

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

**MONTHLY REPORT**

**NOVEMBER 2001**

**BY**

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**&**

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## **INTRODUCTION**

During the month of November, three separate breeding took place between Ara and three females: Seputeh, Rima and Mas Merah. Ara bred Seputeh on 8/11/01, Rima on 13/11/01 and Mas Merah on 24/11/01. The females were bred for about 55, 20 and 20 minutes respectively. It was a second successful breeding and this time the duration was longer. There was no breeding recorded on the other females especially Panjang and Minah which still had a low level of progesterone.

The bleeding procedure was carried out as usual, twice weekly. As for the bred females, blood will be collected once a week.

## **RHINO MANAGEMENT**

### **A) Daily Management**

#### **i) Night stall**

##### *Daily work*

Adam, Shariff and Umor managed the night stalls. Shariff and Umor will clean the night stalls while Adam and other rangers will mix Shah and the two females. Then, he will checked the food supply when it arrived around 9.30 a.m. The browse and fruits were weighed and cleaned before giving to the rhinos. About 40 to 50 kg of browses and 7kg of fruits including papaya, banana and sweet potatoes were given daily. The rhinos were also given horse pellet about 1.5kg every morning. On Monday and Thursday, Adam will help the veterinarian to collect the blood from all females.

##### *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 twice daily: 9.00 a.m. and 3.00 p.m.

## **ii) Ten acres enclosure**

### *Daily Work*

Mohd Noor inspects 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. They will also inspect the fencing for any damages.

During the inspection, the ranger will look for the rhino inside the enclosure and call the rhino for their morning meal. The rhino was confined in the quarter acre first before putting their browse in the feeding trough. The amount given was about 100kg for each rhino per day.

## **B) Breeding Program**

### **i) Breeding Introduction**

Seputeh was expected to come into estrus on 08/11/01 and blood sample was sent to UPM for confirmation. However, the female was scanned on the expected breeding day and an ovulatory follicle was observed sizing about 21mm. Later in the afternoon, the female was paired with Ara and the male started to trail the female about five minutes after mixing. Six mountings were recorded and the last one resulted in intromission, which lasted for about 55 minutes. The next morning, the rhinos could not be paired due to the heavy rain and for safety purpose.

As for Rima, she was scanned on the 12/11/01 and a follicle sized about 18-19mm was observed. The next morning (13/11/01), she was scanned again and the follicle size had increased to between 21-22mm in diameter. In the afternoon, she was mixed with Ara and was bred. Two intromissions were recorded which lasted for about 20 minutes respectively. The next morning (14/11/01), the female was mixed with the other male, Shah but no positive responses were observed between the two rhinos. The rhinos were separated after 40 minutes. Later, Rima was scanned and the follicle sized had increased to 23mm. Then, she was mixed with Ara but no breeding was recorded. On 15/11/01, Rima was scanned again and it was noted that ovulation had occurred.

Mas Merah was scanned on 23/11/01 and a follicle size about 12 mm was observed at the left ovary. Another follicle sizing about 10mm was also noted at the right ovary. Based on her last progesterone result, she had a basal level on 30/10/01. Since her P4 profile is erratic, it was decided to mix her with Ara on 24/11/01. Mounting was observed in the morning but no searching was observed although erection was noted. The rhinos were separated and later were mixed again in the afternoon and the female was bred for about 20 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 in Table 1.

### **b) Progesterone Hormone Profile**

The latest blood result was attached below.

## **iii) Ultrasound**

During this month, ultrasound procedure was conducted on all females except Panjang and the result was summarized in Table 2

## **B) HEALTH STATUS**

Generally, all rhinos are in the good condition. Minah still recovering from the weight loss and she was monitored closely. Mas Merah suffered two big wounds as a result from mixing her with the male, Ara. The first wound was located at the left fore limb and the second one was at the right fore limb folds. The wound was treated daily with hydrogen peroxide, iodine and gusanex spray.

## **C) FEEDING**

No changes were made for the feeding program. A contractor will supplied th browses, which deliver them around 9.00 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.

**Table 1: Blood Collection from the Rhinos, November 2001**

<b>Date</b>	<b>Rhino ID</b>	<b>Area taken</b>	<b>Remarks</b>
01/11/01	Minah Mas Merah Panjang Ara Shah	Tail Tail Tail Tail Tail	Samples were taken from these females for P4 analysis. Blood was taken from the males for testosterone analysis.
05/11/01	Seputeh Rima Panjang Mas Merah Ara Shah	Tail Tail Tail Tail Tail Tail	Get blood samples from all females. The rhinos seem very cooperative. Blood was taken from the males for testosterone analysis
08/11/01	Rima Seputeh Minah Mas Merah Panjang Ara Shah	Tail Tail Tail Tail Tail Tail Tail	Blood was taken for the P4 and testosterone analysis
12/11/01	Minah Rima Seputeh Panjang Mas Merah Ara Shah	Tail Tail Tail Tail Tail Tail Tail	Samples were taken from all rhinos for P4 and testosterone analysis.
15/11/01	Rima Mas Merah Panjang Minah Ara Shah	Tail Tail Tail Tail Tail Tail	Get samples via tail from all females except Seputeh.
20/11/01	Minah Mas Merah Panjang Rima Seputeh Ara Shah	Tail Tail Tail Tail Tail Tail Tail	Blood was taken for the P4 and testosterone analysis

Date	Rhino ID	Area taken	Remarks
22/11/01	Minah Seputeh Panjang Ara Shah	Tail Tail Tail Tail Tail	Samples were taken from these females for P4 analysis. Blood was taken from the males for testosterone analysis.
23/11/01	Mas Merah	Tail	
26/11/01	Minah Seputeh Rima Panjang Mas Merah Ara Shah	Tail Tail Tail Tail Tail Tail Tail	Get blood samples from all females. The rhinos seem very cooperative. Blood was taken from the males for testosterone analysis
29/11/01	Seputeh Minah Mas Merah Panjang Ara Shah	Tail Tail Tail Tail Tail Tail	Blood was taken for the P4 and testosterone analysis
30/10/01	Rima	Tail	

**Table 2: Ultrasound Procedure on the females, November 2001**

Date	Female (s)	Observation
05/11/01	Mas Merah	The cervix, uterine body, the right and left horn looked normal. There were small follicles observed at the right ovary but a follicle sized about 12mm was located at the left ovary.
08/11/01	Mas Merah  Seputeh	The cervix, uterine body and right horn looked normal. Multi small follicles were observed at the right ovary and a 15mm ovary was observed at the left ovary.  A follicle size about 21-22mm was observed.
12/11/01	Mas Merah  Rima	The cervix and uterine body looked normal. Small follicles were observed at the right ovary and a 12mm follicle observed at the left ovary.  Day 20 post breeding scanning. A follicle sized 18-19mm was observed at the right ovary.

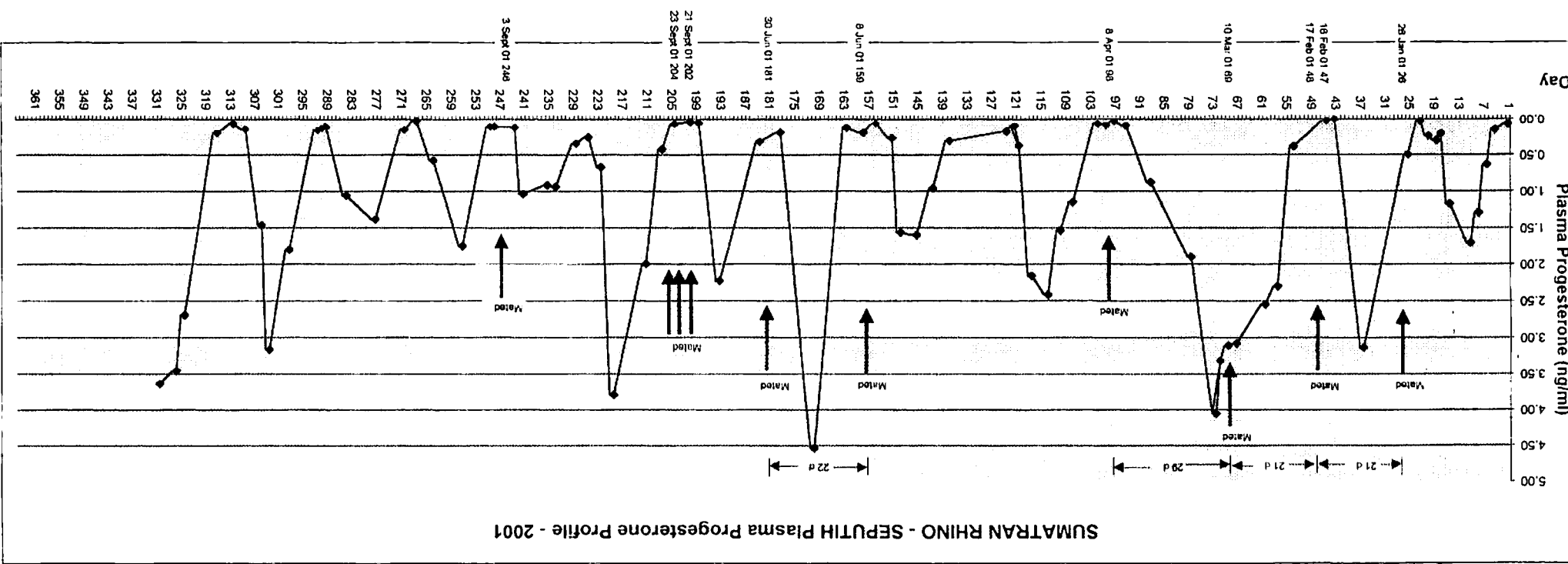
Date	Female (s)	Observation
13/11/01	Rima	The follicle size increased to about 21-22mm and Rima was bred when mix with Ara in the afternoon.
14/11/01	Rima	The follicle size is about 23mm but no breeding was observed when mixing with the males (Shah and Ara)
15/11/01	Rima	Scanning was conducted in the morning and no follicle observed. Ovulation took place.
23/11/01	Minah	The bladder wall looked smaller (decreased) compared to the last image. Small follicles was observed at the right ovary and a 10mm follicle was noted at the left ovary
	Mas Merah	A follicle sized 12 mm in diameter was observed at the right ovary and a 10 mm follicle at the left ovary
26/11/01	Minah	Small multi follicles were observed sizing between 8 to 12mm in both ovary
	Mas Merah	No follicles observed at the right ovary but the left ovary could not be detected. The rhino was not cooperative.
27/11/01	Seputeh	No evidence of an ovulatory follicle observed.
30/11/01	Rima	No evidence of an ovulatory follicle observed.
	Seputeh	No evidence of an ovulatory follicle observed.

**The Breeding Dates of Rhinos in Sg. Dusun, 2000/2001.**

<b>Date(s)</b>	<b>Rhinos</b>	<b>Remarks</b>
5/10/00	Rima & Ara	Bred for 46 minutes.
14/10/00	Panjang & Ara	Bred for about 35 minutes.
19/10/00	Seputeh & Ara	35 minutes.
29/10/00	Rima & Ara	Rima was bred for about 35 minutes.
8/11/00	Seputeh & Ara	Intromission was observed and lasted about 23 minutes.
9/11/00	Seputeh & Ara	Seputeh was bred for about 30 minutes.
10/01/01	Rima & Ara	Bred for 20 minutes after assisted intromission.
26/01/01	Seputeh & Ara	Bred for 30 minutes in the afternoon.
31/01/01	Rima & Ara	Bred for 20 minutes.
01/02/01	Rima & Ara	Bred for 32 minutes.
16/02/01	Seputeh & Ara	Bred for 29 minutes.
17/02/01	Seputeh & Ara	Bred for 35 minutes.
22/02/01	Rima & Ara	Bred for 55 minutes.
15/03/01	Rima & Ara	Bred for 14 & 5 minutes.
16/03/01	Rima & Ara	Bred for 10, 5 & 13 minutes.
08/04/01	Seputeh & Ara	Bred for 32 minutes.
11/04/01	Rima & Ara	Bred for 25 minutes.
03/05/01	Rima & Ara	Bred for 36 minutes.
25/05/01	Rima & Ara	Bred for 25 minutes.
31/05/01	Panjang & Ara	Bred for 26 minutes.
08/06/01	Seputeh & Ara	Bred for 13 & 19 minutes.
16/06/01	Rima & Ara	Bred for 35 minutes.
17/06/01	Rima & Ara	Bred for 30 minutes.
30/06/01	Seputeh & Ara	35 minutes
21/07/01	Seputeh & Ara	30 minutes
22/07/01	Seputeh & Ara	23 minutes
23/07/01	Seputeh & Ara	30 minutes
30/07/01	Rima & Ara	35 minutes
13/08/01	Seputeh & Ara	30 minutes
29/08/01	Mas Merah & Ara	2 minutes
03/09/01	Seputeh & Ara	27 minutes
04/09/01	Seputeh & Ara	15 mins. 32 minutes
25/09/01	Seputeh & Ara	43 minutes
26/09/01	Seputeh & Ara	34 minutes
17/10/01	Seputeh & Ara	30 minutes
18/10/01	Seputeh & Ara	30 minutes
23/10/01	Rima & Ara	30 minutes
08/11/01	Seputeh & Ara	55 minutes
13/11/01	Rima & Ara	20 mins, 20 minutes
24/11/01	Mas Merah & Ara	20 minutes

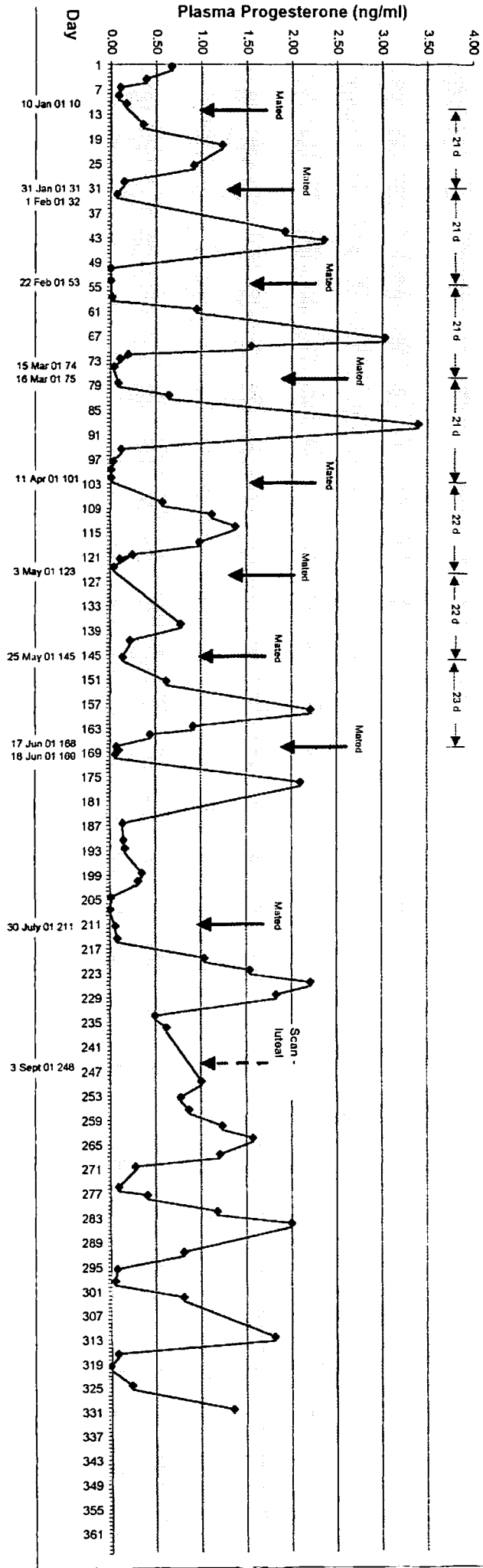


Location	Date	Day	P4 (ng/ml)
Mas Merah	1-Oct-01	274	1.43
	2-Oct-01	275	1.57
	3-Oct-01	276	
	4-Oct-01	277	
	5-Oct-01	278	
	6-Oct-01	279	
	7-Oct-01	280	
	8-Oct-01	281	1.48
	9-Oct-01	282	
	10-Oct-01	283	
	11-Oct-01	284	1.30
	12-Oct-01	285	
	13-Oct-01	286	
	14-Oct-01	287	
	15-Oct-01	288	
	16-Oct-01	289	1.19
	17-Oct-01	290	
	18-Oct-01	291	0.94
	19-Oct-01	292	
	20-Oct-01	293	
	21-Oct-01	294	0.97
	22-Oct-01	295	
	23-Oct-01	296	
	24-Oct-01	297	
	25-Oct-01	298	0.58
	26-Oct-01	299	
	27-Oct-01	300	
	28-Oct-01	301	
29-Oct-01	302	0.08	
30-Oct-01	303		
31-Oct-01	304		
1-Nov-01	305	0.01	
2-Nov-01	306		
3-Nov-01	307		
4-Nov-01	308		
5-Nov-01	309	0.05	
6-Nov-01	310		
7-Nov-01	311		
8-Nov-01	312	0.03	
9-Nov-01	313		
10-Nov-01	314		
11-Nov-01	315		
12-Nov-01	316	0.18	
13-Nov-01	317		
14-Nov-01	318		
15-Nov-01	319	0.45	
16-Nov-01	320		
17-Nov-01	321		
18-Nov-01	322		
19-Nov-01	323		
20-Nov-01	324	0.62	
21-Nov-01	325		
22-Nov-01	326		
23-Nov-01	327	0.30	
24-Nov-01	328		
25-Nov-01	329		
26-Nov-01	330	0.06	
27-Nov-01	331		
28-Nov-01	332		
29-Nov-01	333		
30-Nov-01	334		
1-Dec-01	335		
2-Dec-01	336		
3-Dec-01	337		
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16-Dec-01	350		
17-Dec-01	351		
18-Dec-01	352		
19-Dec-01	353		
20-Dec-01	354		
21-Dec-01	355		
22-Dec-01	356		
1-Oct-01	274	0.09	
2-Oct-01	275		
3-Oct-01	276		
4-Oct-01	277	0.41	
5-Oct-01	278		
6-Oct-01	279		
7-Oct-01	280		
8-Oct-01	281	1.18	
9-Oct-01	282		
10-Oct-01	283		
11-Oct-01	284	2.00	
12-Oct-01	285		
13-Oct-01	286		
14-Oct-01	287		
15-Oct-01	288		
16-Oct-01	289		
17-Oct-01	290	0.81	
18-Oct-01	291		
19-Oct-01	292		
20-Oct-01	293		
21-Oct-01	294	0.07	
22-Oct-01	295		
23-Oct-01	296		
24-Oct-01	297		
25-Oct-01	298	0.05	
26-Oct-01	299		
27-Oct-01	300		
28-Oct-01	301		
29-Oct-01	302	0.81	
30-Oct-01	303		
31-Oct-01	304		
1-Nov-01	305		
2-Nov-01	306		
3-Nov-01	307		
4-Nov-01	308		
5-Nov-01	309	0.15	
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7-Nov-01	311		
8-Nov-01	312	0.08	
9-Nov-01	313		
10-Nov-01	314		
11-Nov-01	315		
12-Nov-01	316	0.06	
13-Nov-01	317		
14-Nov-01	318		
15-Nov-01	319	0.05	
16-Nov-01	320		
17-Nov-01	321		
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20-Nov-01	324	0.11	
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18-Dec-01	352		
19-Dec-01	353		
20-Dec-01	354		
21-Dec-01	355		
22-Dec-01	356		
1-Oct-01	274	0.16	
2-Oct-01	275		
3-Oct-01	276		
4-Oct-01	277	1.39	
5-Oct-01	278		
6-Oct-01	279		
7-Oct-01	280		
8-Oct-01	281		
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10-Oct-01	283		
11-Oct-01	284	1.06	
12-Oct-01	285		
13-Oct-01	286		
14-Oct-01	287		
15-Oct-01	288		
16-Oct-01	289	0.11	
17-Oct-01	290	0.13	
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24-Oct-01	297		
25-Oct-01	298	1.80	
26-Oct-01	299		
27-Oct-01	300		
28-Oct-01	301		
29-Oct-01	302		
30-Oct-01	303	3.17	
31-Oct-01	304		
1-Nov-01	305	1.47	
2-Nov-01	306		
3-Nov-01	307		
4-Nov-01	308		
5-Nov-01	309	0.14	
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7-Nov-01	311		
8-Nov-01	312	0.06	
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21-Nov-01	325		
22-Nov-01	326	3.46	
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26-Nov-01	330	3.64	
27-Nov-01	331		
28-Nov-01	332		
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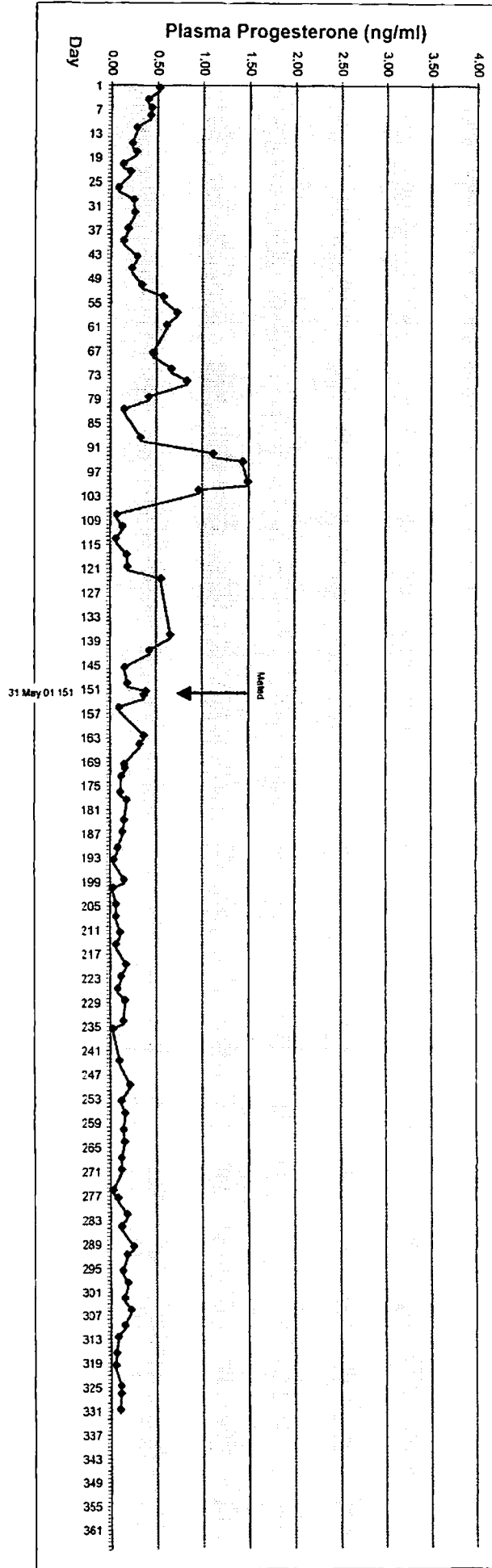


SUMATRAN RHINO - SEPUTIH Plasma Progesterone Profile - 2001

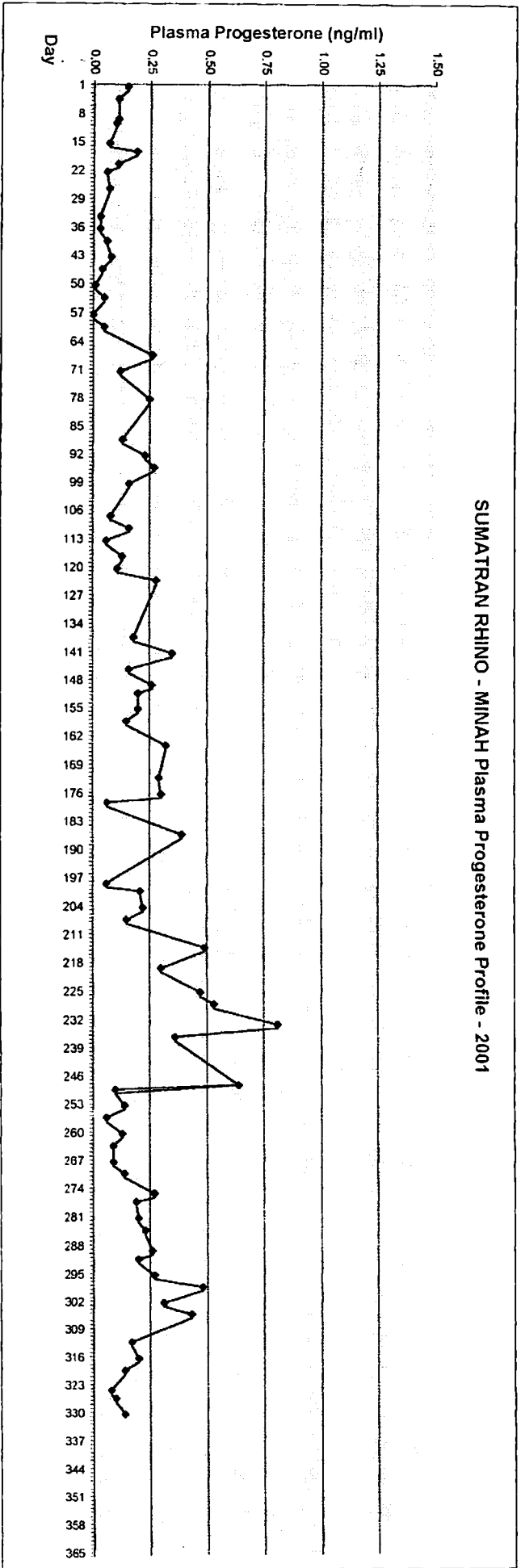
SUMATRAN RHINO - RIMA Plasma Progesterone Profile - 2001



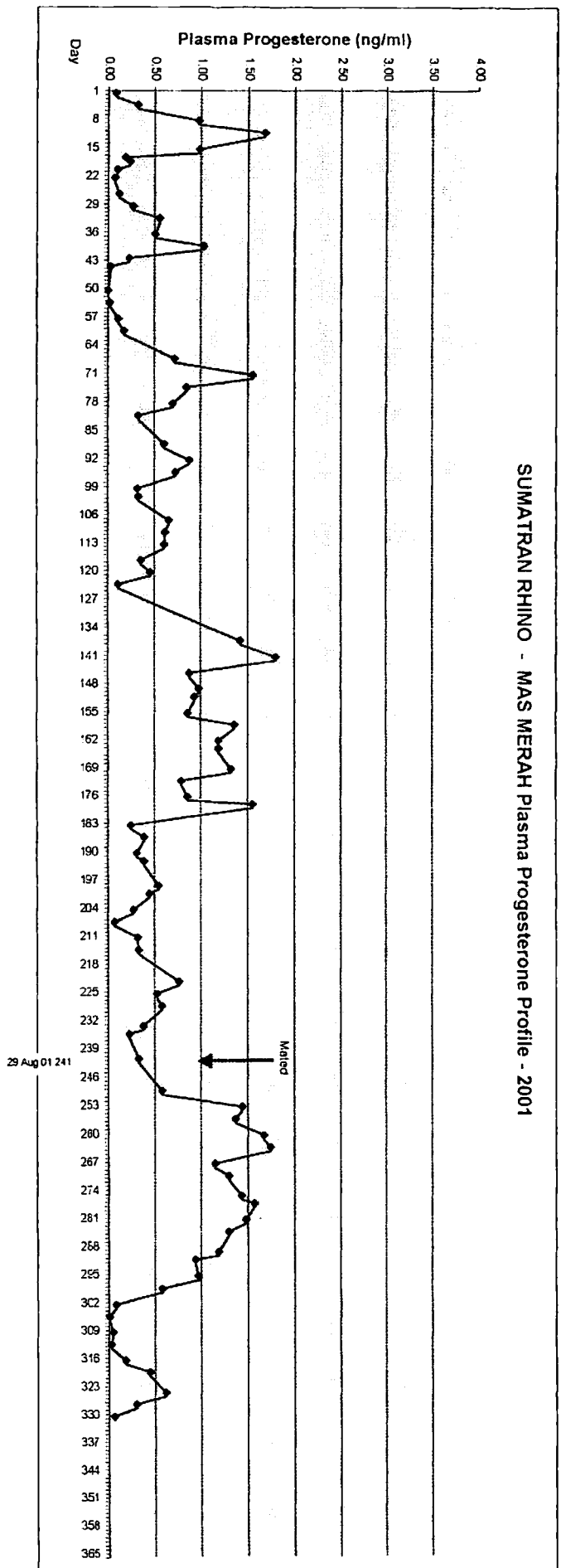
SUMATRAN RHINO - PANJANG Plasma Progesterone Profile - 2001



SUMATRAN RHINO - MINAH Plasma Progesterone Profile - 2001



SUMATRAN RHINO - MAS MERAH Plasma Progesterone Profile - 2001



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