

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

MONTHLY REPORT

AUGUST 2003

BY

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INTRODUCTION

There was a mating between Ara and Seputeh on August 23 for 56 minutes. Seputeh was last mated on July 31 and her estrus was late for about 2-3 days.

The Sumatran Rhino Workshop was held at Sg. Dusun from 7 to 11 of August. Ultrasound procedures were carried out on all females to evaluate their reproductive status. The PMSG therapy on Panjang and Mas Merah was done on August 9 and result was attached with this report. The recommendation from the workshop was also summarized below.

Apart from that, Dr. Monica Stoops from the Cincinnati Zoo help to set up the EIA procedure at Sg. Dusun during the workshop.

RHINO MANAGEMENT

A) Daily Management

i) Night stall

Daily work

Mohd Noor managed the night stalls together with Shariff and Umor. Shariff and Umor will clean the night stalls daily while Mohd. Noor 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 except for Minah. She was given the Equine Senior pellet to increase her weight. 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 water trough was cleaned and the drinking water was changed on daily basis. 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

Adam will inspect the electric fencing every morning. The fencing will be 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.

The ranger was then put about 50 kg of browses and this was done twice daily, in the morning and afternoon.

B) Breeding Program

i) Breeding Introduction

a) Seputeh

Seputeh was paired with Ara from August 20 and a good breeding behaviour was observed on August 22 but no copulation occurred. On August 23, the pair was mixed again and resulted intromission, which lasted 56 minutes.

b) Panjang

Panjang was given PMSG therapy to stimulate her to cycle and she was scanned to monitor her follicular growth. She responded well to the treatment and ovulatory follicles (20-21mm) were observed and she was showing breeding behaviour when pairing her with Ara. However, mating did not achieved since Ara failed to penetrate her.

c) Mas Merah

Mas Merah was also given PMSG therapy and she did not respond to the treatment. No follicular activity was observed during ultrasound.

d) Minah

Minah was scanned and she had some small follicles and her follicular growth was not satisfactory maybe due to her weight loss.

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.

C) HEALTH STATUS

The rhinos were weighed at least once a month but Minah was monitored twice weekly. The result is tabulated in Table3 and 4.

Table 1: Blood Collection from the Rhinos, August 2003

Date	Rhino ID	Area taken	Remarks
Aug 1	Mas Merah Minah Panjang	Tail Tail Tail	Samples were taken from the females for P4 analysis.
Aug 4	Panjang Mas Merah Minah	Tail Tail Tail	Samples were taken from the females for P4 analysis.
Aug 7	Minah Panjang Seputeh Mas Merah	Tail Tail Tail Tail	Blood was taken for P4 analysis
Aug 11	Minah Panjang Mas Merah Seputeh	Tail Tail Tail Tail	Samples were taken from all females for P4 analysis.
Aug 14	Minah Seputeh Panjang	Tail Tail Tail	Samples were taken from the females for P4 analysis.
Aug 19	Minah Panjang Mas Merah Seputeh	Tail Tail Tail Tail	Samples were taken from the females for P4 analysis.
Aug 21	Minah Seputeh Panjang Mas Merah	Tail Tail Tail Tail	Blood was taken for the P4 analysis
Aug 25	Panjang Minah Mas Merah Seputeh	Tail Tail Tail Tail	Samples were taken from the females for P4 analysis
Aug 28	Panjang Minah Seputeh	Tail Tail Tail	Samples were taken from the females for P4 analysis

Table 2: The Sumatran Rhino Reproductive Examination and Breeding Introduction, August 2003

Exam Date	Female ID	Ultrasound Data	Behaviour
Aug 10	Panjang	MSF (not much activity)	No mixing
	Mas Merah	No follicular activity	No mixing
	Minah	MSF, <10mm	No mixing
Aug 11	Panjang	R: small follicle L: 14-15mm	No mixing
	Mas Merah	No follicular activity	No mixing
	Minah	R: 10-12mm L: MSF. <10mm	No mixing
Aug 12	Panjang	R: small follicle L: 17-18mm, 11mm	PM: Mixed with Ara but Panjang vocalized a lot. looked early.
	Mas Merah	No follicular activity	No mixing
	Minah	R: 10-12mm L: MSF. <10mm	No mixing
Aug 13	Panjang	R: 10mm L: 19-20mm, 15mm	AM: Ara mounted but no erection, Panjang vocalized a lot. PM: Ara mounted and erected. searching but could not penetrate.
	Mas Merah	No follicular activity	No mixing
	Minah	R: 13-14mm L: MSF. <10mm	No mixing

Exam Date	Female ID	Ultrasound Data	Behaviour
Aug 15	Mas Merah Panjang	No follicular activity R: small follicle L: 17 & 21mm	No mixing AM: Ara followed Panjang, mounted her but she walked away. Ara followed her again but she went into the wallow, vocalized occasionally. PM: Ara followed Panjang, tried to mount her but she sit down and walked away, vocalizing.
Aug 16	Minah Panjang	R: 14mm L: MSF R: 13mm L: 17mm, 22-23mm	No mixing AM: Ara approached Panjang but she vocalized & blowing. Ara followed for a while and then lost interest.
Aug 17	Mas Merah Panjang	No follicular activity No US, a lot of gas	No mixing No interest.
Aug 18	Mas Merah Panjang	No follicular activity R: 17mm L: 26-27mm	No mixing No interest observed, panjang vocalized and blowing a lot.
Aug 20	Minah	R: 15mm L: MSF	No mixing
Aug 27	Panjang Minah Mas Merah	Luteinizing follicles observed R: 15mm L: MSF No follicular activity	No mixing No mixing No mixing

Table 3: Rhinos' Body Weight (Kg), August 2003

Month/ Rhino ID	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
MAS MERAH	610	*	603	*	*	605	*	607				
MINAH	522	530	539	534	535	523	520	515				
SEPUTIH	762	762	772	774	776	765	770	768				
PANJANG	572	566	569	550	548	540	538	532				
ARA	614	615	623	627	635	625	630	635				

*Inside the 10 acres enclosure

Table 4: Minah's Weekly Body Weight (Kg), August 2003

Rhino ID / Date	10/8	12/8	15/8	20/8	25/8	28/8
Minah	510	510	512	512	513	515

Panjang & Mas Merah PMSG Hormonal Therapy Result

Date	PMSG Post - FSH	Ultrasound Data	Behaviour
Aug 9		R:NSF L:MSF (10-12mm)	No mixing
Aug 10	24 Hrs Post PMSG		No mixing
Aug 11	48 Hrs Post PMSG	R: 10mm L: 15mm	No mixing
Aug 12	72 Hrs Post PMSG	R: 10 mm L: 17mm	Ara checked Panjang & followed her for a while but Panjang vocalized a lot.
Aug 13	96 Hrs Post PMSG	R: 10 mm L: 16mm, 19mm	Ara sniffed Panjang & followed her, Panjang vocalized occasionally.
Aug 14	120 Hrs Post PMSG (Day 5)	Not examine (electricity problem)	AM:Ara checked Panjang, then followed her, mounted for 9x with erection & searching but Panjang's tail blocked the penetration. PM:
Aug 15	144 Hrs Post PMSG (Day 6)	R: NE L: 17mm, 21mm	AM:Ara sniffed Panjang & followed her for a while but Panjang vocalized a lot & wanted to fight. PM: No interest. Both rhinos went separate ways, Panjang blowing & vocalized when Ara approached.

Date	FSH / HR Post - FSH	Ultrasound Data	Behaviour
Aug 16	7 days Post – FSH	R:NE L:21mm,17mm	AM:Ara checked Panjang, no interest observed. Ara kept eating when Panjang walked away. PM: No interest observed.
Aug 17	8 days Post – FSH	R:12mm L:21mm,17mm	AM:Ara followed Panjang closely & tried to mount but Panjang sit & then walked away under him. Panjang vocalizing & blowing a lot. PM:Panjang vocalized & blowing a lot when Ara approached her and she looked afraid.
Aug 18	9 days Post – FSH	R: MSF L: 20mm,15mm	AM:Ara followed Panjang for a while, Panjang vocalized frequently & then both rhinos went separate ways. Ara approached Panjang again but she blowing and vocalizing. PM:Ara checked Panjang but ignored her when she walked away.
Aug 19	10 days Post – FSH	R: MSF L: 20mm,15mm	AM:Ara sniffed Panjang and followed her for a while. then lost interest. Ara approached Panjang again but she blowing & vocalizing. PM:Ara followed Panjang but then lost interest, both rhinos went separate ways.

Notes: Mas Merah did not show any good response to the treatment.

**SUMATRAN RHINO FEMALE SUMMARY II (RECOMMENDATION)
11 AUGUST 2003**

MINAH	MAS MERAH	PANJANG	SEPUTEH	ARA (male)
1) Vaccinate tetanus	1) Vaccinate tetanus	1) Vaccinate tetanus	1) Vaccinate tetanus	1) Vaccinate tetanus
2) Reproductive exams -U/S daily during follicle growth stage -U/S 2x weekly during luteal phase -P4 2x weekly	2) Reproductive exams -U/S daily through 18/8/03 -Start mixing with Ara at follicle size 18mm -Bleed for P4 assay every other day through 18/8/03 then 2x weekly	2) Reproductive exams -U/S daily through 18/8/03 -Start mixing with Ara at follicle size 18mm -Bleed for P4 assay every other day through 18/8/03 then 2x weekly	2) Reproductive exams -U/S on Day 16 & 17 post mating; on 16 & 17 Aug 2003 *Sedation protocol (only if needed for exam) Butorphanol 50mg Azaperone 60mg (IM) *Reversal* Naltrexone 250mg -Bleed 2x weekly for P4 assay	2) Reproductive exams -Collect post breeding samples from females for sperm & motility
3) Diet -Look for Purina Equine Senior -3kg Equine Senior daily (for Hygain add water) -Monitor gas production -Hand feed as needed -Body weight twice weekly at time of blood collection				3) Start crate training for transfer to SRS Way Kambas

Rhinos' Breeding Dates at Sg. Dusun, 2000 – 2003.

Date(s)	Rhinos	Remarks
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	Intrromission 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 intrromission.
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

Date(s)	Rhinos	Remarks
18/01/02	Mas Merah x Ara	Bred for 35 minutes
04/04/02	Seputeh x Ara	Bred for 40 minutes
26/04/02	Seputeh x Ara	Bred for 15 & 35 minutes
17/05/02	Seputeh x Ara	Bred for 25 minutes
06/07/02	Seputeh x Ara	Bred for 25 minutes
29/09/02	Seputeh x Ara	Bred for 16 minutes
19/10/02	Seputeh x Ara	Bred for 15 minutes
20/10/02	Seputeh x Ara	Bred for 23 minutes
22/10/02	Rima x Ara	Bred for 28 minutes
10/11/02	Seputeh x Ara	Bred for 30 minutes
04/12/02	Seputeh x Ara	Bred for 52 minutes
17/12/02	Rima x Ara	Bred for 7 & 15 minutes
20/01/03	Rima x Ara	Bred for 25 minutes
21/01/03	Rima x Ara	Bred for 17 minutes
04/02/03	Seputeh x Ara	Bred for 10 minutes
05/02/03	Seputeh x Ara	Bred for 52 minutes
23/02/03	Rima x Ara	Bred for 19 minutes
12/04/03	Rima x Ara	Bred for 51 minutes
11/06/03	Seputeh x Ara	Bred for 12 minutes
07/07/03	Seputeh x Ara	Bred for 28 minutes
31/07/03	Seputeh x Ara	Bred for 43 minutes
23/08/03	Seputeh x Ara	Bred for 56 minutes