

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

MONTHLY REPORT

JULY 2001

BY

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&

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INTRODUCTION

Breeding involving a male and two females was observed this month. Ara bred Seputeh on three consecutive days: on 21/7/01, 22/7/01 and also on 23/7/01 respectively. He also bred Rima on the 30/7/01.

As for Panjang, it was decided that she would be left alone at the moment. Vaginal swabs from her and also Minah were sent to Veterinary Research Institute (VRI), Ipoh for bacteriology and sensitivity test. Blood was also sent for complete blood count (CBC).

The daily introduction between Ara and Mas Merah was still conducted but no positive response was observed. The pairing between Shah and Minah also did not give a desire result. The procedure was carried out every morning and observation was recorded. As for the bleeding procedure, it is still carried out twice weekly on all females for progesterone analysis. However, blood will be collected once a week on the bred females.

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

1) Daily Introduction

Mas Merah was paired with Ara for the daily introduction. However, no positive behaviour was observed during the procedure. The female usually vocalised a lot when the male approached or trailing her. Occasionally, head butting was observed and then the female will either walk or run away from the male.

As for Minah, she was paired with Shah until the first week of the month and it was decided not to continue the procedure. There was no positive behaviour observed but the two rhinos tend to be very friendly to each other. However, the female will avoid the male when he wanted to attack her and will keep her distance. The male on the other hand tends to look for fruits rather than to follow the female.

2) Breeding Introduction

Rima was expected to come into estrus on 9/7/01 and she was paired with the two males; Ara and Shah in the morning and afternoon. The female did not allow Ara to mount her but instead presented herself to Shah. Trailing activities were observed when the female was paired with Ara but there was not much response from Shah towards the female. The female was paired with male on the two following days and the same result was obtained. It was decided that her estrus cycle was missed.

The first breeding of the month occurred between Ara and Seputeh. The female was bred three days on the 21/7/01, 22/7/01 and 23/7/01 consecutively. The mating took about 30, 23 and 30 minutes respectively. Seputeh was mixed with Ara in the afternoon 21 days after her last breeding and was bred successfully. Later she was paired with the male in the morning and also successfully bred.

As for Rima, she was paired with Ara in the morning on the 30/7/01 and Ara mounted for 12 minutes. However, the pair was separated when the male looked exhausted after a few attempts of mounting. It was decided to pair her with Shah in the afternoon. Head butting was observed during the initial stage of mixing Rima and Shah. However, the female will presented herself after a few minutes of the head butting. No positive response observed from the male. Unfortunately, fighting occurred when the female kept provoking the male and the rhinos were separated. Later she was paired with Ara and bred for 35 minutes. The male chased the female after the breeding and she suffered some lacerations and cut wounds and was treated.

3) Bleeding Program and Blood Profile

Blood collection was done twice weekly on all females for progesterone profile. However, blood was collected once a week on bred female. The progesterone profile for each female was attached. Seputeh and Rima had a regular estrus cycle compared to Mas Merah, which had an irregular one. Minah and Panjang still had a low level of progesterone.

Once a month, blood will be collected on all rhinos for health check and the result showed that all rhinos are in a good condition.

B) HEALTH STATUS

Generally, all rhinos are in the good condition. Weighing program could not be carried out since the weighing machine is at Zoo Melaka. The machine will be brought back to the center as soon it has been repaired.

As for the general health, all rhinos looked healthy except for Minah. She has lost some body weight and her appetite has dropped slightly. However, force-feeding was carried out on her and her condition looked normal.

C) FEEDING

The feeding program had no changes. A contractor supplied the browses and fruits and delivered them around 9.30a.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, July 2001

| Date | Rhino ID | Area taken | Remarks |
|-------------|---|--|---|
| 02/07/01 | Panjang Seputeh Mas Merah | Tail Tail Tail | Blood for P4 analysis. |
| 05/07/01 | Rima Panjang Mas Merah Minah | Tail Tail Tail Tail | Blood for P4 analysis. |
| 09/07/01 | Rima Mas Merah Panjang | Tail Tail Tail | Get blood samples from all females. The rhinos seem very cooperative. |
| 11/07/01 | Rima Mas Merah Minah | Tail Tail Tail | Get samples via tail from all females. |
| 17/07/01 | Rima Mas Merah Panjang Seputeh | Tail Tail Tail | Samples were taken from all females for P4 analysis. |
| 19/07/01 | Mas Merah Panjang Rima Seputeh Minah Ara Shah | Tail Tail Tail Tail Tail Tail | Samples were taken from the females for P4 analysis. Blood from male is used for testosterone analysis. |
| 23/07/01 | Minah Panjang Mas Merah Rima Seputeh Ara Shah | Tail Tail Tail Tail Tail Tail | Samples were taken from the females for P4 analysis. Blood from male is used for testosterone analysis. |
| 26/07/01 | Panjang Minah Rima Mas Merah Seputeh Ara Shah | Tail Tail Tail Tail Tail Tail | Samples were taken from the females for P4 analysis. Blood from male is used for testosterone analysis. |
| 27/06/01 | Panjang Seputeh Mas Merah Rima Ara Shah | Tail Tail Tail Tail Tail Tail | Samples were taken from the females for P4 analysis. Blood from male is used for testosterone analysis. |

Table 2: The Pairing Program of the Ara and Mas Merah, July 2001

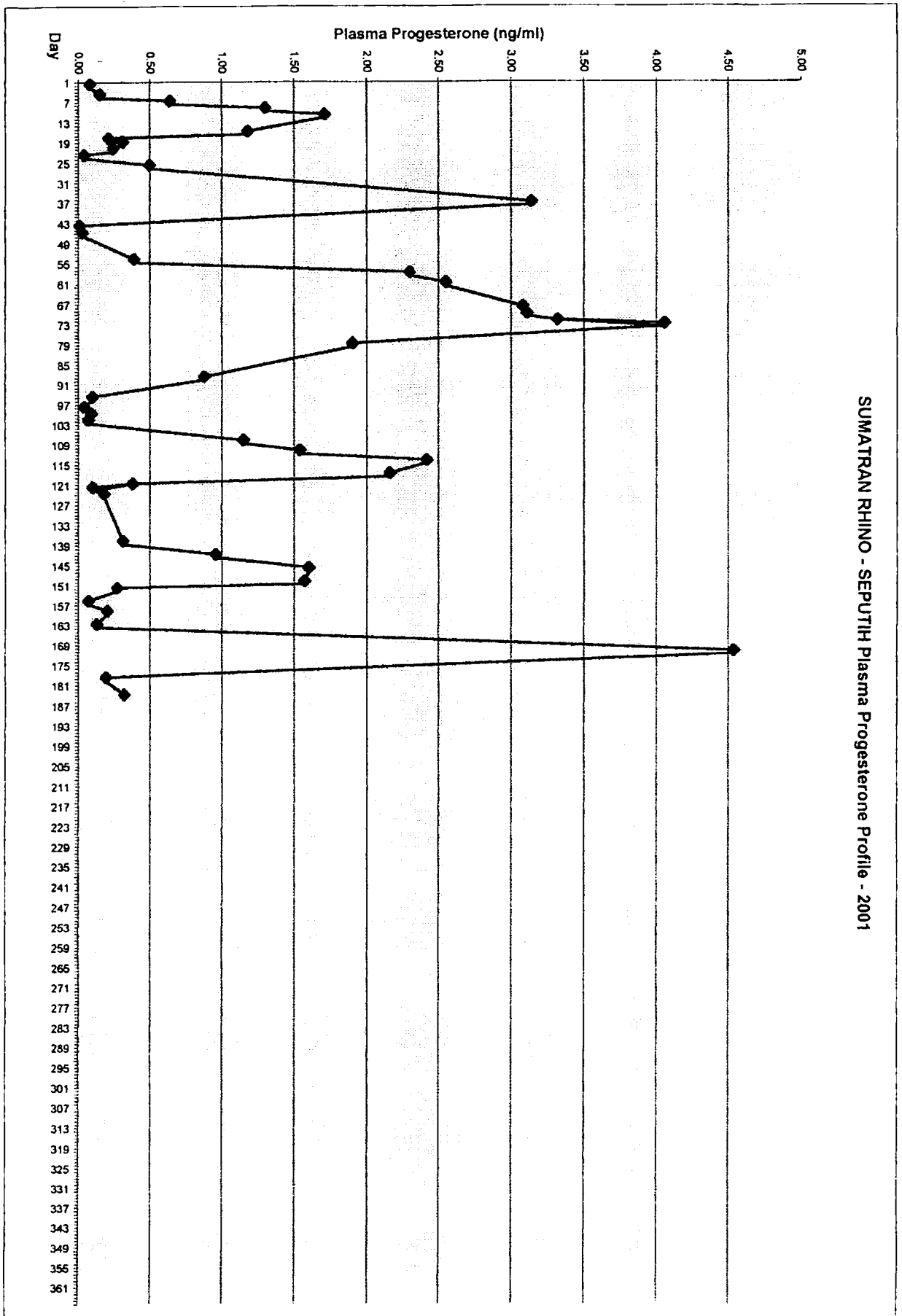
| Date | Remarks |
|----------|--|
| 02/07/01 | Mix Mas Merah & Ara. The female blew and vocalized a lot. She looked afraid to the male. Separated after 5 minutes. |
| 03/07/01 | Mix Mas & Ara around 9.00 o'clock. She blew and vocalized a lot and looked afraid to the male. |
| 04/07/01 | Mix Mas Merah & Ara in the morning. The female approached the feeding area while the male was busy eating. She started to eat and vocalized but no response from the male. However, she looked afraid to the male and walked away. |
| 05/07/01 | The male was busy eating when Mas approached him. The female blew and started to eat facing each other. She also vocalized but no response from the male. Then she walked away from the male. |
| 06/07/01 | Mas Merah entered the paddock and she ran away from the male when she saw him. She looked afraid to the male and was separated. |
| 07/07/01 | The female was eating when the male approached her. Both rhinos were eating side by side but the female started to blow and vocalize. She walked away and the male followed. The female vocalized and ran away. |
| 10/07/01 | Mas Merah was eating when Ara approached her from the back. She blew and vocalized when she saw the male. Then she walked away but the male ignored her and kept eating. She went back to the feeding area and head butting occurred. Mas vocalized and the rhinos were separated. |
| 11/07/01 | Ara approached Mas Merah from the back while the female was eating. He sniffed her but no further response. The female started to blow and vocalize when she saw the male and then walked away from him. |
| 13/07/01 | Mas Merah was busy eating when Ara approached her from the back. As soon as she realized the male, she started to blow and vocalized but kept eating. Later she walked away from the feeding area. |
| 14/07/01 | Mas Merah was busy eating when Ara approached her. Both rhinos were eating together but the Mas Merah started to vocalize and looked afraid. She walked away from the male. Ara try to follow but Mas vocalized a lot and started to run away from the male. |
| 15/07/01 | Mas vocalized a lot when Ara approached her. She blew and started to challenge the male. Head butting observed and the rhinos were separated. |
| 16/07/01 | Mas Merah vocalized and ran away from the male when she was approached from behind. She looked afraid and kept vocalized but no response from the male. Separated after five minutes. |
| 17/07/01 | Ara approached Mas when she was eating. She walked away and the male started to follow. Head butting observed and the female vocalized a lot. |
| 18/07/01 | Mas blew when Ara approached her. Then she ran away from the male and vocalizing a lot. The male followed but the female kept avoiding him. |
| 19/07/01 | Mas Merah was eating when Ara approached her. She vocalized and blew and then walked away from the male. She ran away when the male started to follow her. |
| 20/07/01 | Mas Merah vocalized and ran away from the male when she was approached from behind. She looked afraid and kept vocalized but no response from the male. Separated after five minutes. |
| 25/07/01 | Ara approached Mas when she was eating. She walked away and the male started to follow. Head butting observed and the female vocalized a lot. |

Table 3: The Daily Introduction of Shah and Minah, July 2001

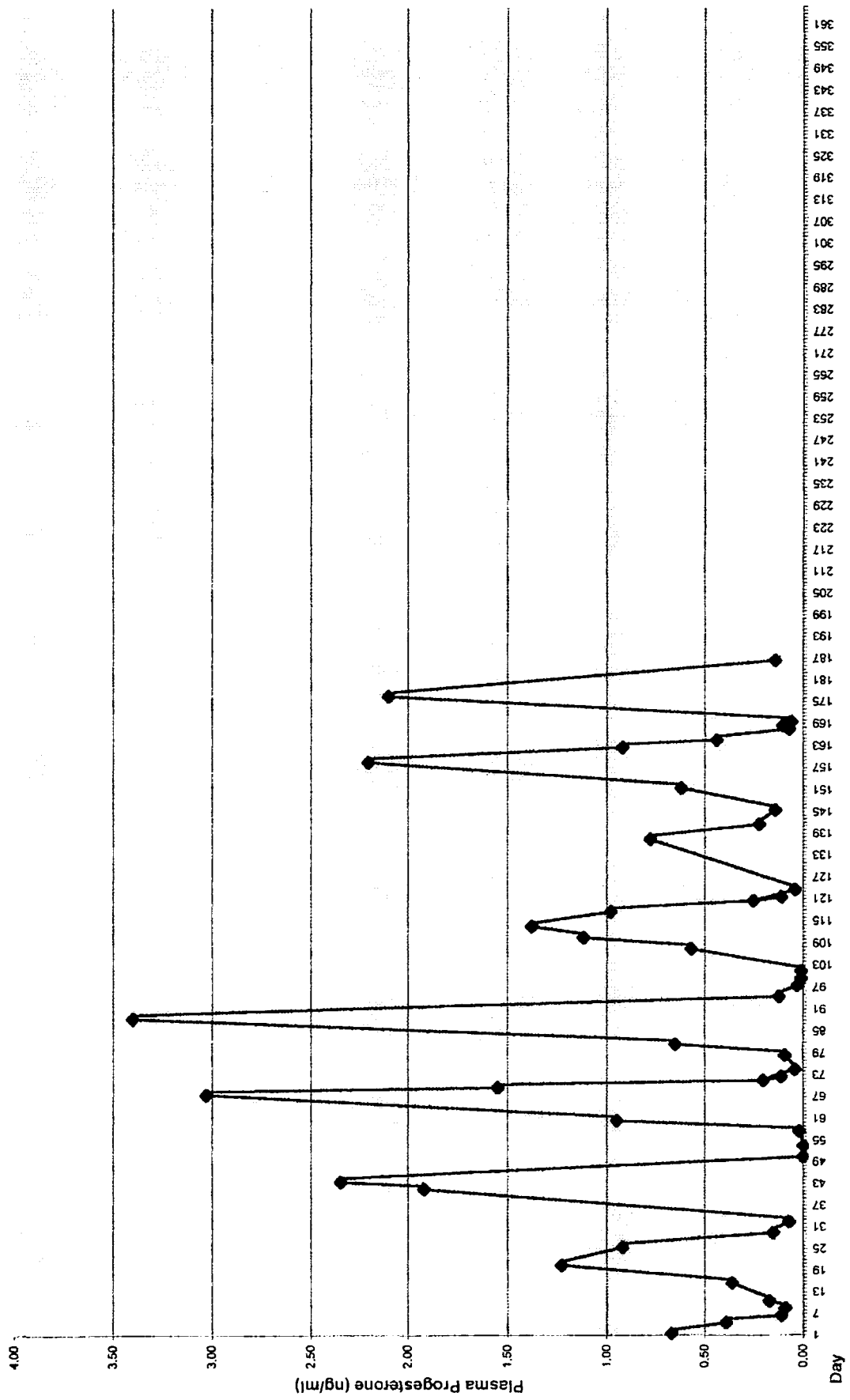
| Date | Remarks |
|-------------|---|
| 02/07/01 | Minah went straight to feeding area looking for fruits. No response from Shah when she approached. Both rhinos were side by side eating and then Minah walked away. No positive response observed. |
| 03/07/01 | Minah approached the feeding area when released into paddock. Shah was busy eating and ignored Minah. Shah sniffed Minah but no further response. Both rhinos were busy eating side by side. |
| 04/07/01 | Minah approached the feeding area when released into paddock. No response from both rhinos when they notice each other. |
| 06/07/01 | Minah approached the feeding and Shah blew when he saw her. Head butting occurred and the female walked away. No response from Shah. Minah moved a lot but Shah was standing at the feeding area begging for fruits. No positive response observed. Shah tried to attack Minah and the rhinos were separated. |
| 07/07/01 | Minah went straight to the feeding area while Shah was busy eating. Shah blew and tried to attack Minah when she approached him but the female moved away. Head butting occurred and the female turned away. No positive response observed and the rhinos were separated. |

| 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-Apr-01 | 91 | | 1-Apr-01 | 91 | | 1-Apr-01 | 91 | | | 1-Apr-01 | 91 | | 1-Apr-01 | 91 | |
| 2-Apr-01 | 92 | 0.88 | 2-Apr-01 | 92 | 0.23 | 2-Apr-01 | 92 | 1.12 | | 2-Apr-01 | 92 | | 2-Apr-01 | 92 | |
| 3-Apr-01 | 93 | | 3-Apr-01 | 93 | | 3-Apr-01 | 93 | | | 3-Apr-01 | 93 | | 3-Apr-01 | 93 | |
| 4-Apr-01 | 94 | | 4-Apr-01 | 94 | | 4-Apr-01 | 94 | 1.44 | | 4-Apr-01 | 94 | 0.12 | 4-Apr-01 | 94 | 0.10 |
| 5-Apr-01 | 95 | 0.73 | 5-Apr-01 | 95 | 0.27 | 5-Apr-01 | 95 | | | 5-Apr-01 | 95 | | 5-Apr-01 | 95 | |
| 6-Apr-01 | 96 | | 6-Apr-01 | 96 | | 6-Apr-01 | 96 | | | 6-Apr-01 | 96 | | 6-Apr-01 | 96 | |
| 7-Apr-01 | 97 | | 7-Apr-01 | 97 | | 7-Apr-01 | 97 | | | 7-Apr-01 | 97 | 0.03 | 7-Apr-01 | 97 | 0.04 |
| 8-Apr-01 | 98 | | 8-Apr-01 | 98 | | 8-Apr-01 | 98 | | | 8-Apr-01 | 98 | | 8-Apr-01 | 98 | |
| 9-Apr-01 | 99 | 0.32 | 9-Apr-01 | 99 | 0.16 | 9-Apr-01 | 99 | 1.49 | | 9-Apr-01 | 99 | 0.01 | 9-Apr-01 | 99 | 0.09 |
| 10-Apr-01 | 100 | | 10-Apr-01 | 100 | | 10-Apr-01 | 100 | | | 10-Apr-01 | 100 | | 10-Apr-01 | 100 | |
| 11-Apr-01 | 101 | 0.33 | 11-Apr-01 | 101 | | 11-Apr-01 | 101 | 0.96 | | 11-Apr-01 | 101 | 0.01 | 11-Apr-01 | 101 | 0.07 |
| 12-Apr-01 | 102 | | 12-Apr-01 | 102 | | 12-Apr-01 | 102 | | | 12-Apr-01 | 102 | | 12-Apr-01 | 102 | |
| 13-Apr-01 | 103 | | 13-Apr-01 | 103 | | 13-Apr-01 | 103 | | | 13-Apr-01 | 103 | | 13-Apr-01 | 103 | |
| 14-Apr-01 | 104 | | 14-Apr-01 | 104 | | 14-Apr-01 | 104 | | | 14-Apr-01 | 104 | | 14-Apr-01 | 104 | |
| 15-Apr-01 | 105 | | 15-Apr-01 | 105 | | 15-Apr-01 | 105 | | | 15-Apr-01 | 105 | | 15-Apr-01 | 105 | |
| 16-Apr-01 | 106 | | 16-Apr-01 | 106 | | 16-Apr-01 | 106 | | | 16-Apr-01 | 106 | | 16-Apr-01 | 106 | |
| 17-Apr-01 | 107 | 0.66 | 17-Apr-01 | 107 | 0.08 | 17-Apr-01 | 107 | 0.07 | | 17-Apr-01 | 107 | 0.57 | 17-Apr-01 | 107 | 1.15 |
| 18-Apr-01 | 108 | | 18-Apr-01 | 108 | | 18-Apr-01 | 108 | | | 18-Apr-01 | 108 | | 18-Apr-01 | 108 | |
| 19-Apr-01 | 109 | | 19-Apr-01 | 109 | | 19-Apr-01 | 109 | | | 19-Apr-01 | 109 | | 19-Apr-01 | 109 | |
| 20-Apr-01 | 110 | 0.62 | 20-Apr-01 | 110 | 0.11 | 20-Apr-01 | 110 | 0.13 | | 20-Apr-01 | 110 | 1.12 | 20-Apr-01 | 110 | 1.54 |
| 21-Apr-01 | 111 | | 21-Apr-01 | 111 | | 21-Apr-01 | 111 | | | 21-Apr-01 | 111 | | 21-Apr-01 | 111 | |
| 22-Apr-01 | 112 | | 22-Apr-01 | 112 | | 22-Apr-01 | 112 | | | 22-Apr-01 | 112 | | 22-Apr-01 | 112 | |
| 23-Apr-01 | 113 | 0.61 | 23-Apr-01 | 113 | 0.06 | 23-Apr-01 | 113 | 0.06 | | 23-Apr-01 | 113 | 1.38 | 23-Apr-01 | 113 | 2.42 |
| 24-Apr-01 | 114 | | 24-Apr-01 | 114 | | 24-Apr-01 | 114 | | | 24-Apr-01 | 114 | | 24-Apr-01 | 114 | |
| 25-Apr-01 | 115 | | 25-Apr-01 | 115 | | 25-Apr-01 | 115 | | | 25-Apr-01 | 115 | | 25-Apr-01 | 115 | |
| 26-Apr-01 | 116 | | 26-Apr-01 | 116 | | 26-Apr-01 | 116 | | | 26-Apr-01 | 116 | | 26-Apr-01 | 116 | |
| 27-Apr-01 | 117 | 0.36 | 27-Apr-01 | 117 | 0.13 | 27-Apr-01 | 117 | 0.18 | | 27-Apr-01 | 117 | 0.98 | 27-Apr-01 | 117 | 2.16 |
| 28-Apr-01 | 118 | | 28-Apr-01 | 118 | | 28-Apr-01 | 118 | | | 28-Apr-01 | 118 | | 28-Apr-01 | 118 | |
| 29-Apr-01 | 119 | | 29-Apr-01 | 119 | | 29-Apr-01 | 119 | | | 29-Apr-01 | 119 | | 29-Apr-01 | 119 | |
| 30-Apr-01 | 120 | 0.46 | 30-Apr-01 | 120 | 0.11 | 30-Apr-01 | 120 | 0.19 | | 30-Apr-01 | 120 | 0.25 | 30-Apr-01 | 120 | 0.38 |
| 1-May-01 | 121 | | 1-May-01 | 121 | | 1-May-01 | 121 | | | 1-May-01 | 121 | 0.11 | 1-May-01 | 121 | 0.10 |
| 2-May-01 | 122 | | 2-May-01 | 122 | | 2-May-01 | 122 | | | 2-May-01 | 122 | | 2-May-01 | 122 | |
| 3-May-01 | 123 | 0.11 | 3-May-01 | 123 | 0.28 | 3-May-01 | 123 | 0.55 | | 3-May-01 | 123 | 0.04 | 3-May-01 | 123 | 0.18 |
| 4-May-01 | 124 | | 4-May-01 | 124 | | 4-May-01 | 124 | | | 4-May-01 | 124 | | 4-May-01 | 124 | |
| 5-May-01 | 125 | | 5-May-01 | 125 | | 5-May-01 | 125 | | | 5-May-01 | 125 | | 5-May-01 | 125 | |
| 6-May-01 | 126 | | 6-May-01 | 126 | | 6-May-01 | 126 | | | 6-May-01 | 126 | | 6-May-01 | 126 | |
| 7-May-01 | 127 | | 7-May-01 | 127 | | 7-May-01 | 127 | | | 7-May-01 | 127 | | 7-May-01 | 127 | |
| 8-May-01 | 128 | | 8-May-01 | 128 | | 8-May-01 | 128 | | | 8-May-01 | 128 | | 8-May-01 | 128 | |
| 9-May-01 | 129 | | 9-May-01 | 129 | | 9-May-01 | 129 | | | 9-May-01 | 129 | | 9-May-01 | 129 | |
| 10-May-01 | 130 | | 10-May-01 | 130 | | 10-May-01 | 130 | | | 10-May-01 | 130 | | 10-May-01 | 130 | |
| 11-May-01 | 131 | | 11-May-01 | 131 | | 11-May-01 | 131 | | | 11-May-01 | 131 | | 11-May-01 | 131 | |
| 12-May-01 | 132 | | 12-May-01 | 132 | | 12-May-01 | 132 | | | 12-May-01 | 132 | | 12-May-01 | 132 | |
| 13-May-01 | 133 | | 13-May-01 | 133 | | 13-May-01 | 133 | | | 13-May-01 | 133 | | 13-May-01 | 133 | |
| 14-May-01 | 134 | | 14-May-01 | 134 | | 14-May-01 | 134 | | | 14-May-01 | 134 | | 14-May-01 | 134 | |
| 15-May-01 | 135 | | 15-May-01 | 135 | | 15-May-01 | 135 | | | 15-May-01 | 135 | | 15-May-01 | 135 | |
| 16-May-01 | 136 | | 16-May-01 | 136 | | 16-May-01 | 136 | | | 16-May-01 | 136 | | 16-May-01 | 136 | |
| 17-May-01 | 137 | 1.42 | 17-May-01 | 137 | 0.18 | 17-May-01 | 137 | 0.65 | | 17-May-01 | 137 | 0.78 | 17-May-01 | 137 | 0.31 |
| 18-May-01 | 138 | | 18-May-01 | 138 | | 18-May-01 | 138 | | | 18-May-01 | 138 | | 18-May-01 | 138 | |
| 19-May-01 | 139 | | 19-May-01 | 139 | | 19-May-01 | 139 | | | 19-May-01 | 139 | | 19-May-01 | 139 | |
| 20-May-01 | 140 | | 20-May-01 | 140 | | 20-May-01 | 140 | | | 20-May-01 | 140 | | 20-May-01 | 140 | |
| 21-May-01 | 141 | 1.80 | 21-May-01 | 141 | 0.35 | 21-May-01 | 141 | 0.43 | | 21-May-01 | 141 | 0.22 | 21-May-01 | 141 | 0.96 |
| 22-May-01 | 142 | | 22-May-01 | 142 | | 22-May-01 | 142 | | | 22-May-01 | 142 | | 22-May-01 | 142 | |
| 23-May-01 | 143 | | 23-May-01 | 143 | | 23-May-01 | 143 | | | 23-May-01 | 143 | | 23-May-01 | 143 | |
| 24-May-01 | 144 | | 24-May-01 | 144 | | 24-May-01 | 144 | | | 24-May-01 | 144 | | 24-May-01 | 144 | |
| 25-May-01 | 145 | 0.88 | 25-May-01 | 145 | 0.16 | 25-May-01 | 145 | 0.16 | | 25-May-01 | 145 | 0.14 | 25-May-01 | 145 | 1.60 |
| 26-May-01 | 146 | | 26-May-01 | 146 | | 26-May-01 | 146 | | | 26-May-01 | 146 | | 26-May-01 | 146 | |
| 27-May-01 | 147 | | 27-May-01 | 147 | | 27-May-01 | 147 | | | 27-May-01 | 147 | | 27-May-01 | 147 | |
| 28-May-01 | 148 | | 28-May-01 | 148 | | 28-May-01 | 148 | | | 28-May-01 | 148 | | 28-May-01 | 148 | |
| 29-May-01 | 149 | 0.98 | 29-May-01 | 149 | 0.26 | 29-May-01 | 149 | 0.19 | | 29-May-01 | 149 | | 29-May-01 | 149 | 1.57 |
| 30-May-01 | 150 | | 30-May-01 | 150 | | 30-May-01 | 150 | | | 30-May-01 | 150 | | 30-May-01 | 150 | |
| 31-May-01 | 151 | 0.93 | 31-May-01 | 151 | 0.20 | 31-May-01 | 151 | 0.39 | | 31-May-01 | 151 | 0.62 | 31-May-01 | 151 | 0.27 |
| 1-Jun-01 | 152 | | 1-Jun-01 | 152 | | 1-Jun-01 | 152 | 0.37 | | 1-Jun-01 | 152 | | 1-Jun-01 | 152 | |
| 2-Jun-01 | 153 | | 2-Jun-01 | 153 | | 2-Jun-01 | 153 | | | 2-Jun-01 | 153 | | 2-Jun-01 | 153 | |
| 3-Jun-01 | 154 | | 3-Jun-01 | 154 | | 3-Jun-01 | 154 | | | 3-Jun-01 | 154 | | 3-Jun-01 | 154 | |
| 4-Jun-01 | 155 | 0.86 | 4-Jun-01 | 155 | 0.20 | 4-Jun-01 | 155 | 0.10 | | 4-Jun-01 | 155 | | 4-Jun-01 | 155 | 0.07 |
| 5-Jun-01 | 156 | | 5-Jun-01 | 156 | | 5-Jun-01 | 156 | | | 5-Jun-01 | 156 | | 5-Jun-01 | 156 | |
| 6-Jun-01 | 157 | | 6-Jun-01 | 157 | | 6-Jun-01 | 157 | | | 6-Jun-01 | 157 | | 6-Jun-01 | 157 | |
| 7-Jun-01 | 158 | 1.36 | 7-Jun-01 | 158 | 0.15 | 7-Jun-01 | 158 | | | 7-Jun-01 | 158 | 2.21 | 7-Jun-01 | 158 | 0.20 |
| 8-Jun-01 | 159 | | 8-Jun-01 | 159 | | 8-Jun-01 | 159 | | | 8-Jun-01 | 159 | | 8-Jun-01 | 159 | |
| 9-Jun-01 | 160 | | 9-Jun-01 | 160 | | 9-Jun-01 | 160 | | | 9-Jun-01 | 160 | | 9-Jun-01 | 160 | |
| 10-Jun-01 | 161 | | 10-Jun-01 | 161 | | 10-Jun-01 | 161 | | | 10-Jun-01 | 161 | | 10-Jun-01 | 161 | |
| 11-Jun-01 | 162 | 1.19 | 11-Jun-01 | 162 | | 11-Jun-01 | 162 | 0.37 | | 11-Jun-01 | 162 | 0.92 | 11-Jun-01 | 162 | 0.13 |
| 12-Jun-01 | 163 | | 12-Jun-01 | 163 | | 12-Jun-01 | 163 | | | 12-Jun-01 | 163 | | 12-Jun-01 | 163 | |
| 13-Jun-01 | 164 | 1.19 | 13-Jun-01 | 164 | 0.32 | 13-Jun-01 | 164 | 0.32 | | 13-Jun-01 | 164 | 0.44 | 13-Jun-01 | 164 | |
| 14-Jun-01 | 165 | | 14-Jun-01 | 165 | | 14-Jun-01 | 165 | | | 14-Jun-01 | 165 | | 14-Jun-01 | 165 | |
| 15-Jun-01 | 166 | | 15-Jun-01 | 166 | | 15-Jun-01 | 166 | | | 15-Jun-01 | 166 | | 15-Jun-01 | 166 | |
| 16-Jun-01 | 167 | | 16-Jun-01 | 167 | | 16-Jun-01 | 167 | | | 16-Jun-01 | 167 | 0.07 | 16-Jun-01 | 167 | |
| 17-Jun-01 | 168 | | 17-Jun-01 | 168 | | 17-Jun-01 | 168 | | | 17-Jun-01 | 168 | 0.10 | 17-Jun-01 | 168 | |
| 18-Jun-01 | 169 | 1.32 | 18-Jun-01 | 169 | | 18-Jun-01 | 169 | 0.15 | | 18-Jun-01 | 169 | 0.06 | 18-Jun-01 | 169 | |
| 19-Jun-01 | 170 | | 19-Jun-01 | 170 | | 19-Jun-01 | 170 | 0.16 | | 19-Jun-01 | 170 | | 19-Jun-01 | 170 | 4.54 |
| 20-Jun-01 | 171 | | 20-Jun-01 | 171 | | 20-Jun-01 | 171 | | | 20-Jun-01 | 171 | | 20-Jun-01 | 171 | |
| 21-Jun-01 | 172 | 0.79 | 21-Jun-01 | 172 | 0.29 | 21-Jun-01 | 172 | 0.12 | | 21-Jun-01 | 172 | | 21-Jun-01 | 172 | |
| 22-Jun-01 | 173 | | 22-Jun-01 | 173 | | 22-Jun-01 | 173 | | | 22-Jun-01 | 173 | | 22-Jun-01 | 173 | |
| 23-Jun-01 | 174 | | 23-Jun-01 | 174 | | 23-Jun-01 | 174 | | | 23-Jun-01 | 174 | | 23-Jun-01 | 174 | |
| 24-Jun-01 | 175 | | 24-Jun-01 | 175 | | 24-Jun-01 | 175 | | | 24-Jun-01 | 175 | | 24-Jun-01 | 175 | |
| 25-Jun-01 | 176 | 0.86 | 25-Jun-01 | 176 | 0.30 | 25-Jun-01 | 176 | 0.11 | | 25-Jun-01 | 176 | 0.10 | 25-Jun-01 | 176 | |

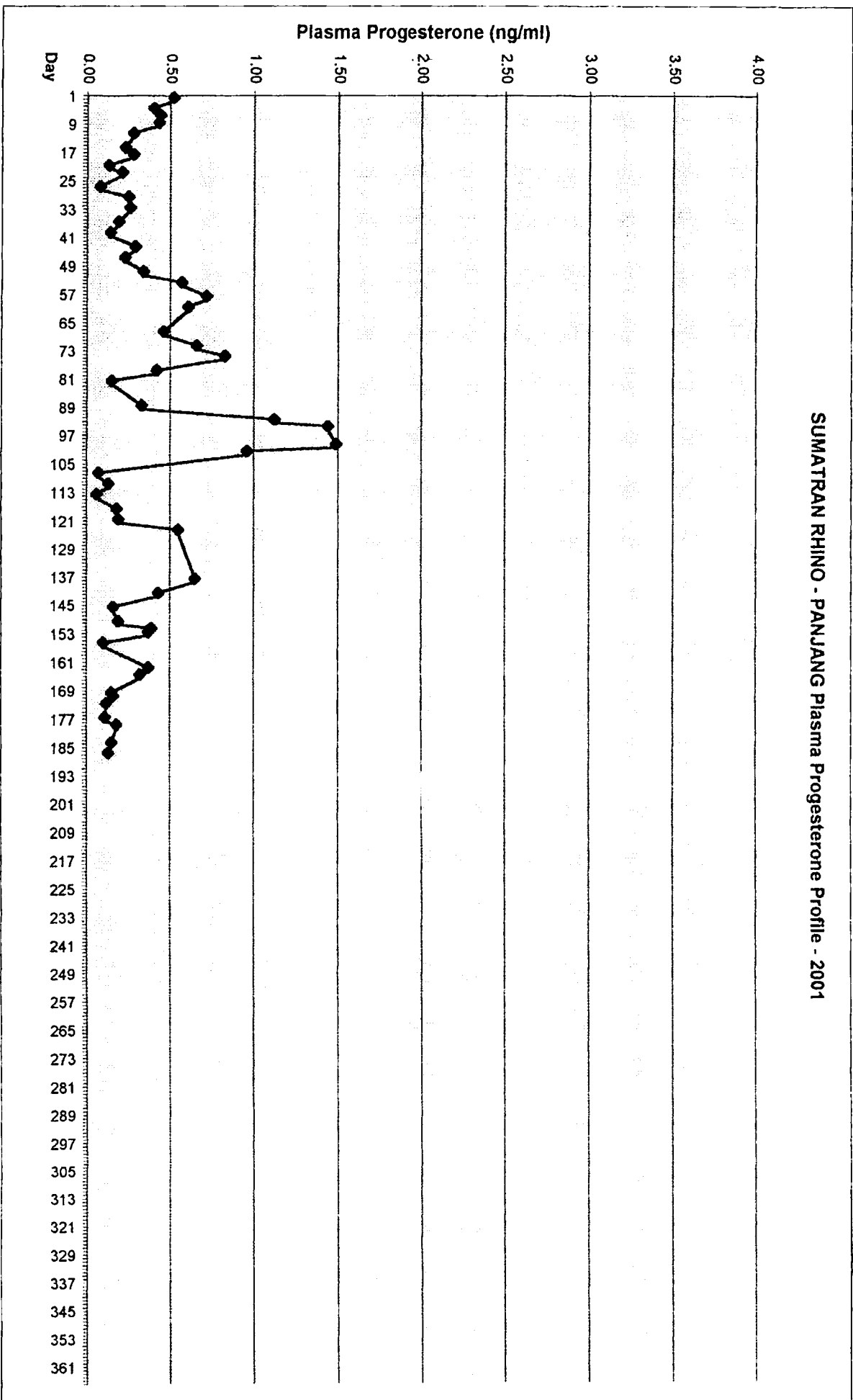
SUMATFRAN RHINO - SEPUTIH Plasma Progesterone Profile - 2001



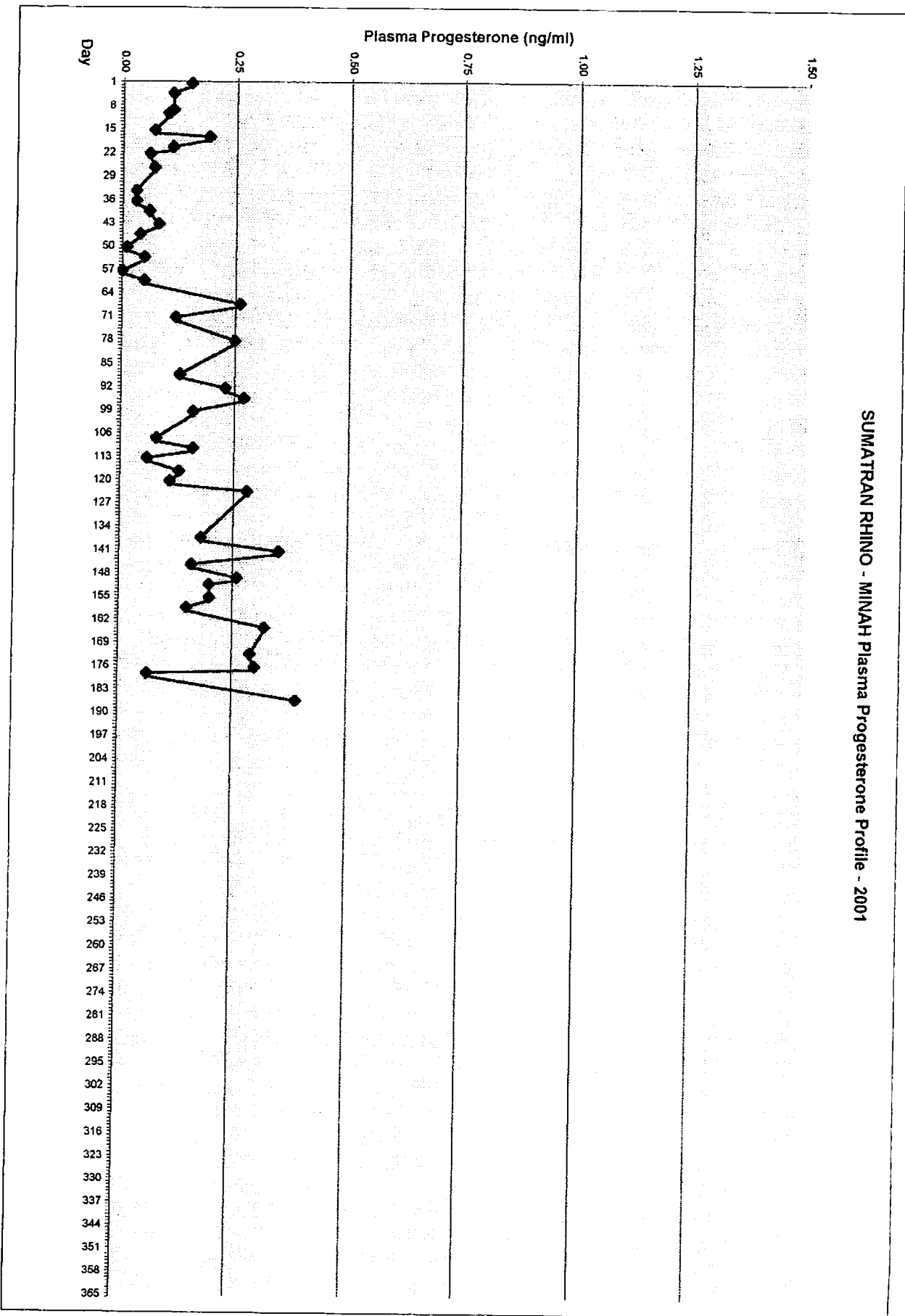
SUMATRAN RHINO - RIMA Plasma Progesterone Profile - 2001



SUMATRAN RHINO - PANJANG Plasma Progesterone Profile - 2001



SUMATRAN RHINO - MINAH Plasma Progesterone Profile - 2001



SUMATRAN RHINO - MAS MERAH Plasma Progesterone Profile - 2001

