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

MONTHLY REPORT

SEPTEMBER 2001

BY

Dr. AIDI MOHAMAD

&

STEVE ROMO

INTRODUCTION

Two breeding occurred throughout the month and both involving Ara and Seputeh. In the first breeding, Ara bred Seputeh for two consecutive days on the 3/9/01 and 4/9/01. The second breeding also occurred for two consecutive days on the 25/9/01 and 26/9/01. As for Rima, her progesterone is quite high and she refused the male when paired with Ara. Panjang and Minah still had a low level of progesterone but Mas Merah had a high level of P4.

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 looked for the rhino inside the enclosure and called 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 3/09/01. Blood sample was sent to UPM on 30/8/01 for confirmation. The result showed that her progesterone level was low and she was mixed with Ara in the morning of 3/9/01. The male kept trailing the female and two mountings were observed without any intromission. The rhinos were separated after 53 minutes since both rhinos looked tired. In the afternoon around 3.00 o'clock, the rhinos were paired again. Intromission occurred at the fifth mounting and lasted for 30 minutes. .

The next day (4/9/01), Seputeh and Ara were mixed again around 2.30p.m. after mixing the male with Rima. Breeding occurred after five minutes of mixing but the intromission only lasted for fifteen minutes. Ten minutes later, the second intomission occurred and lasted for about 32 minutes.

As for Rima, she was mixed with Ara from 4/9/01 until 6/9/01 but no breeding occurred. She was scanned on 3/9/01 and a 24mm follicle was observed on her right ovary. On top of that, a corpus luteum sized about 21mm was also observed. Mas Merah was mixed with Ara on 19/9/01 and 20/9/01, 21 days after her last breeding. However, no breeding occurred and the female vocalized a lot and ran away from the male.

As for Minah and Panjang , they were left alone from any breeding activities at the moment.

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

Dr. Robin and Rolfe Radcliffe visited the centre for ten days and did some scanning on all females to evaluate their reproduction status. The observation was summarized in the table below.

B) HEALTH STATUS

Generally, all rhinos are in the good condition. The rhinos were weighed on 13/9/01 and the body weight was summarized in Table 3.

Minah was given antibiotics, Trimethoprim-sulfamethoxazole (TMS) orally for fourteen days after the removing of the progesterone implant from her bladder on 5/9/01. This is done to treat cystitis and to prevent further inflammation of her urinary bladder.

C) FEEDING

No changes were made for the feeding program. The browses and produces were supplied by the contractor, which deliver them around 9.30 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, September 2001

Date	Rhino ID	Area taken	Remarks
05/09/01	Minah Seputeh	Tail Tail	Samples were taken from this two females for P4 analysis.
06/09/01	Minah Seputeh Rima Panjang Minah	Tail Tail Tail Tail Tail	Get blood samples from all females. The rhinos seem very cooperative.
10/09/01	Rima Minah Mas Merah Panjang	Tail Tail Tail Tail	Blood was taken for P4 analysis
13/09/01	Minah Rima Seputeh Panjang Mas Merah	Tail Tail Tail Tail Tail	Samples were taken from all females for P4 analysis.
17/09/01	Rima Mas Merah Panjang Minah	Tail Tail Tail Tail	Get samples via tail from all females.
20/09/01	Minah Mas Merah Panjang Rima Seputeh	Tail Tail Tail Tail Tail	Samples were taken from all females for P4 analysis.
23/09/01	Minah Seputeh Panjang	Tail Tail Tail	Get samples via tail from three females.

Table 2: Ultrasound Procedure on the females, September 2001

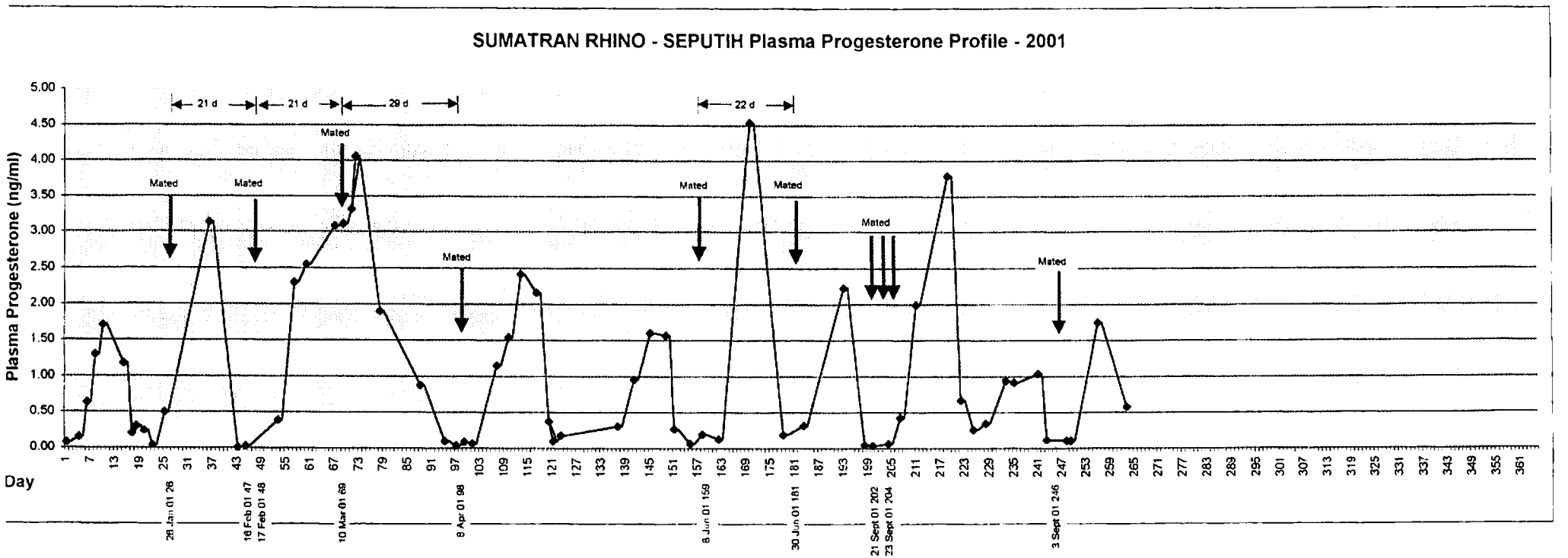
Date	Female (s)	Observation
3/9/01	Minah	The cervix, uterine body, the right and left horn looked normal. There were multi small follicles observed at the left ovary but the right one is static.
3/9/01	Mas Merah	The cervix, uterine body and right horn looked normal. Small cysts were observed at the left horn. Multi small follicles were observed at the right ovary and a 25mm corpus luteum was observed at the left ovary indicated ovulation occurred 36 – 48 hours post breeding.
3/9/01	Rima	The cervix and uterine body looked normal. Multi small cysts were observed at the left horn and a 22mm cyst observed at the right horn. There was a 15mm follicle observed at the left ovary and 21mm follicle at the right ovary.
3/9/01	Seputeh	The cervix looked normal. A 5cm mass was observed at the uterine body. Multiple masses were also observed at the left and right horn. Multi small follicles were observed at the left ovary and a 21mm follicle observed at the right ovary.

Table 3: Body Weight on 13th September 2001

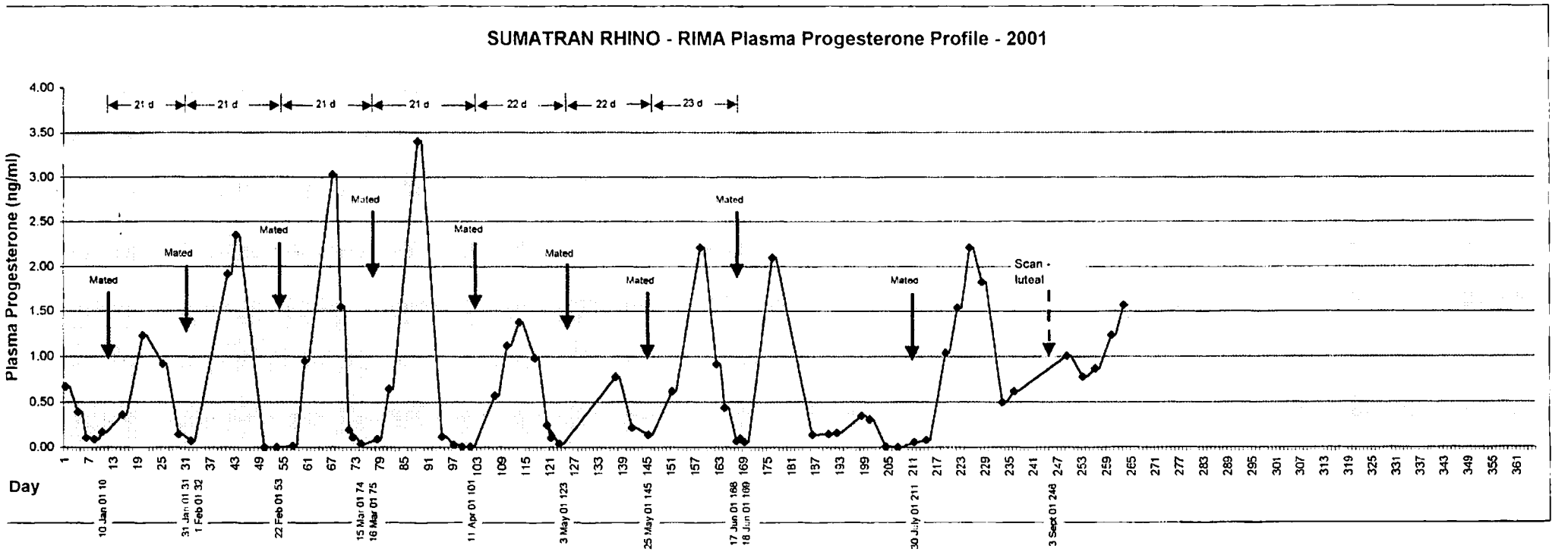
Rhino ID	Body Weight (kg)	Body Weight (lb)
Seputeh	730	1606
Shah	538	1184
Mas Merah	592	1302
Minah	484	1065
Panjang	510	1122
Ara	606	1333
Rima	556	1223

Sumatran Rhinoceros Plasma Progesterone Profile - 2001

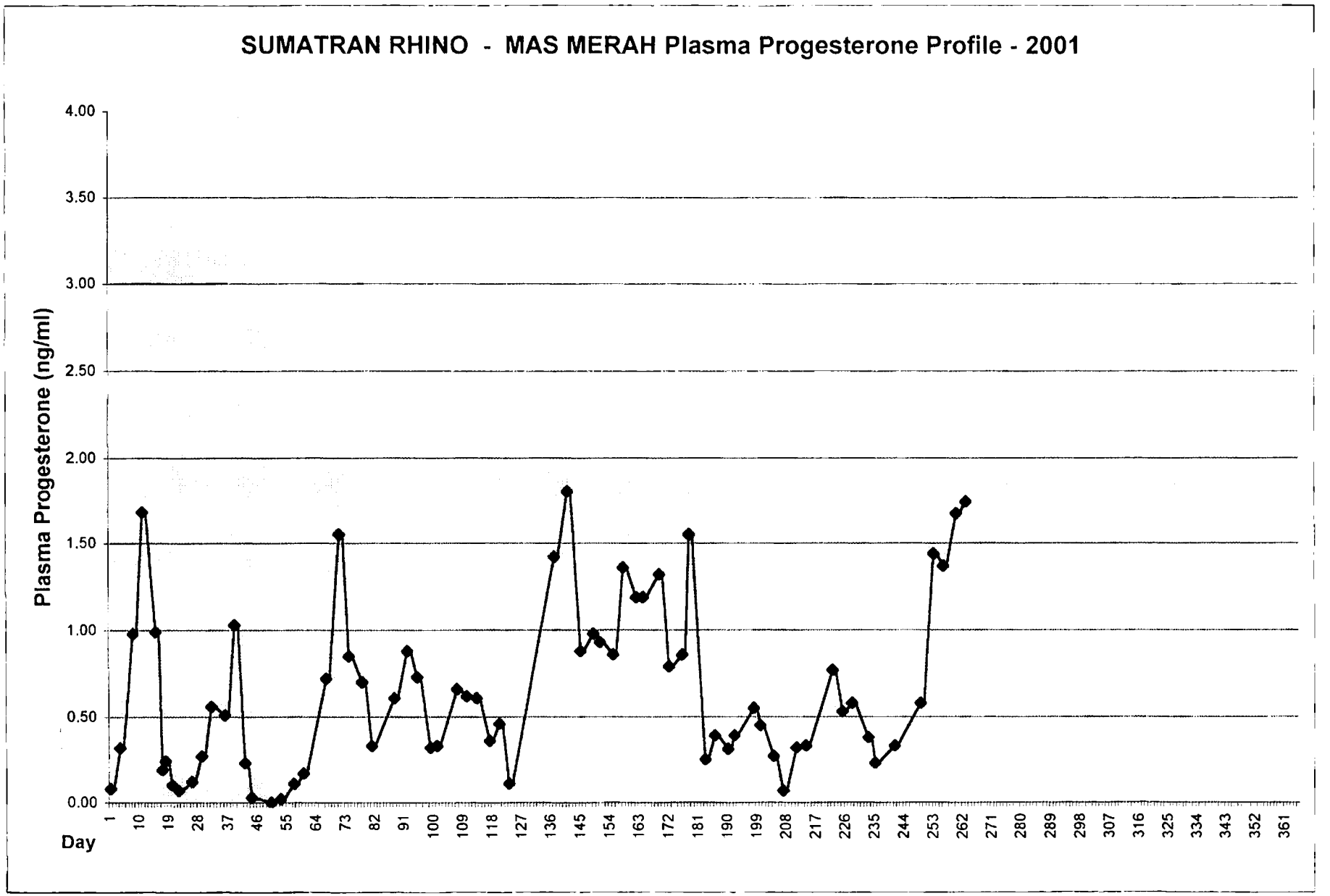
Mas Merah				Minah				Panjang				Rima				Seputih			
Date	Day	P4 (ng/ml)		Date	Day	P4 (ng/ml)		Date	Day	P4 (ng/ml)	E2 (pg/r	Date	Day	P4 (ng/ml)		Date	Day	P4 (ng/ml)	
1-Jul-01	182			1-Jul-01	182			1-Jul-01	182			1-Jul-01	182			1-Jul-01	182		
2-Jul-01	183	0.25		2-Jul-01	183			2-Jul-01	183	0.15		2-Jul-01	183			2-Jul-01	183	0.32	
3-Jul-01	184			3-Jul-01	184			3-Jul-01	184			3-Jul-01	184			3-Jul-01	184		
4-Jul-01	185			4-Jul-01	185			4-Jul-01	185			4-Jul-01	185			4-Jul-01	185		
5-Jul-01	186	0.39		5-Jul-01	186	0.39		5-Jul-01	186	0.13		5-Jul-01	186	0.14		5-Jul-01	186		
6-Jul-01	187			6-Jul-01	187			6-Jul-01	187			6-Jul-01	187			6-Jul-01	187		
7-Jul-01	188			7-Jul-01	188			7-Jul-01	188			7-Jul-01	188			7-Jul-01	188		
8-Jul-01	189			8-Jul-01	189			8-Jul-01	189			8-Jul-01	189			8-Jul-01	189		
9-Jul-01	190	0.31		9-Jul-01	190			9-Jul-01	190	0.08		9-Jul-01	190	0.15		9-Jul-01	190		
10-Jul-01	191			10-Jul-01	191			10-Jul-01	191			10-Jul-01	191			10-Jul-01	191		
11-Jul-01	192	0.39		11-Jul-01	192			11-Jul-01	192			11-Jul-01	192	0.16		11-Jul-01	192		
12-Jul-01	193			12-Jul-01	193			12-Jul-01	193	0.04		12-Jul-01	193			12-Jul-01	193	2.23	
13-Jul-01	194			13-Jul-01	194			13-Jul-01	194			13-Jul-01	194			13-Jul-01	194		
14-Jul-01	195			14-Jul-01	195			14-Jul-01	195			14-Jul-01	195			14-Jul-01	195		
15-Jul-01	196			15-Jul-01	196			15-Jul-01	196			15-Jul-01	196			15-Jul-01	196		
16-Jul-01	197			16-Jul-01	197			16-Jul-01	197			16-Jul-01	197			16-Jul-01	197		
17-Jul-01	198	0.55		17-Jul-01	198	0.06		17-Jul-01	198	0.15		17-Jul-01	198	0.35		17-Jul-01	198	0.05	
18-Jul-01	199			18-Jul-01	199			18-Jul-01	199			18-Jul-01	199			18-Jul-01	199		
19-Jul-01	200	0.45		19-Jul-01	200	0.21		19-Jul-01	200	0.03		19-Jul-01	200	0.31		19-Jul-01	200	0.04	
20-Jul-01	201			20-Jul-01	201			20-Jul-01	201			20-Jul-01	201			20-Jul-01	201		
21-Jul-01	202			21-Jul-01	202			21-Jul-01	202			21-Jul-01	202			21-Jul-01	202		
22-Jul-01	203			22-Jul-01	203			22-Jul-01	203			22-Jul-01	203			22-Jul-01	203		
23-Jul-01	204	0.27		23-Jul-01	204	0.22		23-Jul-01	204	0.06		23-Jul-01	204	0.01		23-Jul-01	204	0.07	
24-Jul-01	205			24-Jul-01	205			24-Jul-01	205			24-Jul-01	205			24-Jul-01	205		
25-Jul-01	206			25-Jul-01	206			25-Jul-01	206			25-Jul-01	206			25-Jul-01	206		
26-Jul-01	207	0.07		26-Jul-01	207	0.15		26-Jul-01	207	0.06		26-Jul-01	207	0.00		26-Jul-01	207	0.43	
27-Jul-01	208			27-Jul-01	208			27-Jul-01	208			27-Jul-01	208			27-Jul-01	208		
28-Jul-01	209			28-Jul-01	209			28-Jul-01	209			28-Jul-01	209			28-Jul-01	209		
29-Jul-01	210			29-Jul-01	210			29-Jul-01	210			29-Jul-01	210			29-Jul-01	210		
30-Jul-01	211	0.32		30-Jul-01	211			30-Jul-01	211	0.11		30-Jul-01	211	0.06		30-Jul-01	211	1.99	
31-Jul-01	212			31-Jul-01	212			31-Jul-01	212			31-Jul-01	212			31-Jul-01	212		
1-Aug-01	213			1-Aug-01	213			1-Aug-01	213			1-Aug-01	213			1-Aug-01	213		
2-Aug-01	214	0.33		2-Aug-01	214	0.49		2-Aug-01	214	0.06		2-Aug-01	214	0.08		2-Aug-01	214		
3-Aug-01	215			3-Aug-01	215			3-Aug-01	215			3-Aug-01	215			3-Aug-01	215		
4-Aug-01	216			4-Aug-01	216			4-Aug-01	216			4-Aug-01	216			4-Aug-01	216		
5-Aug-01	217			5-Aug-01	217			5-Aug-01	217			5-Aug-01	217			5-Aug-01	217		
6-Aug-01	218			6-Aug-01	218			6-Aug-01	218			6-Aug-01	218			6-Aug-01	218		
7-Aug-01	219			7-Aug-01	219	0.30		7-Aug-01	219	0.17		7-Aug-01	219	1.04		7-Aug-01	219	3.79	
8-Aug-01	220			8-Aug-01	220			8-Aug-01	220			8-Aug-01	220			8-Aug-01	220		
9-Aug-01	221			9-Aug-01	221			9-Aug-01	221			9-Aug-01	221			9-Aug-01	221		
10-Aug-01	222	0.77		10-Aug-01	222			10-Aug-01	222	0.12		10-Aug-01	222	1.54		10-Aug-01	222	0.67	
11-Aug-01	223			11-Aug-01	223			11-Aug-01	223			11-Aug-01	223			11-Aug-01	223		
12-Aug-01	224			12-Aug-01	224			12-Aug-01	224			12-Aug-01	224			12-Aug-01	224		
13-Aug-01	225	0.53		13-Aug-01	225	0.47		13-Aug-01	225	0.08		13-Aug-01	225	2.21		13-Aug-01	225	0.26	
14-Aug-01	226			14-Aug-01	226			14-Aug-01	226			14-Aug-01	226			14-Aug-01	226		
15-Aug-01	227			15-Aug-01	227			15-Aug-01	227			15-Aug-01	227			15-Aug-01	227		
16-Aug-01	228	0.58		16-Aug-01	228	0.53		16-Aug-01	228	0.16		16-Aug-01	228	1.83		16-Aug-01	228	0.35	
17-Aug-01	229			17-Aug-01	229			17-Aug-01	229			17-Aug-01	229			17-Aug-01	229		
18-Aug-01	230			18-Aug-01	230			18-Aug-01	230			18-Aug-01	230			18-Aug-01	230		
19-Aug-01	231			19-Aug-01	231			19-Aug-01	231			19-Aug-01	231			19-Aug-01	231		
20-Aug-01	232			20-Aug-01	232			20-Aug-01	232			20-Aug-01	232			20-Aug-01	232		
21-Aug-01	233	0.38		21-Aug-01	233	0.81		21-Aug-01	233	0.14		21-Aug-01	233	0.73	0.50	21-Aug-01	233	0.94	
22-Aug-01	234			22-Aug-01	234			22-Aug-01	234			22-Aug-01	234			22-Aug-01	234		
23-Aug-01	235	0.23		23-Aug-01	235			23-Aug-01	235	0.03		23-Aug-01	235			23-Aug-01	235	0.92	
24-Aug-01	236			24-Aug-01	236	0.47	0.36	24-Aug-01	236			24-Aug-01	236	0.75	0.62	24-Aug-01	236		
25-Aug-01	237			25-Aug-01	237			25-Aug-01	237			25-Aug-01	237			25-Aug-01	237		
26-Aug-01	238			26-Aug-01	238			26-Aug-01	238			26-Aug-01	238			26-Aug-01	238		
27-Aug-01	239			27-Aug-01	239			27-Aug-01	239			27-Aug-01	239			27-Aug-01	239		
28-Aug-01	240			28-Aug-01	240			28-Aug-01	240			28-Aug-01	240			28-Aug-01	240		
29-Aug-01	241	0.33		29-Aug-01	241			29-Aug-01	241			29-Aug-01	241			29-Aug-01	241	1.04	
30-Aug-01	242			30-Aug-01	242			30-Aug-01	242			30-Aug-01	242			30-Aug-01	242		
31-Aug-01	243			31-Aug-01	243			31-Aug-01	243	0.10		31-Aug-01	243			31-Aug-01	243	0.12	
1-Sep-01	244			1-Sep-01	244			1-Sep-01	244			1-Sep-01	244			1-Sep-01	244		
2-Sep-01	245			2-Sep-01	245			2-Sep-01	245			2-Sep-01	245			2-Sep-01	245		
3-Sep-01	246			3-Sep-01	246			3-Sep-01	246			3-Sep-01	246			3-Sep-01	246		
4-Sep-01	247			4-Sep-01	247			4-Sep-01	247			4-Sep-01	247			4-Sep-01	247		
5-Sep-01	248			5-Sep-01	248	1.24	0.64	5-Sep-01	248			5-Sep-01	248			5-Sep-01	248	0.11	
6-Sep-01	249	0.58		6-Sep-01	249	0.03	0.01	6-Sep-01	249	0.21		6-Sep-01	249	0.77	10.1	6-Sep-01	249	0.11	
7-Sep-01	250			7-Sep-01	250			7-Sep-01	250			7-Sep-01	250			7-Sep-01	250		
8-Sep-01	251			8-Sep-01	251			8-Sep-01	251			8-Sep-01	251			8-Sep-01	251		
9-Sep-01	252			9-Sep-01	252			9-Sep-01	252			9-Sep-01	252			9-Sep-01	252		
10-Sep-01	253	1.44		10-Sep-01	253	0.14		10-Sep-01	253	0.12		10-Sep-01	253	0.78		10-Sep-01	253		
11-Sep-01	254			11-Sep-01	254			11-Sep-01	254			11-Sep-01	254			11-Sep-01	254		
12-Sep-01	255			12-Sep-01	255			12-Sep-01	255			12-Sep-01	255			12-Sep-01	255		
13-Sep-01	256	1.37		13-Sep-01	256	0.06		13-Sep-01	256	0.16		13-Sep-01	256	0.87		13-Sep-01	256	1.75	
14-Sep-01	257			14-Sep-01	257			14-Sep-01	257			14-Sep-01	257			14-Sep-01	257		
15-Sep-01	258			15-Sep-01	258			15-Sep-01	258			15-Sep-01	258			15-Sep-01	258		
16-Sep-01	259			16-Sep-01	259			16-Sep-01	259			16-Sep-01	259			16-Sep-01	259		
17-Sep-01	260	1.67		17-Sep-01	260	0.13		17-Sep-01	260	0.14		17-Sep-01	260	1.24		17-Sep-01	260		
18-Sep-01	261			18-Sep-01	261			18-Sep-01	261			18-Sep-01	261			18-Sep-01	261		
19-Sep-01	262			19-Sep-01	262			19-Sep-01	262			19-Sep-01	262			19-Sep-01	262		
20-Sep-01	263	1.74		20-Sep-01	263	0.09		20-Sep-01	263	0.15		20-Sep-01	263	1.57		20-Sep-01	263	0.58	
21-Sep-01	264			21-Sep-01	264			21-Sep-01	264			21-Sep-01	264			21-Sep-01	264		
22-Sep-01	265			22-Sep-01	265			22-Sep-01	265			22-Sep-01	265			22-Sep-01	265		
23-Sep-01	266			23-Sep-01	266			23-Sep-01	266			23-Sep-01	266			23-Sep-01	266		
24-Sep-01	267			24-Sep-01	267			24-Sep-01	267			24-Sep-01	267			24-Sep-01	267		
25-Sep-01	268			25-Sep-01	268			25-Sep-01	268			25-Sep-01	268			25-Sep-01	268		
26-Sep-01	269			26-Sep-01	269			26-Sep-01	269			26-Sep-01	269			26-Sep-01	269		
27-Sep-01	270			27-Sep-01	270			27-Sep-01	270			27-Sep-01	270			27-Sep-01	270		
28-Sep-01	271			28-Sep-01	271			28-Sep-01	271			28-Sep-01	271			28-Sep-01	271		
29-Sep-01	272			29-Sep-01	272			29-Sep-01	272			29-Sep-01	272			29-Sep-01	272		
30-Sep-01	273			30-Sep-01	273			30-Sep-01	273			30-Sep-01	273			30-Sep-01	273		

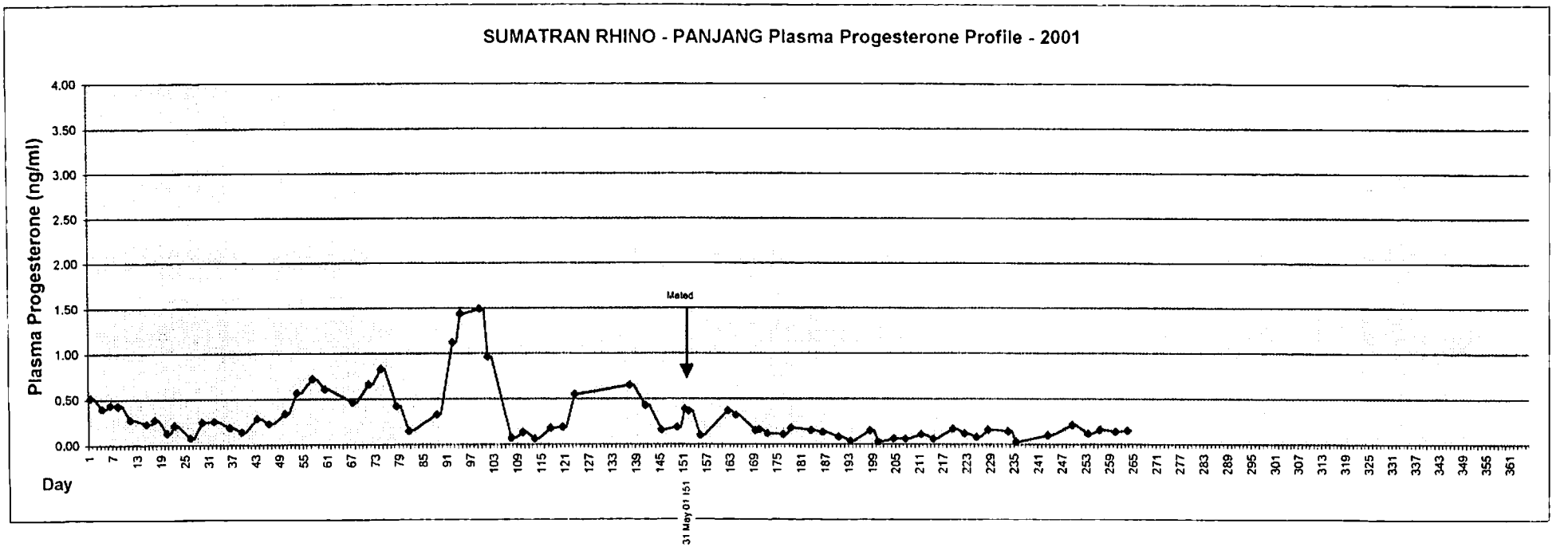


Rhino_P4_graph Updated on 03/09/2001

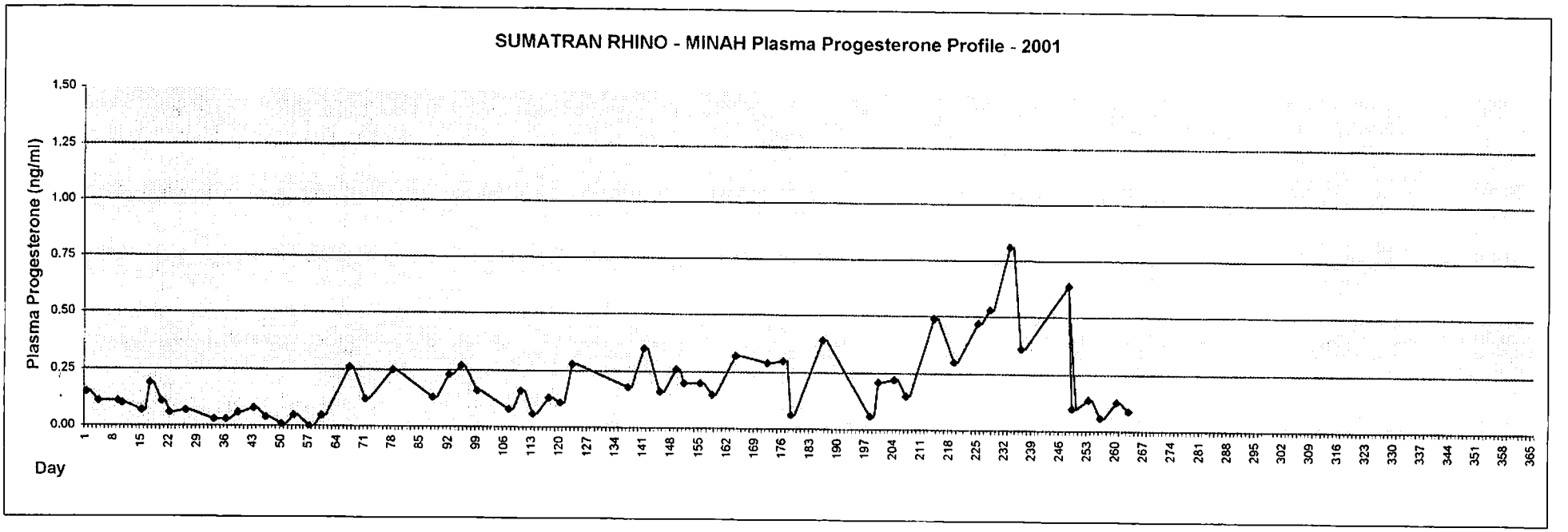


Rhino_P4_graph Updated on 03/09/2001


SUMATRAN RHINO - MAS MERAH Plasma Progesterone Profile - 2001
Plasma Progesterone (ng/ml)
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Day
1
10
19
28
37
46
55
64
73
82
91
100
109
118
127
136
145
154
163
172
181
190
199
208
217
226
235
244
253
262
271
280
289
298
307
316
325
334
343
352
361



Rhino_P4-graph Updated on 03/09/2001


SUMATRAN RHINO - MINAH Plasma Progesterone Profile - 2001
Plasma Progesterone (ng/ml)
1.50
1.25
1.00
0.75
0.50
0.25
0.00
Day
1
8
15
22
29
36
43
50
57
64
71
78
85
92
99
106
113
120
127
134
141
148
155
162
169
176
183
190
197
204
211
218
225
232
239
246
253
260
267
274
281
288
295
302
309
316
323
330
337
344
351
358
365