intromission was assisted by Dr. Zainal and lasted for about 21 minutes.

As for Seputeh, she was expected in estrus from 25/01/01 to 29/01/01. She was mixed with Ara on the 25/01/01 around 10.45 a.m. Head butting was observed especially after Seputeh provoked the male. Fruits were used to control the aggression. However, two mountings were recorded despite of the aggression and the female is seems not ready. The rhinos were separated when they start to fight for the wallow. The pairing was about 20 minutes.

The next day, the rhinos were paired around 10.45 a.m. Aggression was observed during the first ten minutes of the procedure when the female tried to challenge the male but it was under control. However, the female allowed the male to mount her and about twelve mountings were recorded with one intromission. Unfortunately, it only lasted for about five minutes. The male cannot balance himself on the soggy ground and he slipped away. The rhinos were separated when they looked very exhausted and the procedure was stopped at 12.20 noon.

Around 3.15 p.m., both rhinos were mixed again. Head butting was observed at the beginning but the female then turn away. Ara then starts following Seputeh and mounted her after four minutes of mixing. Six mountings were recorded and the last one resulting intromission. The female was bred for about thirty minutes.

On 31/01/01, Rima was paired again with Ara based on the blood result from UPM. She was successfully bred for about twenty minutes. The next morning, around 10.50 a.m., she was mixed again with Ara and was bred successfully for about thirty two minutes.

ii) Bleeding Program

a) Blood Collection

The bleeding was still carried out twice weekly. As for the bred females, the blood was collected once a week. The blood procedure was summarized below.

b) Plasma Progesterone Profile

The latest blood result was received on 31/01/01 on all females. The results showed that Rima and Seputeh were cycles regularly compared to Mas Merah, which has an irregular cycle. As for Minah and Panjang, their progesterone level is low and did not show any cycling pattern. The graph and results was attached below.

Based on the graph, it was noted that Mas Merah should have been in estrus on 22/01/01 but this result was only received on 31/01/01. Therefore, her cycle is missed and she should be monitored closely in the future. As for Rima and Panjang, both rhinos showed a nice peak compared to the other two females; Minah and Panjang which had a low level of progesterone throughout the month.

iii) Fecal Sampling

The fecal collection is still continued for all females. They were pooled and stored in - 20°C before sending them to UPM.

B) HEALTH STATUS

Generally, all rhinos are in the good condition. The weighing procedure has been conducted 16/01/01 and the result is attached below. Minah and Panjang had recovered from the weight loss but need further monitoring. Both rhinos were still continued with the force-feeding daily. Molasses block (Nutriblock®), 100gm/d orally were still given to them as a supplement.

Beside that, blood samples were sent to Veterinary Research Institute (VRI), Ipoh on monthly basis for complete blood count (CBC). The result showed that all rhinos are in a good condition. The blood result was attached with this report.

A comment from Dr. Wahid about the ultrasound conducted on Panjang is received through e-mail recently and was attached. He informed that a follicle was observed on the left ovary sizing about 1.6 cm in diameter. A small follicle was also observed on the right ovary sizing about 0.5cm in diameter. Apart for that, a mass structure was also observed on the right uterine horn. However, the image of the ultrasound is not clear when printed on paper.

On 03/01/01, urine sample was collected from Panjang's night stall after suspecting blood in the urine (the color of the urine is reddish brown). The sample was sent to UPM for urinalysis and the result is negative for blood. The lab result was also attached in this report.

Apart form that, the histopathology result of Panjang's aborted material was also attached. Based on the report, the tissue was confirmed placenta and the epithelial layer consisting about 6 to 7 cells. The pathologist suspected that she was pregnant more than 3 weeks.

C) FEEDING

No changes were made for the feeding program. The browses and produces were supplied by the contractor, which deliver them around 9.30 a.m. daily. The feed was checked to ensure their quantity and quality upon receiving them. They were cleaned and weighed before giving to the rhinos. The rhinos were given about 40 kg of browses, 3 kg of concentrates and 7 kg of fruits daily. Jackfruit or cempedak was ordered (2-4kg) on bleeding days especially for Seputeh.

D) OTHERS

a) *Patrolling of the Wildlife Reserve*

The reserve was patrolled by the rangers to prevent any encroachment every two weeks and the result showed that no encroachment was found.

b) *Meeting with Dr. Wahid (UPM)*

A meeting was conducted with Dr. Wahid and Mr. Yap on 18/01/01 at UPM to discuss about the status report and also the blood and fecal analysis.

c) *Breeding yard and natural enclosure*

The yard is being repaired and should be ready by end of February. As for natural enclosures, a new partition has been installed between quarter acre and ten acres.

Table 1: Blood Collection from the Rhinos, January 2001

Date	Rhino ID	Area taken	Remarks
01/01/01	Minah Mas Merah Panjang Rima Seputeh	Tail Tail Tail Tail Tail	Samples were taken from all females for P4 analysis.
04/01/01	Mas Merah Minah Seputeh Rima Seputeh	Tail Tail Tail Tail Tail	Get blood samples from all females. The rhinos seem very cooperative.
06/01/01	Panjang Rima Seputeh	Tail Tail Tail	Get samples via tail from all three females.
08/01/01	Mas Merah Panjang Rima Seputeh	Tail Tail Tail Tail	Samples taken from all females except for Minah. She was very restless and uncooperative.
09/01/01	Minah	Tail	Get some samples from Minah today.
10/01/01	Minah Rima Seputeh	Tail Tail Tail	Samples were taken from three females for P4 analysis.
11/01/01	Mas Merah Panjang	Tail Tail	Get blood samples from the two females.
15/01/01	Minah Mas Merah Panjang Rima Seputeh	Tail Tail Tail Tail Tail	Get samples via tail from all females.
17/01/01	Minah Mas Merah Panjang Seputeh	Tail Tail Tail Tail	Samples were taken from four females only.
18/01/01	Mas Merah Seputeh	Tail Tail	
20/01/01	Minah Mas Merah Panjang Rima Seputeh	Tail Tail Tail Tail Tail	

Date	Rhino ID	Area taken	Remarks
22/01/01	Minah Mas Merah Panjang Rima Seputeh	Tail Tail Tail Tail Tail	Samples were taken from all females for P4 analysis.
25/01/01	Rima Seputeh	Tail Tail	
26/01/01	Minah Mas Merah Panjang	Tail Tail Tail	
29/01/01	Mas Merah Panjang Rima	Tail Tail Tail	Samples were taken from Rima for pregnancy detection.

Table 2: The Pairing Program of the Males and Females at SRCC, January 2001

Date	Remarks
10/01/01	Mix Rima & Ara. She was bred for about 20 minutes after Dr. Zainal assisted the intromission.
25/01/01	Mix Seputeh & Ara around 10.50 a.m. Mounting was observed twice but Seputeh seems not ready. Head butting was observed but no severe aggression. Separated after 20 minutes to avoid fighting. The rhinos were fighting for the wallow.
26/01/01	Mix Seputeh & Ara in the morning around 10.50 a.m. Twelfth mountings were observed. On the tenth mountings, intromission occurred for about five minutes but the male cannot balance himself and slipped. Separate after both rhinos looked exhausted around 12.20 noon. Mixed again around 3.15 p.m. Head butting was observed at the beginning but the female then turn away. Ara then starts following Seputeh and mounted her after four minutes of mixing. Six mountings were noted and the last one resulting intromission. She was bred for about thirty minutes.
31/01/01	Mix Rima & Ara in the afternoon around 3.30 p.m. Head butting was observed at initial stage but Rima turned away and Ara started to follow her. Nineteen mountings were recorded And the last resulting intromission. She was bred for about twenty minutes.

Table 3: Rhino Weight, January 2001

Rhino ID	Weight (kg) Jan 01	Weight (kg) Dec 00
Mas Merah	648	*
Rima	602	
Minah	575	
Seputeh	782	
Panjang	566	
Shah	566	
Ara	645	

** No weighing was done on December 2000*



Handwritten notes:
S. S. K.
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LABORATORY REPORT		Lab. No: P41 / 2001 / 11	
Submitter: DR DAINAL ZAHARI		Case No: -	
Owner: WILDLIFE DEPT.		Patient Id: PANTANG	
Breed: SUMATRAN	Age: Ad. / H	Sex: F	Date: 3/1/2001

URINALYSIS ✓

SPECIMEN COLLECTION: Spon. Mict. : Cystoc. : Cath. : Manual Comp. : ?

PHYSICAL		CHEMICAL		MICROSCOPICAL
Turbidity:	+	pH	> 8.0	Erythrocytes / hpf: 0 - 3
Colour:	Reddish brown	Protein	0	Leukocytes / hpf: occasional
S.G.:	1.017	Glucose	0	Epithelial cells: 0
		Ketone	0	Casts: 0
		Urobilinogen	0	
		Bilirubin	+	
		Blood. RBC	0	Crystal: Amorphous phosphate
		Hemoglobin	0	3+
Bence Jones Protein		WBC	+	Others: Fats + Bacteria (cocci) 3+

CYTOLOGY

SPECIMEN:

Colour		pH		Erythrocytes	
Turbidity		Protein		Leukocytes	
Consistency		Glucose			
S.G.		CK			

SMEAR:

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LAPURAN MAKMAL

Daripada:
Pengarah Penyelidik,
59, Jalan Sultan Azlan Shah
31400, Ipoh Perak
Tel: 05-557166 / 557187

Ruj. Tuan:
Rujukan Makmal: 8155/00
Tarikh: 27/11/00

Kepada:
Dr.Zainal Zahari
Pusat Pemuliharaan Badak
Jabatan Perhilitan Sg.Dusun
44010 Kuala Kubu Baru
Selangor

Tarikh diterima: 15/11/00
Tuanpunya: Perhilitan
Jenis haiwan: Haiwan Liar Baka: Badak Sumatera Umur: 18T Jantina: Betin
Jenis Spesimen: 1 Organ Pengenalan : Panjang

Keputusan laporan makmal:

Histopatologi:

The tissue was placenta.

Epithelial layer : 6-7 cells ∴ suspect pregnancy > 3 wks (1-2 cells)

Tandatangan:
(Shahirudin b. Shamsudin Dr.)
b/p. Pengarah Penyelidik
Institut Penyelidikan Haiwan
Ipoh, Perak.

Tarikh akhir: 27/11/00

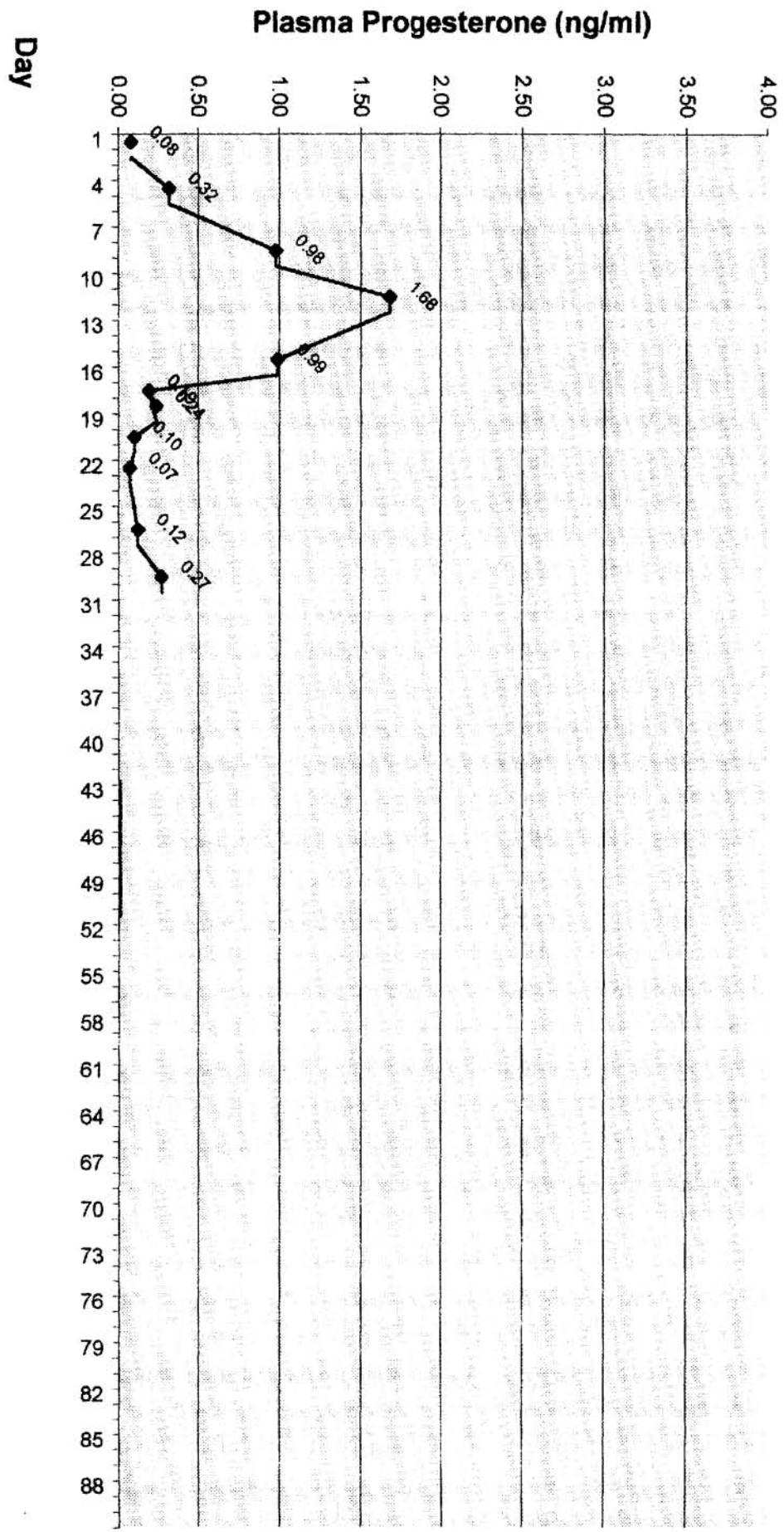
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Pengarah Makmal berkenaan
UEEV-IPH 93
Nh/-

Sumatran Rhinoceros Plasma Progesterone Profile - 2001

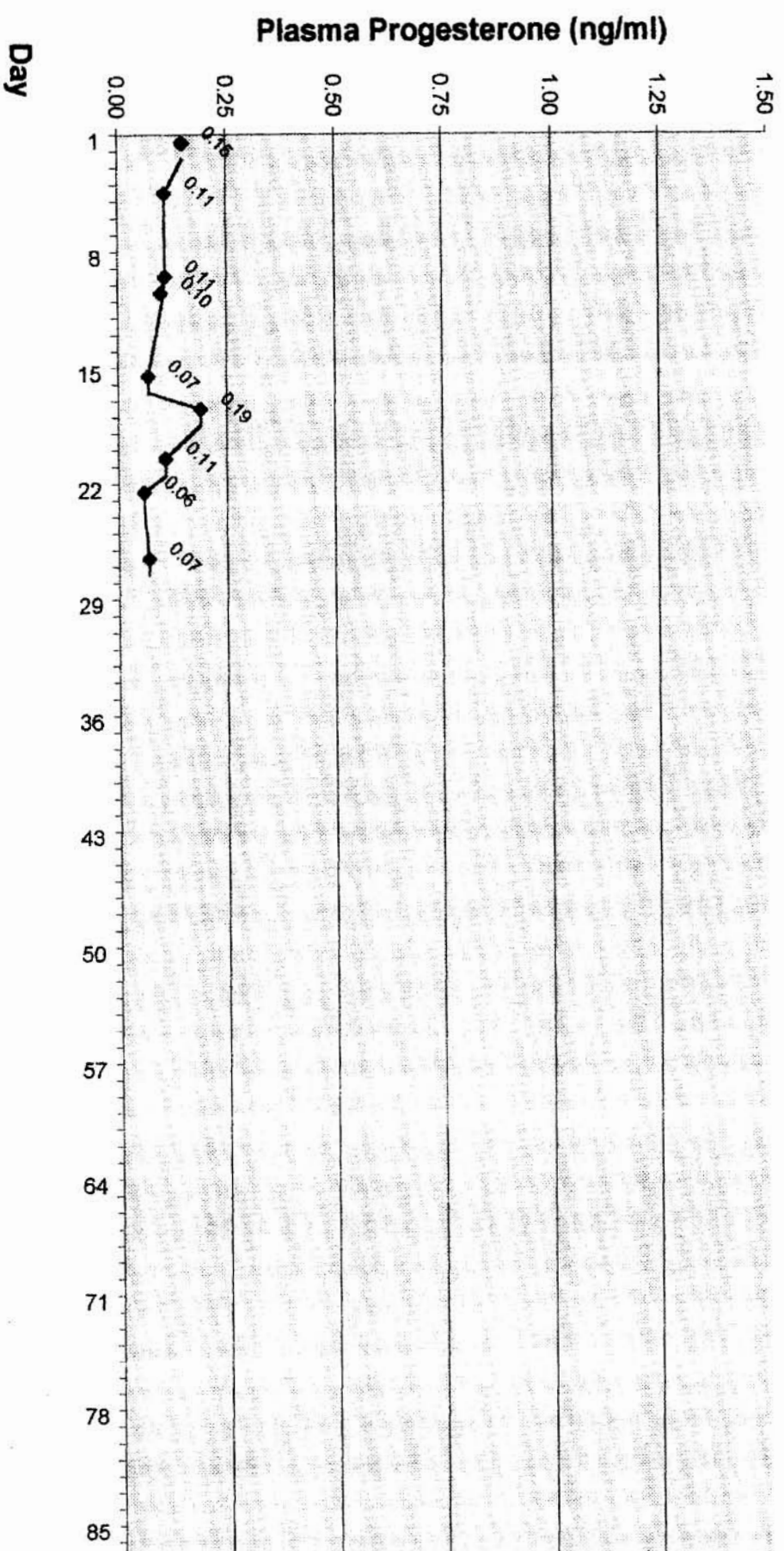
1/4

Mas Merah			Minah			Panjang			Rima			Seputih			
Date	Day	P4 (ng/ml)	Date	Day	P4 (ng/ml)	Date	Day	P4 (ng/ml)	E2 (pg/l)	Date	Day	P4 (ng/ml)	Date	Day	P4 (ng/ml)
1-Jan-01	1	0.08	1-Jan-01	1	0.15	1-Jan-01	1	0.52		1-Jan-01	1	0.67	1-Jan-01	1	0.08
2-Jan-01	2		2-Jan-01	2		2-Jan-01	2			2-Jan-01	2		2-Jan-01	2	
3-Jan-01	3		3-Jan-01	3		3-Jan-01	3			3-Jan-01	3		3-Jan-01	3	
4-Jan-01	4	0.32	4-Jan-01	4	0.11	4-Jan-01	4	0.40		4-Jan-01	4	0.39	4-Jan-01	4	0.15
5-Jan-01	5		5-Jan-01	5		5-Jan-01	5			5-Jan-01	5		5-Jan-01	5	
6-Jan-01	6		6-Jan-01	6		6-Jan-01	6	0.44		6-Jan-01	6	0.11	6-Jan-01	6	0.64
7-Jan-01	7		7-Jan-01	7		7-Jan-01	7			7-Jan-01	7		7-Jan-01	7	
8-Jan-01	8	0.98	8-Jan-01	8		8-Jan-01	8	0.43		8-Jan-01	8	0.09	8-Jan-01	8	1.30
9-Jan-01	9		9-Jan-01	9	0.11	9-Jan-01	9			9-Jan-01	9		9-Jan-01	9	
10-Jan-01	10		10-Jan-01	10	0.10	10-Jan-01	10			10-Jan-01	10	0.17	10-Jan-01	10	1.71
11-Jan-01	11	1.68	11-Jan-01	11		11-Jan-01	11	0.28		11-Jan-01	11		11-Jan-01	11	
12-Jan-01	12		12-Jan-01	12		12-Jan-01	12			12-Jan-01	12		12-Jan-01	12	
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14-Jan-01	14		14-Jan-01	14		14-Jan-01	14			14-Jan-01	14		14-Jan-01	14	
15-Jan-01	15	0.99	15-Jan-01	15	0.07	15-Jan-01	15	0.23		15-Jan-01	15	0.36	15-Jan-01	15	1.18
16-Jan-01	16		16-Jan-01	16		16-Jan-01	16			16-Jan-01	16		16-Jan-01	16	
17-Jan-01	17	0.19	17-Jan-01	17	0.19	17-Jan-01	17	0.28		17-Jan-01	17		17-Jan-01	17	0.21
18-Jan-01	18	0.24	18-Jan-01	18		18-Jan-01	18			18-Jan-01	18		18-Jan-01	18	0.31
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26-Jan-01	26	0.12	26-Jan-01	26	0.07	26-Jan-01	26	0.08		26-Jan-01	26		26-Jan-01	26	
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12-Mar-01	71		12-Mar-01	71		12-Mar-01	71			12-Mar-01	71		12-Mar-01	71	
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17-Mar-01	76		17-Mar-01	76		17-Mar-01	76			17-Mar-01	76		17-Mar-01	76	
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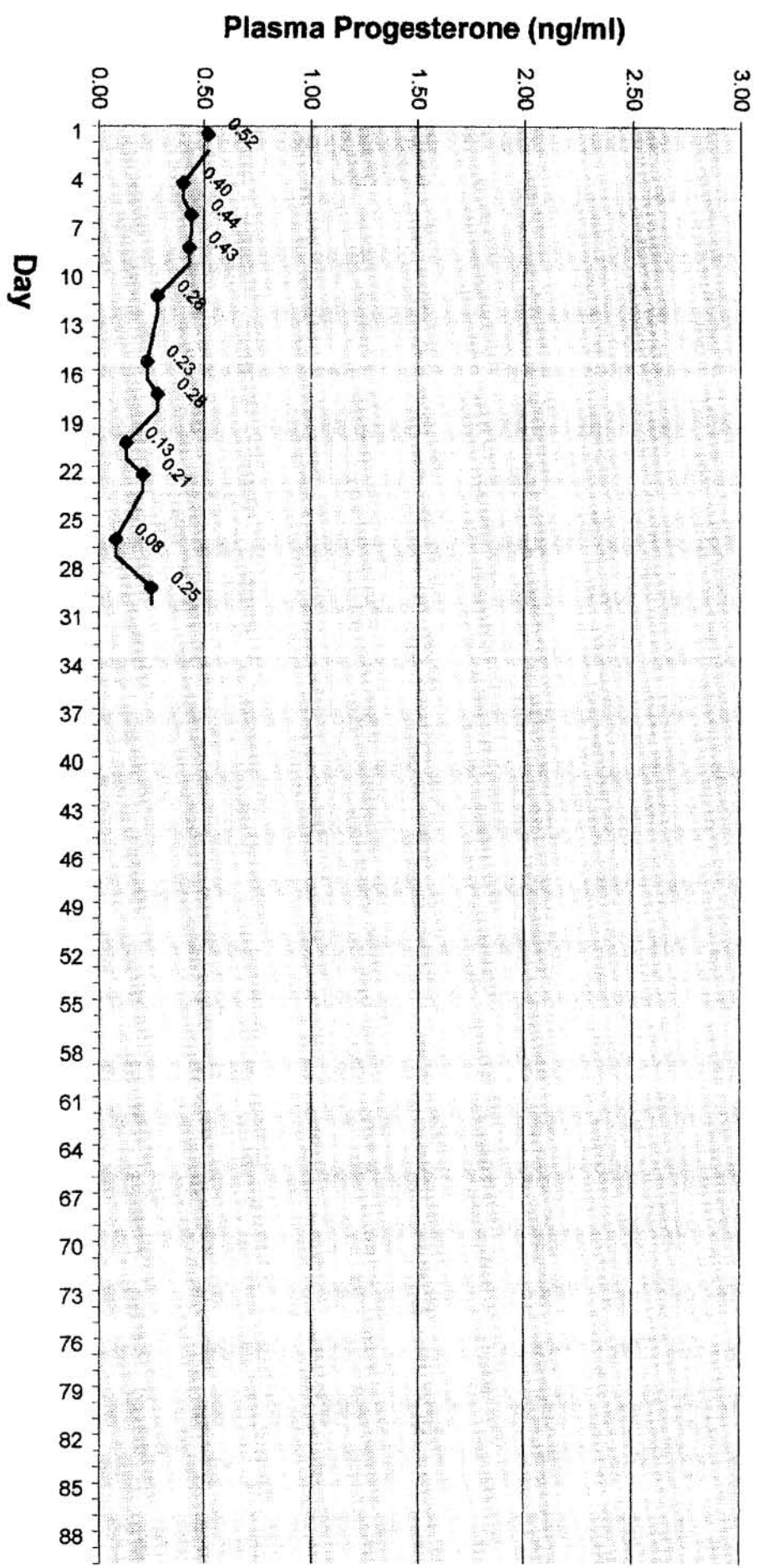
SUMATRAN RHINO
Mas Merah Plasma Progesterone Profile 1 - 2001



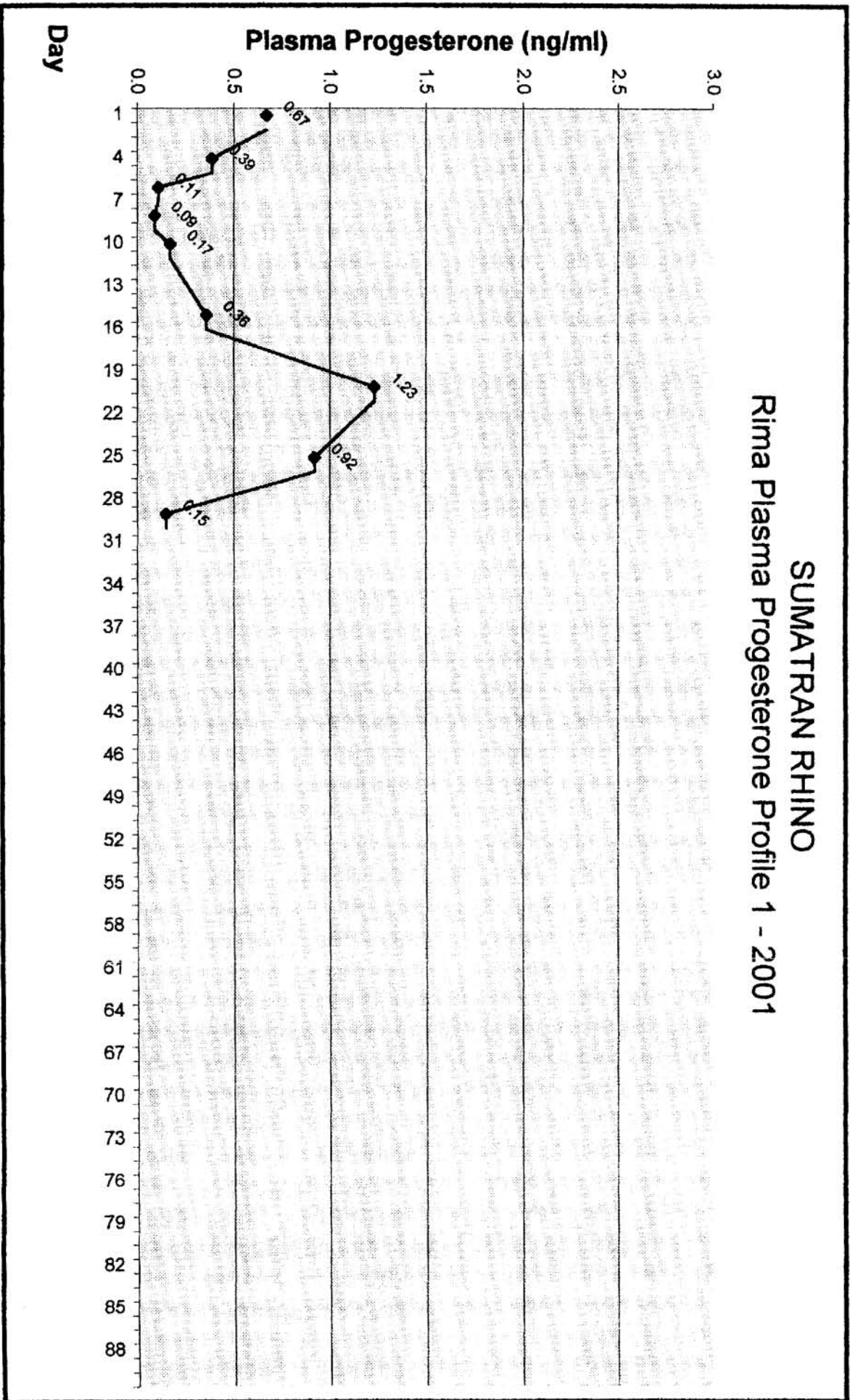
SUMATRAN RHINO
Minah Plasma Progesterone Profile 1 - 2001



SUMATRAN RHINO
Panjang Plasma Progesterone Profile 1 - 2001



SUMATRAN RHINO
Rima Plasma Progesterone Profile 1 - 2001



SUMATRAN RHINO

Seputih Plasma Progesterone Profile 1 - 2001

