

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

MONTHLY REPORT

JUNE 2002

BY

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&

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INTRODUCTION

No breeding took place throughout the month. However, the females were mixed with Ara but no breeding occurred. Seputeh was mixed with Ara for a week but her cycle was late than usual. Latter, when the blood result was received late, the estrus cycle of both Seputeh and Mas Merah was missed. Minah started to cycle again after mixing her with Ara. She was paired with Ara but no breeding was achieved. As for Panjang, she was mixed with Ara starting June 19 on alternately day basis. Based on the latest blood result, her P4 started to increase from the basal level.

Bleeding procedure was carried out as usual, twice weekly and the samples were sent to UPM for hormonal analysis. Minah was weighed twice weekly as to monitor her weight. The other rhinos were weighed once a month.

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 daily while Adam will inspected 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 2.0kg every morning. Every Monday and Thursday morning, blood samples will be collected from all rhinos.

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

Based on her cycle pattern, Seputeh was expected to be in estrus starting from June 7. Therefore she was paired with Ara from June 7 to June 13 without any positive breeding behaviour and the procedure was stopped. Unfortunately, the blood result came late and her cycle was missed (0.12ng/ml on June 16). Based on this, she was predicted to be in estrus starting on July 6.

Rima and Mas Merah were also paired with Ara but no positive behaviour observed. These two females had an irregular cycle and therefore the two were monitored with both blood and ultrasound. Based on the latest P4 result, Mas Merah's cycle was missed (0.05ng/ml on June 24) and Rima's level did not go the basal level. Her level went up from 0.29ng/ml on June 24 to 0.52ng/ml on June 27. Based on these, it is difficult to predict her estrus day.

The observation of the mixing procedure of the females was summarized in the table below.

ii) Bleeding Program

a) Blood Collection

The blood collection was carried out twice weekly, every Monday and Thursday. The bleeding procedure was summarized in Table 1.

b) Progesterone Hormone Profile

Blood samples were sent to UPM for hormonal analysis and the latest blood result was attached below.

B) HEALTH STATUS

Generally, all rhinos are in the good condition. Minah's weight experienced a drop from 476kg to 450kg but later increased to 466kg. However, her behaviour and appetite was good and her weight is being monitored on weekly basis. The other rhinos were weighed once a month. Both weighing results are tabulated below.

Table 3: Rhinos' Body Weight (Kg), June 2002

Month/ Rhino ID	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
RIMA	552	542	542	554	580	576						
MAS MERAH	612	590	578	586	595	594						
MINAH	462	450	476	476	480	450						
SEPUTIH	738	752	742	736	*	724						
PANJANG	532	*	523	512	538	514						
ARA	610	588	574	574	613	592						

REMARKS:

* In the 10 acres enclosure

Table 4: Minah's Weekly Body Weight (Kg), May to July 2002

Rhino ID / Date	7/5	14/5	21/5	29/5	5/6	12/6	22/6	5/7
Minah	470	480	492	476	476	476	450	466

C) FEEDING

No changes were made for the feeding program. A contractor will supply the 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 and 7.0g of fruits daily. Minah was given 3.0kg of pellets to improve her body weight and the other rhinos were given 2.0kg.

Table 1: Blood Collection from the Rhinos, June 2002

Date	Rhino ID	Area taken	Remarks
June 3	Minah Mas Merah Panjang Rima Seputeh Ara	Tail Tail Tail Tail Tail Tail	Samples were taken from these females for P4 analysis. Blood was taken from the males for testosterone analysis.
June 6	Rima Panjang Mas Merah Ara	Tail Tail Tail Tail	Samples were taken from the females for P4 analysis. Blood was taken from the males for testosterone analysis.
June 10	Rima Seputeh Minah Mas Merah Panjang Ara	Tail Tail Tail Tail Tail Tail	Blood was taken for the P4 and testosterone analysis
June 13	Minah Seputeh Panjang Mas Merah Ara	Tail Tail Tail Tail Tail	Samples were taken from all rhinos for P4 and testosterone analysis.
June 17	Minah Mas Merah Panjang Rima Seputeh Ara	Tail Tail Tail Tail Tail Tail	Samples were taken from these females for P4 analysis. Blood was taken from the males for testosterone analysis.
June 20	Minah Mas Merah Panjang Rima Seputeh Ara	Tail Tail Tail Tail Tail Tail	Blood was taken for the P4 and testosterone analysis
June 24	Minah Seputeh Mas Merah Panjang Rima Ara	Tail Tail Tail Tail Tail Tail	Blood was taken for the P4 and testosterone analysis

Date	Rhino ID	Area taken	Remarks
June 27	Minah Mas Merah Rima	Tail Tail Tail	Blood was taken for the P4 and testosterone analysis

Table 2: The Ultrasound Observation (Follicle Size, mm) of the Females, June 2002

Date/ Rhino ID	5/6	7/6	11/6	14/6	18/6	21/6	27/6
Minah	7-10	10	10-12	12	13	13	12
Rima	10	12	12	13	14	14&15	15
Mas Merah	7-10	10	10	12	12	13	10

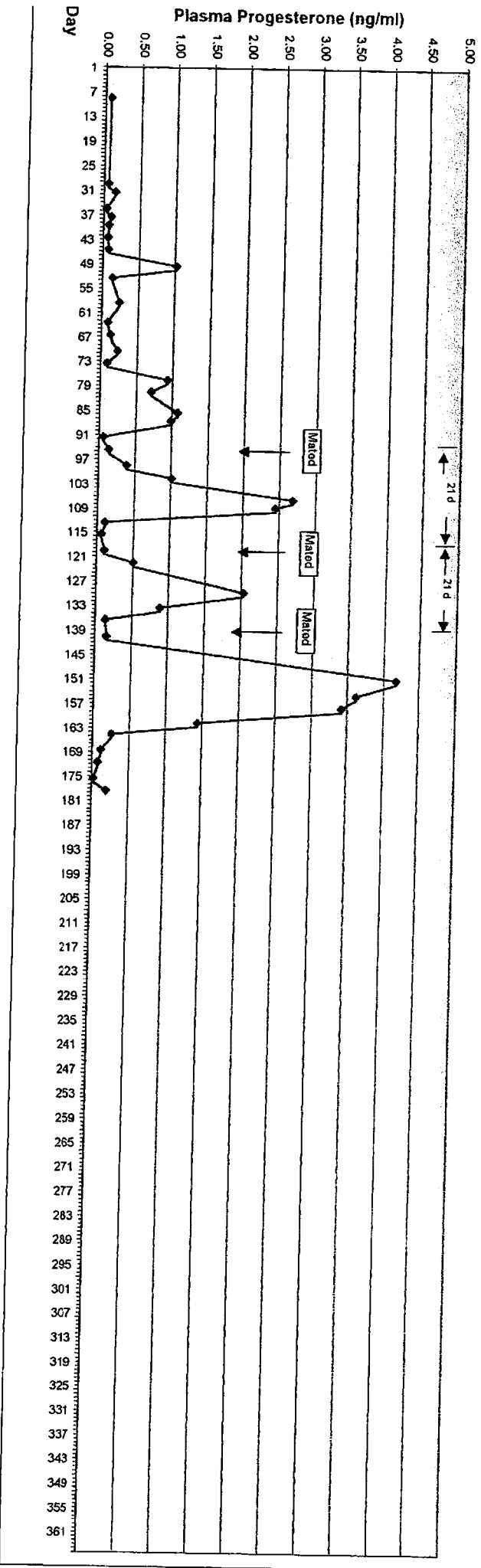
Table 3: The Pairing of Ara and the Females, June 2002

Date	Rhino ID	Observation
June 1	Rima & Ara	No interest observed from both rhinos. Ara tried to chase Rima and the pair was separated.
	Minah & Ara	Minah started to follow Ara when the male walked away. Later, both rhinos were rubbing each other side by side. Head butting was observed and the rhinos were separated after 15 minutes.
	Mas Merah & Ara	Mas Merah reluctant to approach Ara. She blew a lot and looked afraid.
June 2	Minah & Ara	Minah followed Ara and later head butting was observed. She pushed the male too much and the rhinos were separated after 15 minutes to avoid aggression.
	Rima & Ara	The pair was mixed for about five minutes. No mating behaviour noted.
	Mas Merah & Ara	Both rhinos eating side by side. No response from Ara when Mas walked passed him.
June 3	Minah & Ara	Ara walked away after eating the fruits and Minah followed him. The rhinos were side-by-side and later pushing each other head to head.
	Rima & Ara	No interest observed from both rhinos
	Mas Merah & Ara	Mas Merah started to scream when she saw Ara. She blows a lot and the pair was separated.
June 5	Minah & Ara	Minah was observed following Ara and later they were side by side. Head butting occurred and separated after 20 minutes to avoid aggression.
June 6	Minah & Ara	The rhinos were eating side by side. Minah followed Ara and later head butting was observed. Separate after 15 minutes.

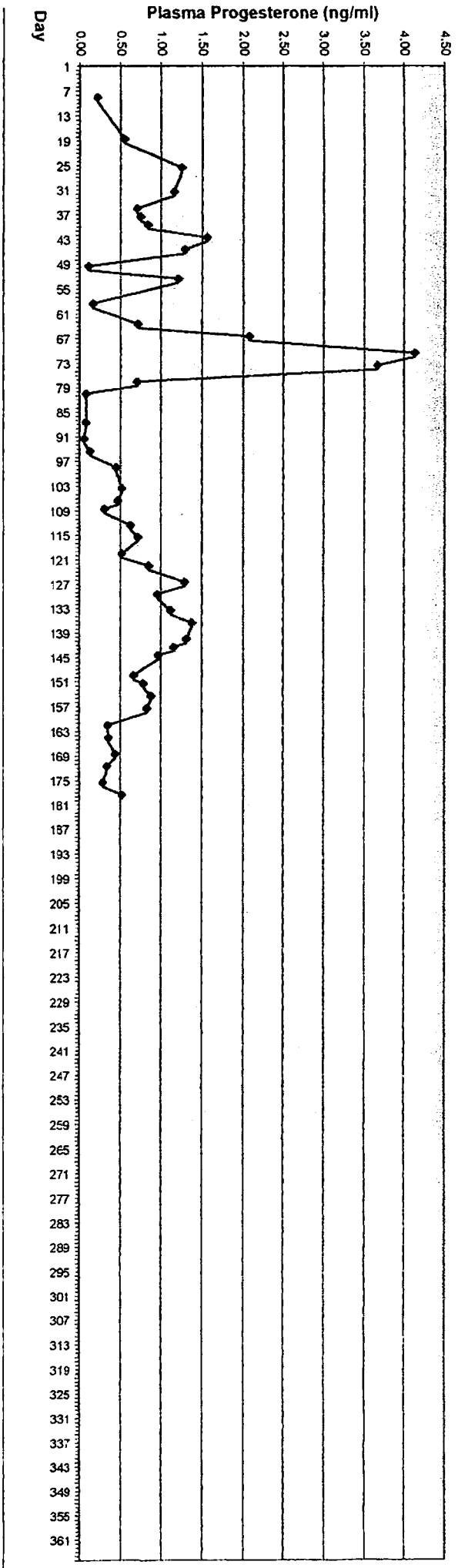
Date	Rhino ID	Observation
June 7	Minah & Ara	Minah still followed Ara but no breeding occurred. Head butting occurred and the pair was separated.
	Seputeh & Ara	Ara followed Seputeh and the female turned around and head butting occurred. Separated to avoid aggression.
June 8	Seputeh & Ara	No positive behaviour observed from both rhinos.
June 9	Seputeh & Ara	No positive behaviour observed from both rhinos.
June 10	Minah & Ara	No positive response observed. The rhinos were side by side eating. Ara sniffed Minah but no further response. Minah followed Ara when he walked away.
	Seputeh & Ara	Both rhinos were eating together. Seputeh vocalized when Ara approached her. No further response and the rhinos were separated.
June 11	Seputeh & Ara	Both rhinos were eating side by side. Ara sniffed Seputeh but no further response. Seputeh vocalized a lot.
June 12	Seputeh & Ara	Ara followed Seputeh but the female vocalized a lot. She turned around and head butting occurred.
June 13	Minah & Ara	Minah and Ara were eating side by side. No response when Ara sniffed Minah. Ara walked away and Minah followed him but no positive behaviour observed.
	Seputeh & Ara	Both rhinos were eating together. Ara sniffed Seputeh but no positive response.
June 19	Minah & Ara	Ara walked away and Minah followed him but no positive behaviour observed.
	Panjang & Ara	Panjang vocalized when Ara tried to follow her. Ara sniffed her but no further response.
June 20	Minah & Ara	Ara walked away and Minah followed him but no positive behaviour observed.
	Panjang & Ara	Both rhinos were eating side by side. Panjang walked away and Ara tried to follow her but she vocalized.

Date	Rhino ID	Observation
June 21	Minah & Ara	Minah followed Ara and later head butting observed. No positive behaviour and the rhinos were separated.
	Panjang & Ara	Both rhinos were eating together. Later, Ara sniffed Panjang but no further response.
June 25	Minah & Ara	Ara walked away after eating the fruits and Minah followed him. The rhinos were side-by-side and later pushing each other head to head.
	Panjang & Ara	Panjang vocalized when Ara tried to follow her. Ara sniffed her but no further response.
June 27	Minah & Ara	Minah followed Ara and later head butting observed. No positive behaviour and the rhinos were separated.
	Panjang & Ara	Both rhinos were eating side by side. Panjang walked away and Ara tried to follow her but she vocalized.

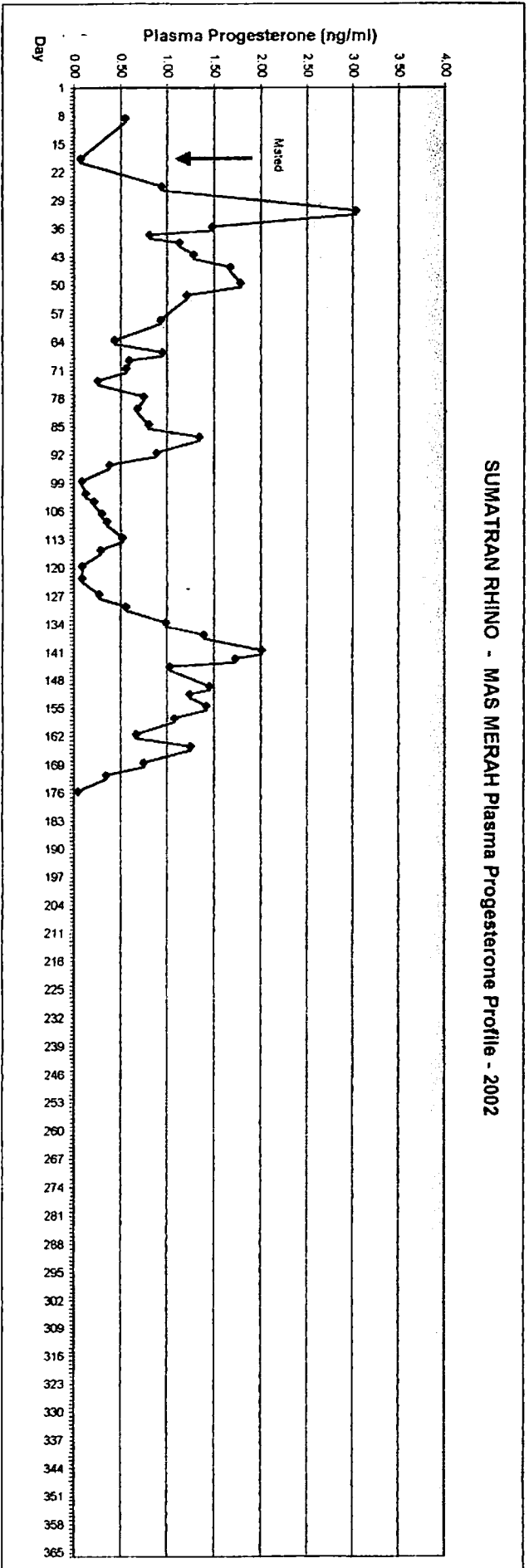
SUMATRAN RHINO - SEPUTIH Plasma Progesterone Profile - 2002



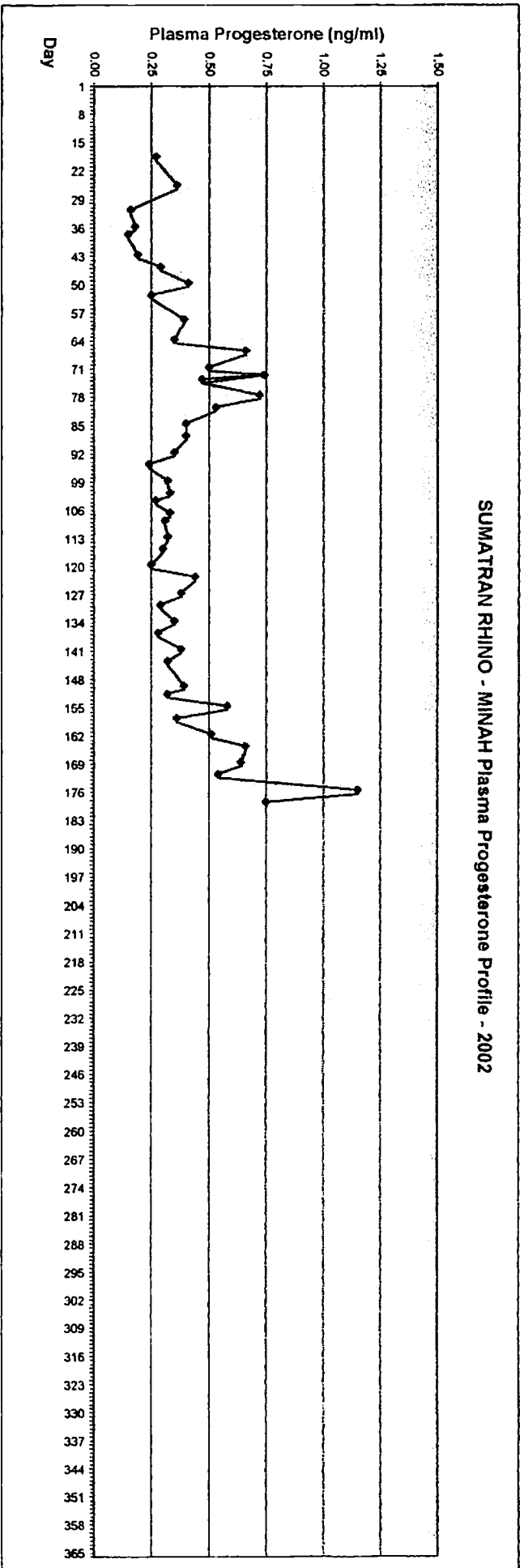
SUMATRAN RHINO - RIMA Plasma Progesterone Profile - 2002



SUMATRAN RHINO - MAS MERAH Plasma Progesterone Profile - 2002



SUMATRAN RHINO - MINAH Plasma Progesterone Profile - 2002



SUMATRAN RHINO - PANJANG Plasma Progesterone Profile - 2002

