

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

MONTHLY REPORT

JULY 2000

BY

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&

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INTRODUCTION

The daily introduction of Shah and the two females: Panjang and Mas Merah took place throughout the month as well as the blood collection program. The introduction was done every morning around 8.00 a.m. while the blood collection was started as soon as the procedure finished. Panjang was mixed with Shah from 1/7/00 to 6/7/00 followed by mixing Shah with Mas Merah from 7/7/00 until end of the month. Blood collection was done from all five females and each individual response well to the procedure except for Seputeh. Apart from that, vaginal cytology was carried out on three females; Mas Merah, Rima and Panjang.

DAILY HUSBANDRY

A) Night stall

Daily work

The night stalls were managed by Mohd Noor and Shariff. However, the two rangers, Shariff and Umor came at 7.00 a.m. to clean the night stalls prior to the daily introduction. They also prepared the browse for Shah and cutting the fruits to small pieces for the introduction procedure. The females were also fed with concentrate prior to the introduction. After the mixing, Mohd Noor and Shariff will help in taking blood and vaginal cytology collection programs. Usually they will alternately preparing the fruits and feed the rhinos during the two procedures.

The food supply usually arrived around 9.00 a.m. The two rangers then will weigh the browse and fruits and cleaned them before giving to the rhinos. About 40 kg of browses consisting of *Macaranga* sp., *Artocarpus* sp., and *Ficus* sp. were given daily. The produces amounted about 7 kg including papaya, banana and sweet potatoes were also given daily to each rhino except for Monday and Thursday. The concentrate was given about 1.5kg every morning.

The rhinos

Each rhino, a male and five females were put individually in the night stalls and the paddocks. These rhinos were released into the paddock early morning for the night stalls cleaning. Then, the fecal will be collected before the cleaning works. After cleaning, browses were put in the feed trough and the night stalls' doors will be open to let the rhinos in for their morning meal. The concentrate then was given to each rhino. However, if bleeding procedure is on schedule, the rhinos will not be given their browse before bleeding. Any observation made was recorded in a daily workbook for each rhino.

Breeding paddock

Daily introduction of Shah and the females; Mas Merah or Panjang was started at 8.00 a.m. daily, involving all personnel including the rangers. While mixing Shah with Mas Merah, the male was kept eating in paddock 1 while releasing the female from paddock 2 and guided her into paddock 1. As for Panjang, she was released from the night stall 1 into paddock 1 while Shah was given browse and fruits. (Figure 1)

Fruits, usually banana and papaya were used to avoid any fighting. The reaction of the rhinos towards each other and their behaviour observed during the daily introduction were summarised in Table 1.

Figure 1: The Night stall (NS) and Paddocks (numbered)

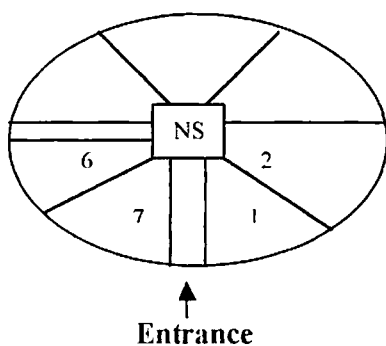


Table 1: Daily Introduction of Shah with Mas Merah and Panjang, July 2000

Date	Remarks
1/7/00	Panjang went straight to the area where Shah was eating, looking for food. No response from Shah when Panjang approached. Both rhinos were eating side by side and no breeding behavior observed. Separated after 10 minutes.
4/7/00	Shah was eating when Panjang entered paddock 1. Panjang went straight to the feeding area where Shah was. No response from Shah although both rhinos were side by side. He was busy eating. Shah sniffed Panjang but continue to eat.
5/7/00	Shah was busy eating when approached by Panjang. Shah sniffed Panjang but no further response. Both rhinos were busy eating side by side. Panjang try to chase away Shah and he looked annoyed. Separate before the fights begin.
6/7/00	Panjang approached the feeding area when released into paddock 1. Shah was busy eating and ignored Panjang. Shah sniffed Panjang but no further response. Both rhinos were busy eating side by side.
7/7/00	Mas Merah was mixed with Shah starting today. She was released into paddock 1 from the gate in paddock 2. No response from both rhinos when they notice each other. Shah kept eating while Mas Merah went for food. Both rhinos were eating side by side.
8/7/00	Mas Merah went to the feeding area looking for fruits when released. No response from Shah when Mas Merah approached. Both rhinos were side by side eating.
10/7/00	Mas Merah went to the gate when released into paddock 2. She was called into paddock 1. She went straight to the feeding area where Shah was busy eating. Shah sniffed for a while when Mas Merah was near him but continue eating. Head butting was observed and both rhinos were separated to avoid fighting.
11/7/00	Released Mas Merah from night stall 2. She went to the gate and entered paddock 1. She approached the feeding area while Shah was eating fruits. Shah sniffed Mas Merah but no further response.
12/7/00	Mas Merah was released into paddock 2 and she went to gate and entered paddock 1. She approached the feeding area while Shah was busy eating. No response from Shah and both rhinos were eating facing each other about 5 feet apart.

Date	Remarks
13/7/00	Mas Merah entered paddock 1 after releasing her from night stall 2. She went straight to feeding area. Shah was busy eating and ignored Mas Merah when he saw her. Both rhinos were side by side eating. No further response.
14/7/00	Mas Merah was released from night stall 2. She entered paddock 1 where Shah was busy eating. She approached the feeding area and Shah was observed sniffing. Head butting was observed and Shah was trying to use his teeth against Mas Merah. However, he stopped upon calling by the keeper. Separate the rhinos to avoid fighting.
15/7/00	Shah went to Mas Merah when she approached the feeding area. Mas Merah blows and Shah continued eating. No further response and both rhinos busy eating facing each other. about 5 feet apart.
17/7/00	Released Mas Merah from night stall 2. She went to the gate and entered paddock 1. She approached the feeding area while Shah was eating fruits. Shah sniffed Mas Merah but no further response.
18/7/00	Mas Merah was released from night stall 2. She entered paddock 1 where Shah was busy eating. She approached the feeding area and Shah was observed sniffing. Head butting was observed and Shah was trying to use his teeth against Mas Merah. However, he stopped upon calling by the keeper. Separate the rhinos to avoid fighting.
19/7/00	Mas Merah went to the feeding area looking for fruits when released. No response from Shah when Mas Merah approached. Both rhinos were side by side eating.
20/7/00	Mas Merah was released into paddock 2 and she went to gate and entered paddock 1. She approached the feeding area while Shah was busy eating. No response from Shah and both rhinos were eating facing each other about 5 feet apart.
21/7/00	Mas Merah was released from night stall 2 and she went straight to gate and enter paddock 1. Shah was eating when approached by Mas Merah. Both rhinos were eating side by side and sometimes facing each other. No other response.
22/7/00	Shah was eating when Mas Merah was released into the paddock. Mas Merah went straight to Shah and started to eat near him. No response from the male and he continued to eat. Shah sniffed Mas Merah but no further response. Both rhinos were eating facing each other.

Date	Remarks
24/7/00	Mās Merah went to the gate upon calling by the keeper and enter paddock 1. Shah was busy eating when she approached him. Head butting was observed but the male returned to his fruits after a while. They were eating side by side.
25/7/00	Mas Merah entered paddock 1 and went straight to the feeding area. Shah was eating when she approached the area. Food was not given for about 5 minutes and both rhinos were observed busy looking for fruits. Shah sniffed Mas Merah but no further response. He was trying to bite the female and Mas Merah blows as a response. Fruits then were given again to avoid fighting.
26/7/00	Mas Merah went straight to feeding area when released into paddock 1. Shah was eating and ignored her. Stopped giving fruits for a while. No breeding behaviur was observed. Both rhinos were eating the browse provided. Shah sniffed Mas no other response.
27/7/00	Mas Merah went to the gate upon calling by the keeper and enter paddock 1. Shah was busy eating when she approached him. Head butting was observed but the male returned to his fruits after a while. They were eating side by side.

B) Ten Acres Enclosure

Daily Work

After the introduction, Adam and Umor inspect the electric fencing. The voltage for the fencing is always maintained around 7.0 kV. During the inspection, the fence will be cleaned from any foreign objects such as spider web, dried leaves or creepers to avoid short circuit. The daily inspection is also to detect any damage to the fence that could be due to any broken branch or tree.

After the daily inspection, the rhinos were given their morning meal; the horse pellets. 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. Fruits or produce were given in the afternoon.

Rhinos Observation

This month, Ara was mixed with the two females: Rima and Seputeh based on the females predicted oestrus cycle. The observation of the mixing was summarised on Table 2 below.

Table 2: Rhino Mixing Observation in the 10 Acres Enclosure for July '00

Period	Rhinos	Observation
1/7 - 3/7	Ara + Rima	No mating behaviour observed
4/7 - 6/7	Ara + Seputeh	Mounting was observed on 4/7 after 5 minutes of introduction.
6/7 - 9/7	Ara + Rima	Ara was observed following Rima on the 8/7. This could be a positive sign of oestrus.
10/7 - 31/7	Ara alone	

HEALTH AND TREATMENT

Generally, the health of all rhinos is considered good but some of them suffered lacerations, minor wounds, and also weight loss problem.

a) Minah

Minah was having weight loss problem on June 2000. She was reluctant to eat by herself and her feeding behaviour could be considered not normal. She was force fed and treated for malnutrition. The browse was soaked in the water containing vitamins and mineral supplement before feeding her. Obimin pill was also prescribed (1/7 to 17/7) to increase her appetite. She has gradually recovered and on the 17/7/00, her weight has increase to 540kg. Force feeding and obimin pill has been stopped but she was given molasses block about 100 gram/day. However, she will be closely monitored to avoid the same problem again.

b) Rima and Seputeh

These two rhinos were observed having laceration wounds after mixing them with the male. Wounds were observed at the flank, thigh and at the tail area. The wounds were cleaned and treated with iodine and Gusanex spray and resolved three days later.

c) Panjang

Her June's blood results showed that her red blood cells (RBC) and haemoglobin were low. Her body weight was dropped by 13kg on 6/7/00. She was given Obimin pill daily starting from 5/7 to 17/7 to increase her appetite. Another problem that could be related to her weight loss is her excessive wallowing behaviour. She stayed in the wallow during the day and did not go into her night stall for feeding. She was also given molasses; high-energy supplement to maintain her condition.

ROUTINE PROGRAMMES

A) Weighing Procedure

This programme was carried out on monthly basis for each of the rhinos. It was done on 19/7/00 this month and the result is tabulated in the Table 3.

Table 3: Rhino Body Weight on July 2000

<i>Rhino ID</i>	<i>Weight (kg) - June</i>	<i>Weight (kg) - July</i>
Rima	563	569
Mas Merah	620	592
Minah	520	544
Seputeh	795	741
Panjang	552	539
Shah	576	570
Ara	608	In ten acres enclosure

B) Bleeding Procedure

a) Blood Collection

The collection of the blood was continued throughout the month. The collection was made from the tail (coccygeal vein or artery) since all females adapted very well to the method. The samples have been sent to UPM for analysis once in two week. The observation made throughout the procedure was summarized in Table 4.

b) Blood results

Blood samples have been sent to UPM hormone lab for progesterone hormone analysis using the RIA kit. Apart from that, samples have been sent to haematology lab for basic blood data. However, only the result of the blood parameter has been received and it was attached below.

C) Vaginal Cytology

a) Samples collection

The procedure has been carried out on three females based on the discussion made in the SRCC – Committee meeting this month. Samples collection was made on Rima, Mas Merah and Panjang twice a week subsequently with the blood collection procedure. Sometimes, samples collection was made more than that if necessary depending on the results obtained for the week. However, Dr. Zainal has collected some samples from on Minah and Seputeh. The sample collection for the vaginal cytology is attached in the report.

D) Fecal Analysis

Samples have been sent to UPM once in two week and they will be analysed by Mr. Yap using both the Toronto Zoo and Dr. Franz method. The result will be used to determine which of the method will be used in future analysing.

Table 4: Blood Collection from the Rhinos on July 2000

Date	Rhino ID	Area taken	Remarks
3/7/00	Minah Mas Merah Minah Rima Seputih	Tail Tail Tail Tail Tail	Dr. Zainal took the blood from all females through the tail.
6/7/00	Rima Panjang Mas Merah Minah Seputih	Tail Tail Ear & Tail Leg Tail	Get blood samples from all females. The rhinos seem very cooperative. As for Seputih, she tolerates well by feeding her with jackfruits.
10/7/00	Minah Mas Merah Rima Panjang Seputih	Leg & Tail Ear & Tail Tail Tail Tail	Get blood samples from all females from the tail. Tried from the ear and leg from Mas & Minah but the rhinos were uncooperative.
13/7/00	Minah Mas Merah Rima Panjang Seputih	Leg & Tail Ear & Tail Tail Tail Tail	Get blood samples from all females except for Seputih. Tried from leg and ear from Minah & Mas but the rhinos did not cooperate. Seputih is very restless and moves a lot.
14/7/00	Seputih	Tail	Blood samples were taken by Dr. Zainal.
17/7/00	Rima Panjang Mas merah Minah Seputih	Tail Tail Tail Tail Tail	Get some samples from all females except for Seputih. She was uncooperative.
20/7/00	Rima Panjang Minah Mas Merah Seputih	Tail Tail Leg & Tail Ear & Tail Tail	Get some samples from all females except for Seputeh. Tried on Seputeh until out of fruits.

Date	Rhino ID	Area taken	Remarks
21/7/00	Seputih	Tail	Get some samples and the animal seems relax.
24/7/00	Minah Mas Merah Panjang Rima Seputih	Tail Tail Tail Tail Tail	Get blood samples from all females through tail. The rhinos are very cooperative.
27/7/00	Rima Minah Mas Merah Panjang Seputih	Tail Tail Tail Tail Tail	Get samples from all females by Dr. Zainal via tail.
31/7/00	Rima Minah Mas Merah Panjang Seputih	Tail Tail Tail Tail Tail	Get samples from all females by Dr. Zainal via tail.