

SUMATRAN RHINO SANCTUARY
WAY KAMBAS NATIONAL PARK
SUMATRA, INDONESIA



PERIODIC
CURATOR REPORT
January – December 2007

SUMATRAN RHINO SANCTUARY, Way Kambas NP, Sumatra

CUMULATIVE MONTHLY REPORT 2007

Date of completion of SRS Monthly Report

| Report | Feb-07 | Mar-07 | Apr-07 | May-07 | Jun-07 | Jul-07 | Aug-07 | Sep-07 | Oct-07 | Nov-07 | Dec-07 | Jan-08 |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Date | 28 | 31 | 30 | 31 | 30 | 31 | 31 | 29 | 5 | 30 | 15 | 10 |

ANIMAL SECTION

Standard Weight Tables (kg)

| TORGAMBA | Jan-07 | Feb-07 | Mar-07 | Apr-07 | May-07 | Jun-07 | Jul-07 | Aug-07 | Sep-07 | Oct-07 | Nov-07 | Dec-07 |
|-------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| week 1 | 679 | 688 | - | 695 | 682 | - | 701 | 635 | 682 | 690 | 705 | - |
| week 2 | 688 | 691 | 695 | 691 | 696 | 664 | 695 | 685 | - | 674 | 695 | 708 |
| week 3 | 711 | - | 710 | 678 | 682 | 704 | 695 | 680 | 689 | 700 | 684 | 679 |
| week 4 | - | 677 | 691 | - | 703 | 679 | 686 | 660 | 672 | 726 | 704 | 672 |
| week 5 | - | - | 705 | - | 710 | - | - | - | - | 730 | 682 | - |
| Mean | 693 | 685 | 700 | 688 | 695 | 682 | 694 | 665 | 681 | 704 | 694 | 686 |

| BINA | Jan-07 | Feb-07 | Mar-07 | Apr-07 | May-07 | Jun-07 | Jul-07 | Aug-07 | Sep-07 | Oct-07 | Nov-07 | Dec-07 |
|-------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| week 1 | 665 | 686 | - | 668 | 680 | - | 727 | - | 725 | 737 | - | - |
| week 2 | 688 | - | 692 | 690 | 700 | 708 | 712 | - | 725 | 734 | 722 | 735 |
| week 3 | - | - | 701 | - | 691 | 705 | 705 | - | 743 | 727 | 724 | 735 |
| week 4 | 686 | 684 | 660 | - | 704 | 708 | 717 | 725 | 726 | 712 | 733 | 751 |
| week 5 | 688 | - | 711 | - | 714 | 708 | - | 737 | - | 733 | 725 | - |
| Mean | 682 | 685 | 691 | 679 | 698 | 707 | 715 | 731 | 730 | 729 | 726 | 740 |

| RATU | Jan-07 | Feb-07 | Mar-07 | Apr-07 | May-07 | Jun-07 | Jul-07 | Aug-07 | Sep-07 | Oct-07 | Nov-07 | Dec-07 |
|-------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| week 1 | 547 | 548 | - | 556 | 553 | - | 566 | - | 552 | 571 | - | - |
| week 2 | 557 | 551 | 547 | 577 | 550 | 530 | 559 | - | 558 | - | 565 | 563 |
| week 3 | - | - | - | 552 | 556 | 554 | 564 | - | 573 | 553 | - | 556 |
| week 4 | - | 543 | 566 | - | 548 | 561 | 551 | 557 | 578 | 559 | 555 | 537 |
| week 5 | 544 | - | 551 | - | 566 | 549 | - | - | - | 568 | 562 | - |
| Mean | 549 | 547 | 555 | 562 | 555 | 549 | 560 | 557 | 565 | 563 | 561 | 552 |

| ROSA | Jan-07 | Feb-07 | Mar-07 | Apr-07 | May-07 | Jun-07 | Jul-07 | Aug-07 | Sep-07 | Oct-07 | Nov-07 | Dec-07 |
|-------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| week 1 | 564 | 575 | 570 | 555 | 564 | - | 573 | 588 | 577 | 577 | - | - |
| week 2 | - | 566 | 560 | 560 | 557 | 569 | 595 | - | 595 | - | 583 | 588 |
| week 3 | - | - | - | 561 | 577 | 574 | 586 | - | 595 | 580 | 588 | 595 |
| week 4 | 562 | 553 | 537 | - | 577 | 588 | 581 | 584 | 570 | - | 581 | 597 |
| week 5 | - | - | 576 | - | 588 | 594 | - | - | - | 593 | 588 | - |
| Mean | 563 | 565 | 561 | 559 | 573 | 581 | 584 | 586 | 584 | 583 | 585 | 593 |

| ANDALAS | Jan-07 | Feb-07 | Mar-07 | Apr-07 | May-07 | Jun-07 | Jul-07 | Aug-07 | Sep-07 | Oct-07 | Nov-07 | Dec-07 |
|-------------|----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| week 1 | - | - | - | 655 | 673 | - | 709 | 716 | 739 | 725 | - | - |
| week 2 | - | - | 662 | 675 | 665 | 662 | 705 | 715 | 730 | 737 | 741 | 773 |
| week 3 | - | 660 | 664 | 671 | 687 | 663 | 707 | 730 | 725 | 721 | 719 | 755 |
| week 4 | - | 668 | 671 | - | 681 | 677 | 706 | 715 | 734 | 720 | 749 | 764 |
| week 5 | - | - | 666 | - | 687 | 698 | 712 | 737 | - | 754 | 754 | - |
| Mean | - | 664 | 666 | 667 | 679 | 675 | 708 | 723 | 732 | 731 | 741 | 764 |

Standard Food Table

B=Browse; F=Fruits (in Kg).

| TORGAMBA | Jan-07 | | Feb-07 | | Mar-07 | | Apr-07 | | May-07 | | Jun-07 | | Jul-07 | | Aug-06 | | Sep-07 | | Oct-07 | | Nov-07 | | Dec-07 | |
|-----------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|
| | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F |
| week 1 | 39 | 4.5 | 39 | 7.3 | 42 | 8.5 | 42 | 8.5 | 41 | 8.7 | 47 | 8.2 | 43 | 8.7 | 29 | 11 | 31 | 17 | 33 | 14 | 44 | 14 | 41 | 11 |
| week 2 | 41 | 8.0 | 42 | 8.5 | 41 | 7.8 | 41 | 7.8 | 43 | 7.8 | 44 | 10 | 43 | 9.3 | 32 | 11 | 29 | 13 | 34 | 14 | 40 | 13 | 42 | 11 |
| week 3 | 41 | 6.7 | 39 | 7.9 | 45 | 8.6 | 45 | 8.6 | 43 | 8.9 | 48 | 9.0 | 39 | 10 | 25 | 11 | 33 | 16 | 40 | 14 | 38 | 13 | 47 | 21 |
| week 4 | 43 | 8.9 | 41 | 7.5 | 42 | 9.4 | 42 | 9.4 | 38 | 10 | 41 | 8.0 | 16 | 8.0 | 28 | 11 | 30 | 15 | 37 | 13 | 35 | 9.0 | 43 | 9 |
| Mean | 41 | 7.0 | 40 | 7.8 | 43 | 8.6 | 43 | 8.6 | 41 | 8.9 | 45 | 8.8 | 35 | 9.0 | 29 | 11 | 31 | 15 | 36 | 14 | 39 | 12 | 43 | 13 |
| BINA | Jan-07 | | Feb-07 | | Mar-07 | | Apr-07 | | May-07 | | Jun-07 | | Jul-07 | | Aug-06 | | Sep-07 | | Oct-07 | | Nov-07 | | Dec-07 | |
| | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F |
| week 1 | 34 | 4.8 | 33 | 4.8 | 26 | 5.5 | 31 | 5.5 | 33 | 5.7 | 37 | 3.9 | 37 | 6.4 | 31 | 6.8 | 37 | 7.0 | 25 | 6.0 | 28 | 6.2 | 32 | 5.0 |
| week 2 | 27 | 5.4 | 31 | 5.4 | 31 | 5.0 | 30 | 6.8 | 38 | 6.0 | 31 | 7.5 | 32 | 7.7 | 28 | 6.3 | 31 | 5.0 | 30 | 6.0 | 30 | 5.4 | 33 | 5.8 |
| week 3 | 31 | 4.4 | 26 | 4.4 | 29 | 5.0 | 35 | 6.0 | 34 | 5.7 | 36 | 7.1 | 32 | 6.4 | 30 | 6.1 | 33 | 6.0 | 32 | 5.0 | 32 | 6.3 | 30 | 6.4 |
| week 4 | 35 | 2.2 | 16 | 2.2 | 34 | 5.0 | 27 | 5.3 | 37 | 6.3 | 32 | 7.4 | 35 | 6.4 | 31 | 6.8 | 27 | 7.0 | 32 | 5.0 | 26 | 4.3 | 29 | 5.6 |
| Mean | 32 | 4.2 | 27 | 4.2 | 30 | 5.1 | 31 | 5.9 | 36 | 5.9 | 34 | 6.5 | 34 | 6.7 | 30 | 6.5 | 32 | 6.3 | 30 | 5.5 | 29 | 5.6 | 31 | 5.7 |
| RATU | Jan-07 | | Feb-07 | | Mar-07 | | Apr-07 | | May-07 | | Jun-07 | | Jul-07 | | Aug-06 | | Sep-07 | | Oct-07 | | Nov-07 | | Dec-07 | |
| | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F |
| week 1 | 19 | 3.2 | 24 | 5.2 | 28 | 5.2 | 22 | 4.9 | 23 | 6.1 | 27 | 4.8 | 22 | 6.4 | 21 | 7.8 | 26 | 8.0 | 22 | 6.0 | 21 | 6.0 | 24 | 5.0 |
| week 2 | 21 | 5.9 | 25 | 4.7 | 29 | 4.6 | 20 | 5.7 | 25 | 6.5 | 28 | 6.5 | 22 | 6.7 | 21 | 8.3 | 26 | 7.5 | 26 | 7.0 | 24 | 6.0 | 28 | 6.0 |
| week 3 | 21 | 5.0 | 25 | 4.3 | 22 | 4.5 | 22 | 5.7 | 23 | 5.1 | 27 | 7.0 | 26 | 5.9 | 21 | 7.3 | 24 | 7.0 | 23 | 5.0 | 24 | 6.0 | 29 | 6.0 |
| week 4 | 17 | 6.6 | 12 | 2.8 | 18 | 5.2 | 21 | 5.7 | 20 | 6.3 | 25 | 6.9 | 19 | 6.6 | 24 | 7.7 | 19 | 6.8 | 18 | 5.0 | 20 | 4.0 | 22 | 6.3 |
| Mean | 20 | 5.2 | 22 | 4.3 | 24 | 4.9 | 21 | 5.5 | 23 | 6.0 | 27 | 6.3 | 22 | 6.4 | 22 | 7.8 | 24 | 7.3 | 22 | 5.8 | 22 | 5.5 | 26 | 5.8 |
| ROSA | Jan-07 | | Feb-07 | | Mar-07 | | Apr-07 | | May-07 | | Jun-07 | | Jul-07 | | Aug-06 | | Sep-07 | | Oct-07 | | Nov-07 | | Dec-07 | |
| | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F |
| week 1 | 23 | 3.5 | 23 | 5.0 | 22 | 4.4 | 18 | 5.6 | 22 | 6.1 | 23 | 5.7 | 20 | 6.6 | 16 | 6.4 | 25 | 8.0 | 21 | 8.0 | 24 | 6.7 | 23 | 6.0 |
| week 2 | 24 | 5.0 | 25 | 6.1 | 24 | 5.3 | 20 | 6.8 | 23 | 6.9 | 22 | 7.2 | 11 | 6.6 | 14 | 7.6 | 26 | 7.0 | 25 | 7.0 | 22 | 6.0 | 24 | 6.0 |
| week 3 | 24 | 5.2 | 26 | 5.1 | 24 | 5.6 | 20 | 5.5 | 23 | 6.3 | 23 | 6.5 | 22 | 6.8 | 14 | 6.1 | 24 | 7.0 | 22 | 5.0 | 25 | 6.0 | 24 | 7.0 |
| week 4 | 25 | 6.7 | 13 | 2.4 | 25 | 5.6 | 21 | 6.2 | 23 | 7.2 | 20 | 6.4 | 24 | 6.5 | 20 | 5.9 | 23 | 6.0 | 25 | 5.0 | 22 | 5.0 | 23 | 6.0 |
| Mean | 24 | 5.1 | 22 | 4.7 | 24 | 5.2 | 20 | 6.0 | 23 | 6.6 | 22 | 6.5 | 19 | 6.6 | 16 | 6.5 | 25 | 7.0 | 23 | 6.3 | 23 | 5.9 | 24 | 6.3 |
| ANDALAS | Jan-07 | | Feb-07 | | Mar-07 | | Apr-07 | | May-07 | | Jun-07 | | Jul-07 | | Aug-06 | | Sep-07 | | Oct-07 | | Nov-07 | | Dec-07 | |
| | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F | B | F |
| week 1 | - | - | - | - | 24 | 6.5 | 34 | 6.7 | 38 | 9.1 | 34 | 7.0 | 40 | 12 | 43 | 13 | 43 | 13 | 37 | 12 | 40 | 11 | 44 | 9 |
| week 2 | - | - | - | - | 28 | 6.7 | 36 | 7.2 | 35 | 8.5 | 35 | 12 | 42 | 14 | 43 | 12 | 43 | 11 | 36 | 12 | 40 | 10 | 38 | 9 |
| week 3 | - | - | - | - | 31 | 6.7 | 36 | 7.6 | 38 | 9.2 | 37 | 13 | 41 | 11 | 41 | 12 | 32 | 11 | 37 | 9.0 | 42 | 10 | 45 | 11 |
| week 4 | - | - | - | - | 26 | 7.7 | 30 | 6.9 | 33 | 7.2 | 35 | 11 | 43 | 11 | 45 | 14 | 27 | 13 | 38 | 9.0 | 35 | 9.0 | 44 | 7 |
| Mean | - | - | - | - | 27 | 6.9 | 34 | 7.1 | 36 | 8.5 | 35 | 11 | 42 | 12 | 43 | 13 | 36 | 12 | 37 | 11 | 39 | 10 | 43 | 9 |

Food Supplement Tables

| TORGAMBA | Preparation, dosage, methods etc | Comments |
|----------|---|--|
| Jan-07 | <ul style="list-style-type: none"> - Phosphorus 3 cup/day PO - Missing Link (fatty acid, omega 3,6) ½ cup/days PO - Bio Bloom a cup/day PO - Herbal (radix alang-alang, kumis kucing, pasak bumi) 4 liter/day and Mengkudu fruit 1-2 kg/day - Normal salt | |
| Feb-07 | <ul style="list-style-type: none"> - Phosphorus 3 cup/day PO - Missing Link (fatty acid, omega 3,6) ½ cup/days PO - Bio Bloom a cup/day PO - Herbal - Normal salt | |
| Mar-07 | <ul style="list-style-type: none"> - Phosphorus 3 cup/day PO - Missing Link (fatty acid, omega 3,6) ½ cup/days PO - Bio Bloom a cup/day PO - Herbal - Normal salt | |
| Apr-07 | <ul style="list-style-type: none"> - Phosphorus 3 cup/day PO - Missing Link (fatty acid, omega 3,6) ½ cup/days PO - Bio Bloom a cup/day PO - Herbal - Normal salt | Little bit weakness after success breed |
| May-07 | <ul style="list-style-type: none"> - Phosphorus 3 cup/day PO - Missing Link (fatty acid, omega 3,6) ½ cup/days PO - Hoof maker 1 sachet/day PO - Herbal | |
| Jun-07 | <ul style="list-style-type: none"> - Phosphorus 3 cup/day PO - Missing Link (fatty acid, omega 3,6) ½ cup/days PO - Hoof maker 1 sachet/day PO - Herbal | Little bit weakness after success breed |
| Jul-07 | <ul style="list-style-type: none"> - Phosphorus 3 cup/day PO - Missing Link (fatty acid, omega 3,6) ½ cup/days PO - Hoof maker 1 sachet/day PO - Herbal - Normal salt | Healthy until 20 July Eye problem on 21 July July 30 & 31 looks very weak & very sick |
| Aug-07 | <ul style="list-style-type: none"> - Phosphorus 3 cup/day PO - Missing Link (fatty acid, omega 3,6) 1 cup/days PO - Normal salt, electrolytes and amino acid - Carnitol and Tripart supplement PO | Weakness and loss appetite Since he has problem, we give hand feeding (leaf mix fruits or bread) |
| Sep-07 | <ul style="list-style-type: none"> - Phosphorus 3 cup/day PO - Missing Link (fatty acid, omega 3,6) 1 cup/days PO - Normal salt, electrolytes and amino acid - Carnitol and Tripart supplement PO | Since 28 Aug release to big paddock to let him browse and wandering. |
| Oct-07 | <ul style="list-style-type: none"> - Phosphorus 3 cup/day PO - Missing Link (fatty acid, omega 3,6) 1 cup/days PO - Electrolytes until 16 Oct (empty), after that Normal salt+sugar - Neurobion 10 tab 1-2x/week - Pro biotic (yakult) 15 bottles/day (@ 5 bottles) for 2 days | Stabile condition (under control) |
| Nov-07 | <ul style="list-style-type: none"> - Phosphorus 3 cup/day PO - Missing Link (fatty acid, omega 3,6) 1 cup/days PO - Normal salt, electrolytes and amino acid | |
| Dec-07 | <ul style="list-style-type: none"> - Phosphorus 3 cup/day PO - Normal salt | Boma |

| BINA | Preparation, dosage, methods etc | Comments |
|----------------|---|--|
| Jan-07 | - Mineral Block | |
| Feb-07 | - Mineral Block | |
| Mar-07 | - Mineral Block | |
| Apr-07 | - Mineral Block | |
| May-07 | - Mineral Block | |
| Jun-07 | - Mineral Block | |
| Jul-07 | - Mineral Block | |
| Aug-07 | - Mineral block | |
| Sep-07 | - Mineral block | |
| Oct-07 | - Mineral block | Healthy |
| Nov-07 | - Mineral block | |
| Dec-07 | - Mineral block | |
| RATU | Preparation, dosage, methods etc | Comments |
| Jan-07 | - Mineral Block | |
| Feb-07 | - Mineral Block | |
| Mar-07 | - Mineral Block | |
| Apr-07 | - Mineral Block | |
| May-07 | - Mineral Block | |
| Jun-07 | - Mineral Block | |
| Jul-07 | - Mineral Block | |
| Aug-07 | - Mineral block | |
| Sep-07 | - Mineral block | |
| Oct-07 | - Mineral block | Healthy |
| Nov-07 | - Mineral block | |
| Dec-07 | - Mineral block | |
| ROSA | Preparation, dosage, methods etc | Comments |
| Jan-07 | - Mineral Block | |
| Feb-07 | - Mineral Block | |
| Mar-07 | - Mineral Block | |
| Apr-07 | - Mineral Block | |
| May-07 | - Mineral Block | |
| Jun-07 | - Mineral Block | |
| Jul-07 | - Mineral Block | |
| Aug-07 | - Mineral Block | |
| Sep-07 | - Mineral Block | |
| Oct-07 | - Mineral Block - Hoof Dressing/drunken till Dec 20 and change with topical AB ointment | |
| Nov-07 | - Mineral block | |
| Dec-07 | - Mineral block | |
| ANDALAS | Preparation, dosage, methods etc | Comments |
| Feb-07 | - Mineral Block | |
| Mar-07 | - Mineral Block | |
| Apr-07 | - Mineral Block | |
| May-07 | - Mineral Block | |
| Jun-07 | - Mineral block - Missing Link ½ cup/days PO since June 6 - Herbal (same with Torgamba) since June 9 | Does not like Herbs much |
| Jul-07 | - Mineral block - Missing Link ½ cup/days PO - Herbal (same with Torgamba) | Healthy Hand feeding (leaf mix fruits) for increase leaves intake |
| Aug-07 | - Normal salt - Missing Link ½ cup/days PO - Herbal (same with Torgamba) | Healthy (head wounds) Hand feeding (leaf mix fruits) for increase leaves intake |
| Sep-07 | - Normal salt - Missing Link ½ cup/days PO - Herbal (same with Torgamba) | Healthy (head wounds) Hand feeding (leaf mix fruits) |
| Oct-07 | - Normal salt - Neurobion 10 tab 1x/week | Healthy (head wounds) |
| Nov-07 | - Normal salt - Missing Link ½ cup/days PO - Herbal | New head wounds from coutship with Ratu |
| Dec-07 | - Normal salt - Missing Link ½ cup/days PO, empty supply on 6 Dec - Herbal - Hoof supplement 1 cup/day, begin 30 Dec | Hoof problem |

Medical Test Performed (all routine and special tests performed, including blood, faeces, urine, etc)

| TORGAMBA | Date | Tests performed | Results | Comments | |
|----------|---------------|---|---|---|--|
| Jan-07 | 16 | - blood hematology & chemistry - blood smear - serum (Ca:P) | - Hematology: Anemia (RBC, HB and PCV Low) and Chemistry (Bilirubin, Ureum, creatinin high) → Kidney disease - Positive Blood Parasites (<i>Theileria sp</i> 0,1%) - Fluctuate value | T's condition stabile. Blood smear analyzed in IPB Bogor. Blood collected on ear vein with standing method in the chute | |
| | weekly | - fecal | - Normal | | |
| | weekly | - urine | - SG 1.010 - 1.012, trace (protein) | | |
| Feb-07 | 5 | - blood hematology & chemistry - blood smear - serum (Ca:P) | - Hematology: Anemia (RBC, HB and PCV Low) and Chemistry (Bilirubin, Ureum, creatinin high) → Kidney disease - No identification - Stabile value | T's condition stabile. Blood collected on ear vein with standing method in the chute | |
| | weekly | - fecal | - Normal | | |
| | weekly | - urine | - SG 1.010 | | |
| Mar-07 | 3, 14 | - blood hematology & chemistry | - 3: Hematology: Anemia (RBC, HB and PCV Low) and Chemistry (Bilirubin, Ureum, creatinin high) → Kidney disease - 14: Hematology Anemia (RBC, HB & PCV Low) and Chemistry (Ureum, Creatinin high) | | |
| | | - blood smear | - Positive <i>Theileria, Babesia & Anaplasma</i> | | |
| | | - serum (Ca:P) | - in balance value | | |
| | 2 time / week | - fecal | - Normal | | |
| | | - urine | - SG 1.008 - 1.010, trace (protein) | | |
| Apr-07 | 3, 23 | - blood hematology & chemistry | - 3: Hematology Anemia (RBC, HB and PCV Low), High Monosit and Chemistry (Ureum, Creatinin, SGPT high) → Kidney disease - 23: Hematology Anemia (RBC, HB & PCV Low) and Chemistry (Ureum, Creatinin high) | | |
| | | - blood smear | - Positive <i>Theileria, Babesia & Anaplasma</i> | | |
| | | - serum (Ca:P) | - in balance rasio calcium-phospor | | |
| | 2 time / week | - fecal | - Normal | | |
| | | - urine | - SG 1.008 - 1.010, trace (protein) | | |
| May-07 | 23 | - blood hematology & chemistry | - 23: Hematology Anemia (RBC, HB & PCV Low) and Chemistry (Ureum, Creatinin high) → Kidney disease | | |
| | | - blood smear | - Positive <i>Theileria, Babesia & Anaplasma</i> | | |
| | | - serum (Ca:P) | - in balance rasio calcium-phospor | | |
| | 2 time / week | - fecal | - Normal | | |
| | | - urine | - SG 1.008 - 1.010, trace (protein) | | |
| Jun-07 | 2, 21 | - blood hematology & chemistry | - 2: Hematology Anemia (RBC 4.1, HB 11.5 Low but PCV Normal 34.5), high monosit and Chemistry (Bilirubin 0.6, Ureum 32, creatinin 2.77 high) → Kidney disease - 21: Hematology better (RBC 4.2, HB 11.5 and PCV 35.1), high eosin 9 and Chemistry (Ureum 22, creatinin 2.65 high) → Kidney disease | Stabile condition. Blood exam on ear vein with standing method in the chute | |
| | | - blood smear | - Positive <i>Theileria, Babesia & Anaplasma</i> | | |
| | | - serum (Ca:P) | - in balance rasio calcium-phospor | | |
| | 2 time / week | - fecal | - Normal | | |
| | | - urine | - SG 1.008 - 1.010, trace (protein) | | |
| Jul-07 | 9,31 | - blood hematology & chemistry | - 9: Hematology Anemia (RBC 4.62, HB 12.4 Low but PCV Normal 38.3 - 31: Hematology Anemia (RBC 3.07, HB 8.3 and PCV 25.1) and Chemistry (Ureum 50, creatinin 3.56 high) → Kidney problem | - Stabile condition until 20 July. - Very sick since 30 July | |
| | | 9 | - blood smear | | - Negative blood parasites |
| | | 9 | - serum (Ca:P) | | - Balance rasio calcium-phospor (123:57) |
| | | 2 time / week | - fecal | | - Ciliata + |
| | - urine | | - SG 1.005 - 1.010, trace (protein) | | |

| | | | | |
|---------------|-----------------------------------|---|--|--|
| Aug-07 | 1, 3, 6, 8, 9, 12, 13, 17, 19, 21 | - blood hematology & chemistry - Blood smear | - 1: Hematology: anemia (RBC 2.9, HB 7.8, PCV 29.8), eosin 10 and Kidney problem (Ureum 31, creat 2.77) - 3: Hematology: anemia (RBC 3.6, HB 9.7, PCV 23.6 and Kidney problem (Ureum 22, Creat 2.71) - 6: Kidney problem (Ureum 32, creat 3.3) - 8: Hematology: anemia (RBC 3.3, HB 9.0, PCV 27.2 and Kidney problem (Ureum 24, Creat 2.71) - 9: Hematology: anemia (RBC 3.8, HB 9.7, PCV 30.8), bilirubin 0.65 and Kidney problem (Ureum 42, creat 3.24) - 12: Hematology: anemia (RBC 3.0, HB 8.2, PCV 24.4), bilirubin 1 and Kidney problem (Ureum 48, creat 4.02) - 13: Hematology: anemia (RBC 3.77, HB 10, PCV 30.6), bilirubin 0.7 and Kidney problem (Ureum 45, creat 3.67) - 17: Hematology: anemia (RBC 3.77, HB 10, PCV 35.4) and Kidney problem (Ureum 36, creat 3.12) - 19: better (RBC 4.75, HB 12.4, PCV 38.4), bilirubin 0.81 and Kidney problem (Ureum 33, creat 3.19) - 21: good (RBC 4.75, HB 12.4, PCV 38.4) and Kidney problem (Ureum 40, normal creat 1.86) - 26: good (RBC 4.4, HB 11.2, PCV 34.2) and Kidney problem (Ureum 32, normal creat 1.41) - Positive Blood parasites (<i>Theileria sp</i> and <i>Anaplasma sp</i>) | (1) Torgamba looks very weak. Signs showed the possibility of deep dehydration (2) Looked stress in the stall especially in the chute. (3) More treatments & medical procedure in the stall (sedative, injection, infusion, palpation, noisy, more people, etc) (4) Blood collection & exam were done almost every 2-3 days (5) Torgamba seems prefer to release to big paddock but very risky to apply medical procedure if he did not want to back to the stall. (6) at 21 release to big paddock after 20 days only in the stall and boma at 3A, met Ratu and wandering around center area, looked happier, and entered paddock 1A (7) at 29 release again in big paddock 3A and since that never back to the stall, but looked more comfortable and more active in the forest, more browse and looked much less stress |
| | 12, 13 | - Serum (Ca:P) | - 12: Normal in ppm (Ca 124, P 44, Mg 80, K 168, Na 3065, Fe 1.25, Zn 0.5) 13: Normal in ppm (Ca 145, P 57, Mg 88, K 1350, Na 1495, Fe 0.7, Zn 2.05) | Balance ratio of Calcium Phosphor (124:44 and 145:57), means 3 : 1, which is good! |
| | 2 time/week | - Faecal - Urine | - Normal (little soft) - SG 1.005 - 1.010, protein trace - 0.3 | |
| | Sep-07 | 19 | - blood hematology & chemistry | - 19: Hematology: Anemia (RBC 3.33, HB 8.7 and PCV 25.8) and Chemistry (Ureum 28, creatinin 2.07 high) → Kidney problem |
| 2 time / week | | - fecal - urine | - Normal - Normal | After de-worming 20 sept |
| Oct-07 | 1, 26 | - blood hematology & chemistry | - 1: Hematology: RBC 4.18, HB 10.8, PCV 32.4, monosit 10) & Chemistry: Ureum 30, creat 3.35 - Kidney problem, Mineral: Ca 70, P 37. - 26: Hematology: RBC 3.91, WBC 8500, HB 10.1, PCV 30.6, monosit 9, Ureum 16, Creatinin 2.93, LDH 578. Mineral: Ca 79, P 24, Mg 105, K 150, Na 2400, Fe 1.00 and Zn 1.40 (ppm) | Stabile with sometime looks weakness and tired. Still easy to get the blood in the chute. |
| | 2 time / week | - fecal - urine | - Normal - Normal | |
| | Nov-07 | 22 | - Blood hematology and chemistry | - 22: Hematology: Soft Anemia (RBC 3.51, HB 9.2 and PCV 27.7) and Chemistry (Ureum 22, creatinin 2.66 high) → Still Kidney problem |
| 29 | | - fecal - urine | - Normal - Normal | |

| | | | | |
|--------|--------|---------------------------------------|---|---|
| Dec-07 | 7 | - Blood iSTAT, hematology & chemistry | - iSTAT result (CG 8+ AT pt 36.5, pH 7.496, PCO2 34.9, PO2 74), (G3+ AT pt 37, pH 7.448, PCO2 39.6, PO2 44, BE ecf 3. HCO3 27.4, TCO3 29 and SO2 82), BE ecf 4, HCO3 27.1, TCO3 28, SO2 96, Na 126, K 5, iCa 1.90, Glu 96. Stable (still low RBC 3.08, HB 8, PCV 24.3, Ureum 10, Creatinin 2.13 and other parameter are normal) | Easy to collect Serum for mineral, on going analysis in Bogor |
| | 23 | - Blood iSTAT, hematology & chemistry | - iSTAT result (CG 8+ AT pt 37, pH 7.376, PCO2 33, PO2 143), (AT pt 36.9, pH 7.379, PCO2 32.7, PO2 142), BE ecf -6, HCO3 19.3, TCO3 20, SO2 99, Na 127, K 4, iCa 1.01, Glu 69. Stable (still low RBC 3.73, HB 9.8, PCV 30.4, Ureum 33, Creatinin 2.47 and other parameter are normal) | |
| | weekly | - fecal - urine | - Normal - Normal | |

| BINA | Date | Tests performed | Results | Comments |
|--------|--------|---|---|--|
| Jan-07 | 24 | - Blood hematology & chemistry - blood smear | - Soft Anemia (HB & RBC low), Chemistry: normal - Positive Blood Parasites (<i>Theileria sp</i>) | Blood collected on ear with lay down method. Blood smear analyzed in IPB Bogor |
| | weekly | - fecal | - Normal | |
| | weekly | - urine | - Normal | |
| Feb-07 | 13 | - Blood hematology & chemistry - blood smear | - Soft Anemia (HB & RBC low), Chemistry: normal - Positive Blood Parasites (<i>Theileria sp</i>) | Blood collected on ear with lay down method. |
| | weekly | - fecal | - Normal | |
| | weekly | - urine | - Normal | |
| Mar-07 | 4 | - Blood hematology & chemistry - blood smear | - Soft Anemia (HB & RBC low), Chemistry: normal - Positive <i>Theileria, Babesia & Anaplasma</i> | Blood collected on ear with lay down method. |
| | weekly | - fecal | - Protozoa (<i>Ciliata</i> low) | |
| | weekly | - urine | - Normal | |
| Apr-07 | 7 | - Blood hematology & chemistry - blood smear | - Soft Anemia (HB & RBC low), Chemistry: normal - Positive <i>Theileria, Babesia & Anaplasma</i> | Blood collected on ear with lay down method. |
| | weekly | - fecal | - Protozoa (<i>Ciliata</i> low) | |
| | | - urine | - Normal | |
| May-07 | weekly | - fecal - urine | - Helminthes high (<i>Strongylus sp</i>) and Protozoa (low) - Normal | |
| Jun-07 | 11 | - Blood hematology & chemistry - Blood smear | - Hematology: high of RBC and HB. Chemistry: normal - Negative | Blood collected on ear with lay down method. |
| | weekly | - Fecal | - Protozoa (low) | |
| Jul-07 | 21 | - Blood hematology & chemistry - Blood smear | - Hematology: high of RBC and HB. Chemistry: normal - Negative | Blood collected on ear with lay down method. |
| | weekly | - Fecal | - Protozoa (ciliata +) | |
| | | - Urine | - Normal | |
| Aug-07 | 15 | - Blood hematology & chemistry - Blood smear | - Hematology: Normal - Chemistry: normal - Negative | Blood collected on ear with lay down method. |
| | weekly | - Fecal | - Normal | |
| | | - Urine | - Normal | |
| Sep-07 | | - No blood exam | | After de-worming 19 sept |
| | weekly | - fecal | - Normal | |
| | weekly | - urine | - Normal | |
| Oct-07 | | - No blood exam | | low |
| | weekly | - fecal | - Found Ciliata (protozoa) | |
| | weekly | - urine | - Normal | |
| Nov-07 | 22 | - Blood | - - | 22-25: Blood exam but unsuccess |
| | 29 | - fecal | - Normal: paramphistomum egg small quantities | |
| | | - urine | - Normal | |

| | | | | |
|---------------|--------|---------------------------------------|--|--|
| Dec-07 | 11 | Blood iSTAT | - iSTAT result (G3+ AT pt 37, pH 7.709, PCO2 8.7, PO2 148), BE ecf -9, HCO3 11, TCO3 11, SO2 100 | Difficult to collect |
| | 15 | Blood iSTAT | - iSTAT result (CG 8+ AT pt 37, pH 7.355, PCO2 36.9, PO2 42), (AT pt 36.9, pH 7.357, PCO2 46.7, PO2 41), BE ecf 1, HCO3 26.2, TCO3 28, SO2 74, Na 133, K 4.1, iCa 1.65, Glu 81. | Easy to collect |
| | 23 | - Blood iSTAT, hematology & chemistry | - iSTAT result (First CG 8+ AT pt 37, pH 7.418, PCO2 33.6, PO2 141), (AT pt 36.6, pH 7.424, PCO2 33, PO2 139), BE ecf -3, HCO3 21.7, TCO3 23, SO2 99, Na 121, K 3.6, iCa 0.56, Glu 72. (Second CG 8+ AT pt 37, pH 7.407, PCO2 35.4, PO2 165), (AT pt 36.6, pH 7.413, PCO2 34.7, PO2 163), BE ecf -2, HCO3 22.2, TCO3 23, SO2 100, Na 122, K 3.7, iCa no result?, Glu 73 Healthy (little bit low RBC 5.07, HB 13.2, PCV 38.8, Ureum25, Creatinin 1.24 and other parameter are normal) | Easy to collect Serum for mineral, on going analysis in Bogor |
| | weekly | - Fecal - urine | - Normal - Normal | |

| RATU | Date | Tests performed | Results | Comments |
|---------------|---------------|---|--|---|
| Jan-07 | weekly | - fecal - urine | - Normal - Normal | |
| | Feb-07 | weekly | - fecal - urine | - Normal - Normal |
| Mar-07 | 4 | - Blood hematology & chemistry - blood smear | - Soft Anemia (HB & RBC low), Chemistry: normal - Positive <i>Theileria</i> , <i>Babesia</i> & <i>Anaplasma</i> | Blood collected on tail with standing method in the chute |
| | weekly | - fecal | - Protozoa (<i>Ciliata</i> high) | |
| | weekly | - urine | - Normal | |
| Apr-07 | 30 | - Blood hematology & chemistry - blood smear | - Hematology: high of RBC and HB. Chemistry: normal - NA | Blood collected on tail with standing method in the chute |
| | weekly | - fecal | - Protozoa (<i>Ciliata</i> high) | |
| | weekly | - urine | - Normal | |
| May-07 | 25 | - Blood hematology & chemistry - blood smear | - Normal - NA | Blood collected on tail with standing method in the chute |
| | weekly | - fecal | - Protozoa (<i>Ciliata</i> high) | |
| | weekly | - urine | - Normal | |
| Jun-07 | 13 | - Blood hematology & chemistry - blood smear | - Normal - NA | Blood collected on tail with standing method in the chute |
| | weekly | - fecal | - Protozoa (<i>Ciliata</i> high) | |
| | weekly | - urine | - Normal | |
| Jul-07 | weekly | - fecal | - Protozoa (<i>Ciliata</i> high) | |
| | weekly | - urine | - Normal | |
| Aug-07 | 14 | - Serum (mineral) - blood smear | - Normal in ppm (Ca 168, Mg 62, K 3110, Na 1366, Fe 0.5, Zn 1.45) - Negative | Blood collected on tail with standing method in the chute |
| | weekly | - fecal | - Protozoa (<i>Ciliata</i> high) | |
| | weekly | - urine | - Normal | |
| Sep-07 | weekly | - fecal | - Normal | After de-worming 20 sept |
| | weekly | - urine | - Normal | |
| Oct-07 | | - No blood exam | | |
| | weekly | - fecal - urine | - Normal - Normal | |
| Nov-07 | 22 | - Blood | - | 22, 24 and 29: Blood exam but unsuccess |
| | 29 | - fecal | - Normal | |
| | | - urine | - Normal | |

| | | | | |
|---------------|--------|---------------------------------------|--|--|
| Dec-07 | 13 | Blood iSTAT | - iSTAT result AT pt 37, pH 7.376, PCO2 46.6, PO2 23 (AT pt 37.8, pH 7.365, PCO2 48.3, PO2 24), BE ecf 2, HCO3 27.3, TCO3 29, SO2 37, Na 131, K 4.9, iCa 1.51, Glu 79. | Difficult to collect |
| | 14 | Blood iSTAT | - iSTAT result AT pt 37, pH 7.4825, PCO2 36.7, PO2 172 (AT pt 37.5, pH 7.474, PCO2 37.5, PO2 175), BE ecf 4, HCO3 27.4, TCO3 29, SO2 100, Na 128, K 3.9, iCa 1.42, Glu 112. | Easy to collect |
| | 23 | - Blood iSTAT, hematology & chemistry | - iSTAT result AT pt 37, pH 7.445, PCO2 37.4, PO2 180 (AT pt 37.6, pH 7.436, PCO2 38.4, PO2 183), BE ecf 2, HCO3 25.7, TCO3 27, SO2 100, Na 128, K 3.7, iCa 1.03, Glu 86. Healthy (RBC 5.53, HB 13.2, PCV 40.2 and other parameter are normal) | Easy to collect Serum for mineral, on going analysis in Bogor |
| | weekly | - fecal | - Still founded Paramphistomum egg | Fluke still there |
| | | - urine | - Normal | |

| ROSA | Date | Tests performed | Results | Comments |
|---------------|-------------|---|---|--|
| Dec-06 | 30 | - blood (hematology) - blood chemistry | - Little low - Normal | |
| | weekly | - fecal | - Positive Trematoda (<i>fasciola sp</i>) or <i>paramphistomum sp</i> but low infection | |
| | weekly | - urine | - Normal | |
| Jan-07 | 24 | - Blood hematology - blood chemistry | - Hematology: little low - Normal | Blood collected on ear with lay down method. |
| | | - blood smear | - Positive <i>Theileria sp</i> 0.1 % | |
| | weekly | - fecal | - Normal | Blood smear analyze in IPB |
| | weekly | - urine | - Normal | |
| Feb-07 | weekly | - fecal | - Normal | |
| | weekly | - urine | - Normal | |
| Mar-07 | 3 | - Blood hematology - blood chemistry | - Normal - Normal | Blood collected on ear with lay down method. |
| | | - blood smear | - Normal | |
| | weekly | - fecal | - Protozoa (<i>Ciliata</i> high) | |
| | weekly | - urine | - Normal | |
| Apr-07 | 3 | - Blood hematology - blood chemistry | - Hematology: little low - Normal | Blood collected on ear with lay down method. |
| | | - blood smear | - Normal | |
| | weekly | - fecal | - Normal | |
| | weekly | - urine | - Normal | |
| | | | | |
| May-07 | 23 | - Blood hematology - blood chemistry | - Hematology: little low - Normal | Blood collected on ear with lay down method. |
| | | - blood smear | - Normal | |
| | weekly | - fecal | - Normal | |
| | weekly | - urine | - Normal | |
| | | | | |
| Jun-07 | 6 | - Blood hematology - blood chemistry | - Hematology: little low - Normal | Blood collected on ear with lay down method. |
| | | - blood smear | - Normal | |
| | weekly | - fecal | - Protozoa (<i>Ciliata</i> high) | |
| | weekly | - urine | - Normal | |
| | | | | |
| Jul-07 | weekly | - fecal | - Protozoa (<i>Ciliata</i> high) | |
| | weekly | - urine | - Normal | |
| Aug-07 | 14 | - Blood hematology - blood chemistry | - Hematology: little low - Normal | Blood collected on ear with lay down method. |
| | | - blood smear | - Normal | |
| | | - Serum (mineral) | - Normal in ppm (Ca 127, P 17, Mg 56, K 2910, Na 1215, Fe 0.6, Zn 1.95) | |
| | | - fecal | - Normal | |
| | | - urine | - Normal | |
| | | | | |

| | | | | |
|---------------|--------|---|---|---|
| Sep-07 | 19 | - fecal | - Paramphistomum eggs and larva adult fluke. Result worm analysis at IPB Bogor: Paramphistomum sp | After de-worming 18 sept result: a day after treatment founded adult worm/fluke of Param- phistomum sp. Day-1 (Little), day 2 (a lot, 50% worm and 50% fecal), day-3 (only one) and day- 4 (empty). |
| | weekly | - urine | - Normal | |
| Oct-07 | 2, 26 | - Blood hematology | - 2: RBC 5.27, HB 12.4, PCV 37.8 - 26: RBC 6.03, WBC 6400, HB 13.9, PCV 43.6, Ureum 17, Creatinin 0.98, LDH 574). Mineral: Ca 39,P 22 | Little bit difficult to get the blood in the concrete |
| | 10, 21 | - Fecal | - Paramphistomum eggs 4. Result worm/fluke analysis at IPB Bogor: Paramphistomum sp | |
| | weekly | - urine | - Normal | 21: founded few adult fluke (paramphistomum sp). Day-1 (5- 6/ball), day-2 (5/defecate),day-3 empty |
| Nov-07 | 22 | - Blood Hematology | - Healthy (RBC 6.54, HB 15.7 and PCV 47.5). Only hematology | Difficult to get the blood, she didn't lay down position |
| | 29 | - fecal - urine | - Egg fluke 1-2/slide and protozoa - Normal | |
| Dec-07 | 13 | Blood iSTAT | - iSTAT result AT pt 37, pH 7.376, PCO2 46.6, PO2 23 (AT pt 37.8, pH 7.365, PCO2 48.3, PO2 24), BE ecf 2, HCO3 27.3, TCO3 29, SO2 37, Na 131, K 4.9, iCa 1.51, Glu 79. | Difficult to collect |
| | 14 | Blood iSTAT | - iSTAT result AT pt 37, pH 7.4825, PCO2 36.7, PO2 172 (AT pt 37.5, pH 7.474, PCO2 37.5, PO2 175), BE ecf 4, HCO3 27.4, TCO3 29, SO2 100, Na 128, K 3.9, iCa 1.42, Glu 112. | |
| | 23 | - Blood iSTAT, hematology & chemistry | - iSTAT result AT pt 37, pH 7.445, PCO2 37.4, PO2 180 (AT pt 37.6, pH 7.436, PCO2 38.4, PO2 183), BE ecf 2, HCO3 25.7, TCO3 27, SO2 100, Na 128, K 3.7, iCa 1.03, Glu 86. Healthy (RBC 5.53, HB 13.2, PCV 40.2 and other parameter are normal) | Easy to collect Serum for mineral, on going analysis in Bogor |
| | weekly | - fecal - urine | - Still founded Paramphistomum egg - Normal | |

| ANDALAS | Date | Tests performed | Results | Comments |
|----------------|--|--|---|--|
| Feb-07 | 21, 24, 26 | - Blood hematology & chemistry - blood smear | - Normal - Positive <i>Theileria, Babesia & Anaplasma</i> | Stabile condition. Blood collected on tail with standing method in the chute. & on ear with lay down method |
| | 2 time / week | - fecal - urine | - Normal - SG 1.008 - 1.010, trace (protein) | |
| Mar-07 | 1,2,3,5, 7, 8,10, 12,14, 16,18, 20,22, 24 | - Blood hematology & chemistry - blood smear | - Normal for general with fluctuated value of RBC and HB (March 7, 10) - Positive <i>Theileria, Babesia & Anaplasma</i> | Stabile condition. Blood collected on ear with lay down method |
| | daily | - fecal - urine | - Normal - SG 1.010 | |
| Apr-07 | 3, 7, 14, 23, 30 | - Blood hematology & chemistry - blood smear | - Little low of RBC & HB. Chemistry normal - Positive <i>Theileria, Babesia & Anaplasma</i> | Stabile condition. Blood collected on ear with lay down method |
| | 2 time / week | - fecal - urine | - Normal - SG 1.010 | |
| May-07 | 9, 25 | - Blood hematology & chemistry - blood smear | - Little low of RBC & HB. Chemistry normal - Positive <i>Theileria, Babesia & Anaplasma</i> | Stabile condition. Blood collected on ear with lay down method |
| | 2 time / week | - fecal - urine | - Normal - SG 1.010 | |

| | | | | |
|---------------|----------------|---|--|---|
| Jun-07 | 7,21, 29 | - Blood hematology & chemistry - blood smear (7) - serum | - Little bit low of RBC 4.37, HB 11.9 and PCV 34.3. Chemistry: Normal - Positive <i>Theileria, Babesia & Anaplasma</i> but low - In balance Ca:P (8.2:1) | Dr. Radcliffe think Andalas not significantly weight gain. Try to improve with food supplement might be similar with Torgamba. Sign of inbalance Ca : P metabolism problem? |
| | 2 time / week | - fecal - urine | - Normal - SG 1.010 | |
| Jul-07 | 3, 9, 16, 26 | - Blood hematology & chemistry - blood smear (3) - serum | - 9, 16, 26: Little bit low of RBC & HB. Chemistry: Normal - Positive <i>Theileria, Babesia & Anaplasma</i> - little inbalance Ca:P (4.2:1) | Stabile condition. |
| | 2 time / week | - fecal - urine | - Normal - Normal | |
| Aug-07 | 13 (night), 26 | - Blood hematology & chemistry - blood smear (13) - serum | - 13: Little bit low of RBC 4.66 & HB 12.5. 26: Little low of RBC 4.87 Chemistry: Normal - Positive <i>TheileriaV & Anaplasma</i> but low - Normal in ppm (Ca 141, P 27, Mg 59, K 1560, Na 1418, Fe 0.7, Zn 1.5) | Stabile condition. |
| | 2 time / week | - fecal - urine | - Normal - Normal | |
| Sep-07 | 19 | - Blood hematology & chemistry | - Healthy (RBC 5.37, HB 13.9 and PCV 40.6). Mineral on going analysis | Little bit drop after dental float (~3 days) After de-worming 20 sept |
| | 2 time / week | - fecal - urine | - Normal - Normal | |
| Oct-07 | 19 | - Blood hematology & chemistry | - 1: little bit low (RBC 4.9, HB 12.7, PCV 6.8). Mineral: Ca 56,P 29 - 26:RBC 5.30, WBC 8300, HB 13.8, PCV 39.5, Ureum 19, Creatinin 1.02, LDH 684). Mineral: Ca 44, P 22, Mg 41, K 130, Na 2488, Fe 1.80 and Zn 1.70 (ppm) | Little bit drop after dental float (~3 days) |
| | 2 time / week | - fecal - urine | - Normal - Normal | |
| Nov-07 | 22 | - Blood hematology & chemistry | - Healthy (RBC 4.97, HB 12.8 and PCV 37.1), chemistry are normal | Still easy get the blood |
| | 29 | - fecal - urine | - Normal - Normal | |
| Dec-07 | 7 | - Blood hematology & chemistry | - iSTAT result AT pt 37, pH 7.414, PCO2 41.1, PO2 52, BE ecf 2, HCO3 26.3, TCO3 26, SO2 87, Na 133, K 4.8, iCa 1.64, Glu 78. Healthy (RBC 5.77, HB 14.8 and PCV 42.8 and other parameter are normal) | Easy to collect Serum for mineral, on going analysis in Bogor |
| | 23 | - Blood hematology & chemistry | - iSTAT result AT pt 37, pH 7.395, PCO2 35, PO2 147, BE ecf -3, HCO3 21.4, TCO3 22, SO2 99, Na 127, K 4, iCa 1.01, Glu 69. Healthy (little bit low RBC 5.04, HB 13, PCV 38.2 and other parameter are normal) | |
| | weekly | - fecal - urine | - Normal - Normal | |

Health Problems

| TORG. | Date | Descriptions | Actions Taken | Duration & Comments |
|--------|-----------------|--|---|---|
| Jan-07 | - Daily | - Stable chronic kidney diseases - Foot problems (infection) - Ectoparasite (tick, lice, flies) | - Herbal - Cleaning, topical "mix-salp" - Manual remove and fly repellent | Good health. Pad: looks clean & better. 'Mix-salp' or <i>salep campur</i> is mix of antibiotic, antiseptic & antifungal salps |
| | - 2 | - Blood parasite (<i>Theileria sp</i> 0,1%) | - No spesific treatment | |
| Feb-07 | - Daily | - Stable chronic kidney diseases - Foot problems (infection) - Ectoparasite (tick, lice, flies) | - Herbal - Cleaning, topical "mix-salp" - Manual remove and fly repellent | |
| Mar-07 | - Daily | - Stable chronic kidney diseases - Foot problems (infection) - Ectoparasite (tick, lice, flies) | - Herbal - Cleaning, topical "mix-salp" - Manual remove and fly repellent | Godd health Pad: Stable |
| Apr-07 | - Daily | - Weakness & Chronic kidney diseases - Ectoparasite (tick, lice, flies) | - Herbal and given Vitamin (Neurobion) 10 tabs PO for 3 days - Manual remove | |
| | - Daily, 12, 15 | - Foot problems (infection) | - Cleaning, change 'mix-salp' with Hoof solution (12) & change again with Hoof | Much better |
| | - 22 | - Head wound | - Cleaning, betadine+saline, Peroxide, 'mix-salp' & SWAT | Occurred after courtship. Healed in 5 days |
| May-07 | - Daily | - Chronic kidney diseases - Ectoparasite (tick, lice, flies) - Foot problems (infection) | - Herbal - Manual remove - Cleaning, Hoof dressing until 15, then change with 'mix-salp' | Much better after 'mix-salp' |
| | 2 | - Head wound | - Cleaning, betadine+saline, peroxide, 'mix-salp' & SWAT | After courtship with Ratu. |
| Jun-07 | - Daily | - Chronic kidney diseases - Ectoparasite (tick, lice, flies) - Foot problems (infection) | - Herbal - Manual remove - Cleaning, topical "mix-salp" | Much better after 'mix-salp' |
| Jul-07 | - Daily | - Chronic kidney diseases - Ecto Parasite - Pad problem | - Herbal - Manual remove - Cleaning, 'mix salp' | Pad much better Condition until 20 of July is very good |
| | - 21 | - Eye problem L | - ZnSO4 and AB topical ointment | |
| | - 30 - 31 | - Drop condition | - No treatment yet (avoid entered stall) | Looks very weak (still in the forest) |
| Aug-07 | - 1-31 | - Drop condition (loss appetite & body weight, lethargy, muscle shaking, weakness), most possibility is electrolyte disorder | - IV fluids Infusion (lactate ringer, saline, amino acid) with mild-mid sedative (butophanol & azaperone), antibiotic (TMS & certiofur), amino acid-electrolyte PO, vitamin B (PO & IM), Bilosalamin (ATP) IV & IM, and | Assited by Dr. Benn Bryant (Western Plains Zoo), Dr. M. Agil (IPB) and distance consult with Dr. Robin Radcliffe (IRF-Cornell Univ) |
| | - 24 | - Pad problem - Ecto Parasite - Skin wounds | - Cleaning, iodine, "mix-salp" - Manual remove - mix-salp' & SWAT | Pad problem with clinical signs thin and soft of pad and wound More tabanidae |
| Sep-07 | - Daily | - Weakness (become better) - Ecto Parasite - Pad problem | - No special treatment, only Neurobion10 tab 2x/week; release to big paddock - Manual remove - Cleaning, Salep Campur (no often, because not always entered stall) | More activities in the forest is good therapy, mush less stress: forest browsing, fruits - leafs hand feeding & enough water; Keeper guarded 24 hours in the forest till now. |
| | - 19 | - Point molar and incisors teeth | - Dental floating using Power Float instrument under anesthesia with buthorphanol & azaperone - Antibiotic TMS 15 tab/ 5 days | No affect after dental float: eating good and even much more browsing |
| | - 20 | - Routine De-worming | - Albendazole 55 ml | No flukes/eggs after deworming |
| Oct-07 | - Daily | - Better condtion but not much (stable) - Pad problem | - No spesific treatment - No treatment | Active in the forest at 1 - 16 October, but then move to boma at 17 - 31 Oct. Looked enjoy. No stress. |
| Nov-07 | - Daily | - Ectoparasite (tick, lice, flies) | - Manual remove (low infestation) | Good condition |
| Dec-07 | - Daily | - Ectoparasite (tick, lice, flies) - Pad have small holes | - Manual remove (low infestation) | Good condition |

| BINA | Date | Descriptions | Actions Taken | Duration & Comments |
|---------------|-----------------------|---|---|--|
| Jan-07 | - Daily | - Eye problem (white spot) - Ectoparasite (tick, lice, flies) - Soft anemia | - Zink Sulfate 2% - Manual remove - Vitamin (Neurobion 10 tabs) for 3 days | |
| Feb-07 | - Daily | - Eye problem (white spot) - Ectoparasite (tick, lice, flies) - Soft anemia | - Zink Sulfate 2% - Manual remove - No treatment | foot problem: Laceration, tenderness, pain, lameness when walking. At 20 less pain. Feb 22 founded laceration on skin. Feb 24 healing process. |
| | - 18 | - Laceration of foot skin (right rear) and lameness | - Hoof solution Kevin bacon and TMS 10 tabs/day for 10 days | |
| Mar-07 | - Daily | - Eye problem (white spot) - Ectoparasite (tick, lice, flies) - Soft anemia - Foot problems | - Zink Sulfate 2% - Manual remove - No special treatment - Hoof solution Kevin bacon and TMS 10 tabs/day for 10 days | Foot problem better |
| Apr-07 | - Daily | - Eye problem (white spot) - Ectoparasite (tick, lice, flies) - Soft anemia - Foot problems | - Zink Sulfate 2% - Manual remove - No special treatment - Cleaning, Hoof dressing | Foot problem much better |
| May-07 | - Daily | - Ectoparasite (tick, lice, flies) - Soft anemia - Foot problems | - Manual remove - No special treatment - Cleaning, Hoof dressing | Foot problem much better |
| | 23 | - Left eye problem (white spot) | - Zink Sulfate 2% & Garamycin topical ointment | total white & discharge. Become heal after start treatment |
| | | - Diarrhea: Helminthes Strongylus sp) high infection | - TMS 10 tab/day for 10 days and Ivermectin plus 50 cc PO | A day after given TMS, Stoll start hard |
| Jun-07 | - Daily | - Ectoparasite (tick, lice, flies) - Left eye problem (white spot) - Foot problems - right ear wound | - Manual remove - No special treatment - Cleaning, Hoof dressing - Cleaning, betadine, mix salp and fly repellent | Eye much better |
| Jul-07 | - Daily | - Ectoparasite (tick, lice, flies) - Foot problems - Eye problem (white spot) | - Manual remove - Cleaning, hoof dressing - Zink Sulfate | Good |
| Aug-07 | - Daily - Since 21 | - Ectoparasite (tick, lice, flies) - Head wounds - Eye problem (white spot) | - Manual remove - TMS 10 tabs PO, cleaning, betadine+saline, 'mix-salp' & fly repellent - Zink Sulfate | After fighting when introducing first time with andalas between gate. |
| Sep-07 | - Daily | - Ectoparasite (tick, lice, flies) - Head wounds - Eye problem (white spot) | - Manual remove - Cleaning, betadine, 'mix salp' and fly repellent - Zink Sulfate | Head wounds almost healed Little cloudy at right eye |
| | - 19 | - Routine De-worming | - Albendazole 55 ml | No flukes/eggs after deworming |
| Oct-07 | - Daily | - Ectoparasite (tick, lice, flies) - Eye problem (white spot) - Pad problem (crack lines) | - Manual remove - Zink Sulfate - Cleaning with sulfur soap | Normal Better & no serious crack |
| Nov-07 | - Daily | - Ectoparasite (tick, lice, flies) - Foot problems | - Manual remove (low infestation) - Cleaning, 'mix salp' | Good |
| Dec-07 | - Daily | - Ectoparasite (tick, lice, flies) - Pad - good and stabile | - Manual remove (low infestation) - Cleaning with soap and 'mix salp' | Good |

| RATU | Date | Descriptions | Actions Taken | Duration & Comments |
|---------------|-------------|---|--|--|
| Jan-07 | - Daily | - Ectoparasite (tick, lice, flies) | - Manual remove | |
| Feb-07 | - Daily | - Foot/pad problems - Ectoparasite (tick, lice, flies) | - Cleaning, 'mix salp' - Manual remove | Difficult to treat pad because Ratu can't lay down |
| Mar-07 | - Daily | - Foot/pad problems - Ectoparasite (tick, lice, flies) | - Cleaning, 'mix salp' - Manual remove | Pad stabile condition |
| Apr-07 | - Daily | - Foot/pad problems - Ectoparasite (tick, lice, flies) | - Cleaning, hoof dressing - Manual remove | Pad much better |
| May-07 | - Daily | - Foot/pad problems - Ectoparasite (tick, lice, flies) - More sweat | - Cleaning, hoof dressing - Manual remove - No treatment | Pad much better |
| Jun-07 | - Daily | - Foot/pad problems - Ectoparasite (tick, lice, flies) - More sweat | - Cleaning, hoof dressing - Manual remove - No treatment | Pad stabile condition |
| Jul-07 | - Daily | - Ectoparasite (tick, lice, flies) - Foot problems | - Manual remove - Cleaning, hoof dressing | good Foot problem much better |

| | | | | |
|---------------|------------------------------|--|---|---|
| Aug-07 | - Daily | - Ectoparasite (tick, lice, flies) - Foot problems | - Manual remove - Cleaning, hoof dressing | Lots of tabanidae (stall) Foot/pad much better |
| Sep-07 | - Daily - Since 9 - 20 | - Ectoparasite (tick, lice, flies) - Head and left ear wound - Routine De-worming | - Manual remove - TMS 10 tabs PO, cleaning, betadine+saline, 'mix-salp' & fly repellent - Albendazole 55 ml | good Hard courtship with Andalus No flukes/eggs after deworming |
| Oct-07 | - Daily | - Ectoparasite (tick, lice, flies) - Head and left ear wound - Pad problem (crack lines) | - Manual remove - Cleaning, betadine, 'mix salp' and fly repellent - Cleaning with sulfur soap & 'mix salp' | good Better Better & no serious crack |
| Nov-07 | - Daily | - Ectoparasite (tick, lice, flies) - Foot problems | - Manual remove (low infestation) - Cleaning, 'mix salp' | Good |
| Dec-07 | - Daily | - Ectoparasite (tick, lice, flies) - Foot problems (better) | - Manual remove (low infestation) - Cleaning with soap and 'mix salp' | Good |

| ROSA | Date | Descriptions | Actions Taken | Duration & Comments |
|---------------|-------------------------|--|---|---|
| Jan-07 | - Daily | - Foot/pad problems | - Cleaning, 'mix salp' | Pad problem good progress |
| | | - Ectoparasite (tick, lice, flies) | - Manual remove | |
| Feb-07 | - Daily | - Foot/pad problems | - Cleaning, 'mix salp' | Pad problem much better |
| | | - Ectoparasite (tick, lice, flies) | - Manual remove | |
| Mar-07 | - Daily | - Foot/pad problems | - Cleaning, 'mix salp' | Pad problem much better |
| | | - Ectoparasite (tick, lice, flies) | - Manual remove | |
| Apr-07 | - Daily | - Ectoparasite (tick, lice, flies) - Soft anemia | - Manual remove - No special treatment | |
| | - 4 | - Foot problems | - Cleaning, Hoof Solution (Kevin bacon) | Foot problem much better |
| May-07 | - Daily | - Foot/pad problems | - Cleaning, 'mix salp' (since 17 May) | Pad was worse & after change treatment become better |
| | | - Ectoparasite (tick, lice, flies) | - Manual remove | |
| Jun-07 | - Daily | - Ectoparasite (tick, lice, flies) - Soft anemia - Foot problems | - Manual remove - No special treatment - Dipping every 2 days, 'mix-salp' | Foot problem much better |
| Jul-07 | - Daily | - Ectoparasite (tick, lice, flies) - Foot problems | - Manual remove - Cleaning, hoof dressing | good Foot problem much better |
| Aug-07 | - Daily | - Ectoparasite (tick, lice, flies) - Foot problems | - Manual remove - Cleaning, 'mix salp' | Lots of tabanidae (stall) Good |
| Sep-07 | - Daily - 18 | - Ectoparasite (tick, lice, flies) - Foot problems - Routine De-worming | - Manual remove - Cleaning, 'mix salp' - Albendazole 46 ml PO | Found Paramphistomum eggs & fluke 24 hours after deworming |
| Oct-07 | - Daily - 16 - 18 | - Ectoparasite (tick, lice, flies) - Foot problems - Broken tooth - Repeat de-worming | - Manual remove - Cleaning with sulfur soap & 'mix salp' - No treatment - Albendazole 46 ml PO | Pad: Better and not serious crack Tooth: Could not locate the position, difficult to open her mouth. Analysis: Young/baby teeth (deciduous premolar caps). No seroius problem. |
| Nov-07 | - Daily | - Ectoparasite (tick, lice, flies) - Foot problems | - Manual remove (low infestation) - Cleaning, 'mix salp' | Good |
| Dec-07 | - Daily | - Ectoparasite (tick, lice, flies) - Foot problems (better) | - Manual remove (low infestation) - Cleaning with chlorhexidine and 'mix salp' | Good |

| AND. | Date | Descriptions | Actions Taken | Duration & Comments |
|---------------|-------------|--|--|--|
| Feb-07 | - Daily | - Ectoparasite (tick) - Blood parasite (<i>Theileria sp.</i> , <i>Babesia sp.</i> , <i>Anaplasma sp.</i>) - pad problems (small infection) | - Manual remove - No spesific treatment - Cleaning, 'mix-salp' | Quarantine period since 21 Feb Have some small holes in the pad |
| Mar-07 | - Daily | - Ectoparasite (tick) - Blood parasite (<i>Theileria sp.</i> , <i>Babesia sp.</i> , <i>Anaplasma sp.</i>) - pad problems (small infection) | - Manual remove - No spesific treatment - Cleaning, change hoof solution | Quarantine period since 24 March Pad: better |
| Apr-07 | - Daily | - Ectoparasite - Blood parasite (<i>Theileria sp.</i> , <i>Babesia sp.</i> , <i>Anaplasma sp.</i>) - pad problems (small infection) | - Manual remove - No spesific treatment - Cleaning, hoof solution | Quarantine period since 24 March Pad: better & almost normal |
| May-07 | - Daily | - Ectoparasite - pad problems | - Manual remove - Cleaning, hoof solution | Pad: better & almost normal |
| Jun-07 | - Daily | - Ectoparasite - pad problems | - Manual remove - Cleaning, hoof solution | Pad: better & almost normal |
| Jul-07 | - Daily | - Ectoparasite - pad problems | - Manual remove - Cleaning, hoof solution | Pad: good |

| | | | | |
|---------------|---------|---|--|---|
| Aug-07 | - Daily | - Ectoparasite - pad problems | - Manual remove - Cleaning, hoof solution | |
| | - 21 | - Head & pad wounds after fight with Bina | - TMS 10 tabs PO, cleaning, betadine+saline, 'mix-salp' & fly repellent | Head: small skin lost around horns Pad: front L founded injury after fight |
| Sep-07 | - 9 | - Head & pad wounds after fight with Ratu | - Cleaning, betadine, mix salp, peroxide & fly repellent | Bigger skin lost around horns but healed quickly. |
| | - 19 | - Point molar and incisors teeth | - Dental floating using Power Float instrument under light anesthesia with buthorphanol & azaperone - Antibiotic TMS 15 tab/ 5 days | Loss appetite after dental float, but recover slowly after 4 days, day by day much better |
| | - 20 | - Routine De-worming | - Albendazole 55 ml | No flukes/eggs after deworming |
| Oct-07 | - Daily | - Head wound (around horn) - Pad problem (small holes) since mid of Oct. | - Betadine, reavmol, 'mix salp' & fly repellent - Cleaning with Chlorhexidine & 'mix salp' | Coutship with Ratu |
| Nov-07 | - 13 | - Head wounds after hard courtship with Ratu | - Cleaning, betadine, mix salp, peroxide, rivanol & fly repellent | Bigger skin lost around horns. 25: better |
| | - Daily | - Ectoparasite (tick, lice, flies) | - Manual remove (low infestation) | |
| Dec-07 | Daily | - Head wounds complete healed | - mix salp & fly repellent | |
| | Daily | - Foot problems | - Cleaning with chlorhexidine and 'mix salp' | Better |
| | 21 | - Corona eruption (white line) | - Hoof solution, special mix salp | Cause often urine and scrap |
| | - Daily | - Ectoparasite (tick, lice, flies) | - Manual remove (low infestation) | under control |

Male Reproductive Events *(all pairing & mating events)*

| TORG. | Date | Pairing | Matings | Duration & Comments |
|--------|-------|---------------|---------------|---|
| Jan-07 | 2 | with Bina | mating | mounting at 18.55 for 27 minutes (full intromission for 20 minutes & ejaculation, success to collect semen from penis and vagina but mix with mud; examine: no sperm) |
| | 15 | with Ratu | mating | mounting at 18.52 (full intromission for 13 min), 19:25 (full intromission for 19 minutes & ejaculation, success to collect semen from penis and vagina but mix with mud; examine: no sperm) |
| Feb-07 | 3 | with Ratu | mating | mounting Ratu at 18.57 (full intromission for 42 min & ejaculation, success to collect semen from penis and vagina but mix with mud; examine: few sperm) |
| | 23 | with Ratu | mating | Mounting Ratu at 13.33 (full intromission for 27 min & ejaculation, success to collect semen from penis and vagina; examine: few sperm) |
| Mar-07 | 10 | with Ratu | mating | mounting Ratu at 14.37 (full intromission for 38 min & ejaculation, success to collect semen from penis and vagina but mix with mud; examine: found few sperm). Personnel: Dedi, Sunar, Sugiono, Parlan |
| Apr-07 | 2 | with Ratu | mating | mounting Ratu 6 times at afternoon (full intromission for 38 min & ejaculation, success to collect semen from penis and vagina but mix with mud and urine; examine: found few sperm). Early night separated them. Personnel: Dedi, Sunar, Rois, Iswanto, Parlan, Lamijo |
| | 13 | with Rosa | no mounting | Torgamba looks interest and try approach but Rosa run away |
| | 22 | with Ratu | mating | Mounting Ratu at early night (full intromission for 32 min & ejaculation, success to collect semen from penis and vagina but mix with mud and urine; examine: found few sperm). Personnel: Dedi, Sunar, Rois, Iswanto, Yuhadi, Lamijo |
| May-07 | 2 | with Ratu | no mounting | Good courtship but nothing mounting. Personnel: Dedi, Sunar, Rois, Iswanto, Parlan |
| | 22 | with Ratu | mating | Good courtship and success intromission by Torgamba. Torgamba mounting Ratu time with once full intromission for 42 minutes. Success collect the semen and founded few spermatozoa, Personnel: Dedi, Sunar, Rois, Lamijo, Iswanto |
| Jun-07 | 5 | with Ratu | mating | Mounting Ratu at early night (full intromission for 8 and 34 min & ejaculation, success to collect semen from penis but mix with mud and urine; examine: found few sperm). Personnel: Dedi, Andri, Sunar, Parlan, Iswanto, Yuhadi, Sumadi, Robin, Benn, Jennifer |
| | 25 | with Ratu | mating | mounting Ratu at early night (full intromission for 42 min & ejaculation, success to collect semen from penis but mix with mud; examine: not found sperm). Personnel: Dedi, Rois, Sunar, Parlan, Iswanto, Lamijo |
| | 26 | with Rosa | Introduced | Good response from Torgamba but Rosa run away and afraid |
| Jul-07 | 1 & 3 | with Rosa | Introduced | Rosa still afraid and avoid |
| | 8 | with Bina | no mounting | Bina always avoid when Torgamba approach |
| | 13 | with Ratu | No mounting | Ratu not ready yet, then separated |
| | 15 | with Ratu | mating | Good courtship and success breeding with full intromission for 38 minutes. Personnel: Andri, Sunar, Rois |
| Aug-07 | 11 | with Ratu | Between fence | Health problem but look interest and more active when see female |
| | 29 | with Bina | Between fence | Looked interest too but condition still weak |
| Sep-07 | | No met female | | Health problem |
| Oct-07 | 2 | with Ratu | mating | Good sexual behavior and successful intromission for 23 minutes with 4 times mounting. He looks interest but not strong body condition. |
| | 25 | with Ratu | mating | Good sexual behavior and successful intromission for 41 minutes with 4 times mounting. Semen analysis only found 1 good spermatozoa |
| Nov-07 | 14 | with Ratu | mating | am: release from Boma and he walking approach to the centre. Few minutes there and released to the centre. Than courtship and mounting but not erection yet. After mounting 3 times he chase her and looks aggressive. Successful intromission for 36 minutes and ejaculation. He mounting 7x with 3 erection. Get semen from penis after breeding but not found sperm under microscope |
| Dec-07 | 6 | with Ratu | mating | 24: am: release from Boma and drive him approach to the centre. Released to the centre. Than courtship and mounting but not erection yet. He 9 mounting with 6 erection. Successful intromission for 42 minutes and ejaculation. Can't collect sement post breeding |
| | 24 | | | 24: am: release from Boma and drive him approach to the centre. Released to the centre. First he direct chese her for an hour. Than courtship and mounting but not erection yet. he 9 mounting with 3 erection. Successful intromission for 44 minutes and ejaculation. Get semen from penis after breeding but not found sperm under microscope |

| AND. | Date | Pairing | Matings | Duration & Comments |
|--------|----------------|-----------|-------------------------------|--|
| Feb-07 | - | - | - | Quarantine period |
| Mar-07 | - | - | - | Quarantine period |
| Apr-07 | - | - | - | Adaptation period |
| May-07 | - | - | - | Adaptation period and release to big paddock on May 30 |
| Jun-07 | 5 | - | - | First time approaching center area. Heard sound of Bina and Ratu and run away, looks afraid and didn't want back to center area |
| | 9 | with Rosa | Introduce (between the fence) | Introduce to Rosa between fence. He looked interest & new behaviour was observed: high spray urine, kicking ground, destroy bushes, attacked and chasing. Good response from Rosa. |
| | 10, 12 | with Rosa | Introduce (between the fence) | Same behaviour, more aggressive and chasing |
| Jul-07 | 20 | with Rosa | Introduce (between the fence) | And in the center area and Rosa in paddock K4. First time met Andalas and Rosa running away and keepers drive them back close to the gate but not success. Then Andalas entered paddock K5 and Rosa entered to center area, then they met between K5 gate (Andalas more aggressive and chase but Rosa not afraid). |
| Aug-07 | 5, 17 - 19, 21 | with Ratu | Between fence | Andalas in the paddock K5 and Ratu in the center area except at 21 morning (Ratu in the stall and Andalas in the center area) and good response with head to head, pushing, no fight and Ratu few times present her back; need separated them. Summary: Andalas had good response with Ratu for sexual behaviors but we still not sure if bring together in the center. Note: usually introduce them for ~ 30 minutes; Andalas everyday approaching center area (quiet difficult drive him back to the stall). Plan: continue introduce and try pairing with good anticipation (especially fighting). |
| | 21 | with Bina | Between gate | After short soft head to head but suddenly become aggressive; hard head to head serious fighting and got injuries, difficult to separate, but finally separate after 14 minutes. No good response from both (danger). Note: Almost every day penis erection in the stall since Feb-07. |
| Sep-07 | 9 | with Ratu | Pairing but no mating | First time Andalas together with female in the central area. Andalas start to be aggressive and attack. Ratu defense for a while. Then Ratu back attack after Andalas bites her left ear. Normal courtships for the rhino. They were chasing each other, and finally Ratu chase Andalas. Andalas ran away. They were separated because seems Ratu was very aggressive. |
| | 15 | with Rosa | Between gate | Andalas in the central stall and Rosa in central area. It was peace courtship. Good reaction from Rosa, not ran away like before. |
| | 16, 17 | with Rosa | Between gate then pairing | Introduce between gate first then shortly just release Andalas. First time together with Rosa. Rosa always run. Andalas looked confused, not too brave but sometime chasing inconsistently. No good courtship. |
| | 20, 28 | with Rosa | Between gate then pairing | Again after good courtship between gate, Rosa run away when they are together. There was a time when more closer head to head but Rosa suddenly run and andalas chase. |
| Oct-07 | 1, 2, 3 | with Ratu | Between gate | 1, 2 and 3: Andalas still has aggressive behavior, strike horn and rough courtship. |
| | 5 | with Ratu | Between gate then pairing | 5: between fence for half an hour: a few times Ratu make lay down position during courtship. Then bring them together in central area. Good courtship, less aggressive from Andalas and this time he success to control Ratu emotion. |
| | 19, 20 | with Rosa | Between gate | 19 late afternoon: very good courtship between fence's bar from both. Then joined him in the center area. Rosa looked ready to breed with standing up position in front of stall, suddenly And chase her and she run away. After that she looked afraid and escapes to Ratu's paddock. Drive by keeper to center area again and then released to her paddock and walked away. 20: Rosa looked afraid and alert but good drive by keeper approach to the center stall. Few minutes courtship and than pairing in the center area. She still afraid and he chase her. She ran away and afraid. Released to her paddock and walked away. |
| | 21, 24 | with Ratu | Between gate | 21: Friendly and good courtship between fence's bar. Note: She didn't have good follicle. 24: Friendly and good courtship between fence's bar, continuing pairing in central area, take a long time soft courtship. General: better sexual behaviors |
| Nov-07 | 12, 13 | with Ratu | Between gate and then pairing | Introduce between fence's bar in the centre stall. he looked interest and than courtship. ~ an hour there, pairing them in the centre, in front of stall to do courtship for couple minutes, Ratu back position and chase by him. Courtship again and than fight in the wallow. After that Ratu looks avoid and founded new head wounds (serious wound). ~ 7pm separated them and released to paddock K5A. Ratu still in the centre area. |

| | | | | |
|---------------|-----------------|----------------------------|---|--|
| Dec-07 | 17, 18 21,23 | with Rosa and with Ratu | Between gate with Rosa (Rosa in the centre area). Between stall's bars with Ratu | 17 and 18: Andalus in the temporary paddock and Rosa in the centre, she looks afraid to approach him, she walking away. 21: Introduce between stall's bar in the centre stall. he looked interest and than courtship. After an hour them fight and separated. 23: again introduce to Ratu in the centre stall - better courtship there |
| | 25-29 | with Ratu | Between stall's bars. He in the centre and Ratu in the stall | 25 and 28: very good courtship, 26: courtship. After 20 Dec founded serious hoof problem (corona/white line) because often urine spray with scrap and than stop introduce to female until healed hoof problem (look progress) |

Female Reproductive Events (all USG examinations, estrous signs and mating behavior)

| BINA | Date | USG RESULTS | | Estrus Behaviour | Duration & Comments |
|--------|---|---|--|------------------|---------------------|
| | | Left Ovary | Right Ovary | | |
| Jan-07 | 16 | Active, CL 23x22 mm and small follicle | Active, small follicle | Good signs | No pregnancy sign |
| | 22 | Active, small follicle | Active, small follicle | Good signs | |
| | 24 | Active, only tiny follicles and lots of white points | Active, small follicle 9x8 (not apparent flow) & 9x10 mm (some small blood flow) | Good signs | |
| | 26 | Active, small follicle 10x07 mm, many echogenic thick white spots | Active, small follicle 10x08 (little blood flow) and 12x10 mm | Good signs | |
| | 29 | Active, small follicle 14x10 mm (little bit blood flow) | Inactive, small follicle | Good signs | |
| Feb-07 | 2 | Active, small follicle 11x10 mm | Fairly inactive, small follicle | Good signs | |
| | 5 | Active, small follicle 10x15 mm | In active, small size | Good signs | |
| | 7 | Active, small follicle | Active, small follicle 10x8mm | Good signs | |
| | 9 | Active, small follicle 12x10 mm (no blood flow) | Active, small follicle 12x8mm (some flow on bottom of follicle) | Good signs | |
| | 12 | Active, small follicle 10x11 mm | Active, small follicle 10x18 | Good signs | |
| | 15 | Active, small follicle | No follicle | Good signs | |
| | 18 | Active, small follicle | No view | Good signs | |
| | 20 | Active, small follicle | Active, small follicle | Good signs | |
| | 22 | Active, small follicle | Active, small follicle | Good signs | |
| | 24 | Active, small follicle | Active, small follicle | Good signs | |
| | 26 | Active, small follicle | Active, small follicle | Good signs | |
| | 28 | Active, small follicle | Active, small follicle | Good signs | |
| Mar-07 | 2 | Active, small follicle | Active, small follicle | Good signs | |
| | 4 | Active, several small follicle (bigger ~13 mm), big CL (old) | Active, 3 small follicle (bigger ~ 14 mm) | Good signs | |
| | 6 | Active, several small follicle and big CL 23x33 mm | Active, small follicle ~14 mm | Good signs | |
| | 8 | Active, 3 small follicle and CL 19x23 mm | Active, small follicle | Good signs | |
| | 10 | Active, small follicle and CL | Active, small follicle | Good signs | |
| | 12 | Dark image | Dark image | Good signs | |
| | 14 | Active, 4 small follicle with the bigger 9x13 mm | Active, 3 small follicle with the bigger ~ 13 mm | Good signs | |
| | 19 | Active, 1 small follicle ~ 12 mm and CL 17x18 mm | Active, 3 small follicle | Good signs | |
| | 20 | Active, 1 small follicle | Active, 1 small follicle | Good signs | |
| | 22 | Active, small follicle | Active, small follicle | Good signs | |
| | 24 | Active, few small follicle | Active, 2 small follicle | Good signs | |
| | 26 | Active, 3 small follicle | Active, 2 small follicle | Good signs | |
| | 30 | Active, 2 small follicle and CL ~ 20 mm | Active, 2 small follicle | Good signs | |
| 31 | Active, small follicle and CL | Active, 1 small follicle | Good signs | | |
| Apr-07 | 5 | Active, follicle 11x17 and 22x25 mm (big) | Active, small follicle | Good signs | |
| | 6 | Active, 2 big follicle 19x26 and 24x24 | Active, small follicle | Good signs | |
| | 7 | Active, big follicle 24x30 mm and CL | Active, small follicle | Good signs | |
| | 9 | Active, big follicle 25x31 mm | In active | Good signs | |
| | 10 | Active, big follicle 25x33 mm | In active | Good signs | |
| | 11 | Active, big follicle 30x33 mm | Active, small follicle | Good signs | |
| | 15 | Active, big follicle 31x39 mm | Active, small follicle | Good signs | |
| | 18 | Active, big follicle 30x37 mm | Active, small follicle | Good signs | |
| | 20 | Active, big follicle 25x33 mm | Active, 2 follicle 11x14 and 15x19 mm and | Good signs | |
| | 22 | Active, big follicle 24x30 mm | Active, follicle ~16 mm | Good signs | |
| | 24 | Active, big follicle 23x31 mm and found | Active, small follicle ~ 10 mm and CL 17 | Good signs | |
| 27 | Active, 2 follicle 14x22 and 24x31 mm | Active, small follicle | Good signs | | |
| May-07 | 6 | Active, big follicle 14x27 mm | Active, 2 small follicle | Good signs | |
| | 8 | Active, big follicle 12x26 mm a CL 14x21 mm | Active, 2 small follicle 15x16 and 13x17 mm | Good signs | |
| | 11 | Active, smaller follicle ~ 15 mm and CL 11x18 mm | Active, 2 big follicle 24x25 and 21x22 mm | Good signs | |
| | 13 | Active, smaller follicle 10x20 mm and CL 12x13 mm | Active, big follicle 26x30, 9x24 mm and ~ 11 mm | Good signs | |
| | 16 | Active, small follicle ~ 10 mm | Active, big follicle 25x29 mm | Good signs | |
| | 18 | Active, small follicle | Active, big follicle 30x34 mm | Good signs | |
| | 24 | Not found | Active, big follicle 25x29 mm and ~ 14 mm | Good signs | |
| 27 | Active, 3 follicle 14x16, ~ 16 m and small follicle | Active, follicle 24x27 mm and small follicle | Good signs | | |
| Jun-07 | 22 | Active, old follicle | Active, follicle 25x19 mm | Good signs | |
| | 25 | Active, follicle 22 mm | Active, follicle ~ 25 mm | Good signs | |
| | 28 | Active, follicle 14 and 24 mm | Active, follicle ~ 25 mm | Good signs | |
| | | Active, small follicle | Active, small follicle | Good signs | |

| | | | | |
|---------------|---|---|--|--|
| Jul-07 | 3 Active, small follicle 16 mm 5 Active, small follicle 21 mm 7 Active, small follicle 17 mm and CL 16 mm 11 Active, small follicle 15 Active, small follicle 18 Active, small follicle 20 Active, small follicle 22 Active, small follicle and old CL 26 Active, small follicle 16 mm 28 Active, small follicle 16 mm 31 Active, small follicle | Active, small follicle 12 mm Active, small follicle and CL Active, old follicle and CL Active, small follicle Active, small follicle Active, small follicle 18 mm Active, small follicle 17 mm Active, small follicle Active, small follicle 16 mm Active, big follicle 22 mm Active, big follicle 22 mm | Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs | |
| Aug-07 | 6 Active, no follicle 17 Active, big follicle 22 mm 19 Active, big follicle 26 mm 21 Active, big follicle 27 mm 23 Active, big follicle 33 mm 28 Active, follicle 21 and 22 mm 31 Active, follicle 29 mm and CL 20 mm | Active, big follicle 29 mm Active, small follicle Active, follicle 25 mm (old) and CL 27 mm Active, follicle 22 mm and CL 28mm Active, follicle 24 mm Active, follicle 21 mm Active small follicle and CL 22 mm | Good signs Good signs Good signs Good signs Good signs Good signs Good signs | 21 Aug: Introduced to Andalus: FIGHT |
| Sep-07 | 4 Active, follicle ~27 mm and 19 mm 7 Active, follicle 29.8 mm and 17 mm 9 Active, follicle 33.5 mm and 24 mm 12 Active, follicle 26.8 mm 17 Active, follicle 30.9 mm 20 Active, follicle 31 mm and 20.8 mm 22 Active, follicle 30.9 mm 25 Active, follicle 26 mm and 18 mm 28 Active, follicle 27 mm | Active, CL ~22 mm Active CL ~15 mm Active, small follicle Active, small follicle Active, follicle 19.5 mm, < 10 mm and old CL 13.8 mm Active, follicle 17.8 mm Active, follicle 14.6 mm Active, small follicle Active, 2 small follicle | Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs | |
| Oct-07 | 3 Active, follicle 30.3 mm 5 Active, follicle 26 mm 7 Active, CL 29 mm 9 Active, small follicle 11 Active, small follicle 17 Active, follicle (old) 19 Active, follicle 26 mm, small and old CL 20 mm 21 Active, follicle 16, old follicle and CL 20 23 Active, follicle 27.8 mm 24 Active, follicle 20.3 mm, 11.5 mm 25 Active, follicle 28.4 mm, 13.3 mm 28 Active, follicle 18.3 mm, 17 mm 30 Active, follicle 17.8 mm and CL 19.8 mm | Active, follicle 23.9 mm and 15 mm Active, follicle 27mm Active, follicle 21 mm Active, follicle 27.6 mm Active, follicle 27 mm Active, follicle 18 mm Active, follicle 14 mm Active, follicle 20 mm, 19 mm and CL 20 Active, follicle 24.2 mm, 14.8 mm and CL Active, follicle 23.4 mm, 16.9 mm, 10.3 mm and CL 20.7 mm Active, follicle 17.8 mm and 16.7 mm Active, follicle 24.1 mm and 11.7 mm Active, follicle 25.6 mm and 14.2 mm | Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs | 20: founded clear discharge from vulva Result: still have regular cycles but no male for breeding |
| Nov-07 | 1 Active, follicle 14.7 mm and CL 19.3 mm 3 Active, follicle 26.5 mm, 10 mm and CL 12.7 mm 6 Active, follicle 24.8 mm and 26 mm 8 Active, follicle 25 mm, 23.3 and CL 25 10 Active, follicle 25.5 mm 12 Active, follicle 23.9 mm and 16 mm 15 Active, follicle 20 mm 17 Active, follicle 24.6 mm 20 Active, follicle 21.4 mm and 21.7 mm. big CL 23 Active, follicle 22.6 mm and 17 mm. CL 26.7 mm 25 Active, follicle 23.9 mm and smaller Follicle. CL 21.4 mm 27 Active, follicle 29 mm and 19.6 mm 29 Active, follicle 32.6 mm | Active, follicle 26.8 mm Active no follicle Active, follicle 22 mm and 12 mm Active, follicle 17.5 mm and CL 14.2 mm Active, follicle 17.6 mm Active, follicle 18.9 mm and CL 20 mm Active, follicle 13 mm and cl Active, follicle 18 mm Active, follicle 14 mm Active, small follicle Active, follicle 14 mm and CL? Active, 2 small follicle Active, follicle 12.6 mm | Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs | POF POF |
| Dec-07 | 1 Active, follicle 36.4 mm 3 Active, follicle 41.9 mm and 13.7 mm 6 Active, follicle 34.1 mm and 16.5 mm 8 Active, follicle 31.6 mm and 18.2 mm 10 Active, follicle 23.4 mm and 19.0 mm 12 Active, follicle 25.4 mm 14 Active, follicle 27.1 mm, 24.8 mm and old CL 16 Active, follicle 27.7 mm and 21.0 mm 18 Active, follicle 29.3 and 20 mm. CL 23 20 Active, follicle 25.3 and 20.3 mm. CL 27.5 mm 23 Active, follicle 30.4 and 21.5 mm. CL smaller 25 Active, follicle 27.1 and 18 mm 28 Active, follicle 18.3 and 21.5 mm 30 Active, follicle 16, 19.6 and 25.5 mm | Active, follicle 18.6 mm Active, follicle 12.8 mm Active, no follicle Active, no follicle Active, no follicle Active, CL 20.1 mm Active, no follicle Active, no follicle Active follicle 13 mm Active follicle 14 mm Active small follicle Active small follicle Active small follicle Active small follicle | Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs | |

| RATU | Date | USG RESULTS | | Estrus Behaviour | Duration & Comments |
|--------|------|---|---|--------------------------|---|
| | | Left Ovary | Right Ovary | | |
| Jan-07 | 14 | Active, small follicle | Active, small follicle | Good signs | Jan 15 paired (success breed) Ovulation confirmed Not pregnant |
| | 15 | Active, big follicle 25x24 mm (some flow) | Active, big follicle 19x19 mm (nice Fo growing good role) | Good signs | |
| | 17 | Active, big follicle 27x22 and 22x22 mm | Active, big follicle 24x22 mm | Good signs | |
| | 18 | Active, 22x16 mm (Ovulated) | Active, big follicle 24x27 mm | Good signs | |
| | 22 | Active, mid follicle 20x10 mm and CL | Active, big follicle 27x22 mm | Good signs | |
| | 31 | Active, very small follicle Active, big follicle | Not found Active, big follicle 15x16 mm | Good signs Good signs | |
| Feb-07 | 2 | Active, big follicle 14x18 mm | Active, hemorrhagic follicle 34x30 mm | Good signs | Feb 3 and 23, paired (success breed) Dark image |
| | 5 | Active, hemorrhagic follicle 37x31 mm | Active, small follicle and CL | Good signs | |
| | 10 | Active, CL 14x12 mm (intense blood flow) | Active, hemorrhagic follicle (no apparent blood flow) | Good signs | |
| | 14 | Active, hemorrhagic follicle | No view | Good signs | |
| | 19 | Active, hemorrhagic follicle | Active, mid follicle 16x16 | Good signs | |
| | 20 | Active, hemorrhagic follicle | Active, small follicle 15x16 | Good signs | |
| | 21 | Active, hemorrhagic follicle | Active, follicle 17x16 | Good signs | |
| | 22 | Active, hemorrhagic follicle | Active, big follicle 18x19 | Good signs | |
| | 23 | Active, hemorrhagic follicle(old) | Active, big follicle 16x19 | Good signs | |
| | 24 | No view | Active, big follicle 21x12 | Good signs | |
| | 25 | Active, hemorrhagic follicle and 2 small follicle | Active, 3 small follicle (bigger 13x14 mm) | Good signs | |
| | 26 | Active, hemorrhagic follicle | Active, smaller follicle 13x18 | Good signs | |
| | 28 | Active, small follicle | Active, small follicle | Good signs | |
| Mar-07 | 2 | Active, small follicle | Active, small follicle | Good signs | March 10 paired (success breed) |
| | 4 | Active, hemorrhagic follicle 26x29 mm | Active, hemorrhagic follicle (old follicle) | Good signs | |
| | 6 | Active, hemorrhagic follicle 26x30 mm | Active, small follicle | Good signs | |
| | 8 | Active, hemorrhagic follicle, CL 16x25 mm and Follicle ~15 mm | Active, old CL | Good signs | |
| | 10 | Active, POF follicle 17x20 mm and hemorrhagic follicle | Active, small follicle | Good signs | |
| | 12 | Active, CL 18x21 mm (Ovulation), hemorrhagic follicle still there | Active, small follicle | Good signs | |
| | 20 | Active, CL 13x13 mm | Not Found | Good signs | |
| | 26 | Active, several small follicle with the bigger 17x17 mm | Active, small follicle | Good signs | |
| | 28 | Active, 3 follicle with the bigger 16x19 mm | Active, small follicle | Good signs | |
| | 29 | Active, 2 small follicle 14x15 and 13x16 mm, CL ~ 15 mm | Active, 2 small follicle 11x17 and 13x15 mm | Good signs | |
| Apr-07 | 1 | Active, 3 small follicle | Active, follicle 15x19 mm | Good signs | April 2 And 22: paired (success breed) |
| | 2 | Active, small follicle? | Active, small follicle? | Good signs | |
| | 22 | Active, big follicle ~ 18 and 19x20 mm (POF) | Active, hemorrhagic follicle | Good signs | |
| | 24 | Active, 2 follicle ~ 14 and 16 mm and CL ~ 17 mm | Active, hemorrhagic follicle | Good signs | |
| | 27 | Active, new CL ~ 19 mm | Active, old follicle, CL ~ 24 mm | Good signs | |
| May-07 | 2 | Active, big follicle 18x24 and small follicle ~ 10 mm | Active, Old follicle and CL | Good signs | |
| | 5 | Active, follicle 18x24 mm | Active, follicle 13x15 mm | Good signs | |
| | 9 | Active, big follicle 18x26 and 2 small | Active, small follicle 13 mm | Good signs | |
| | 12 | Active, 3 follicle 12x23, 14x18 and 13x16 mm | Active, small follicle 13x17 and ~ 14 mm | Good signs | |
| | 14 | Active, 4 follicle and CL | Active, follicle 13x15 mm | Good signs | |
| | 16 | Active, big follicle 17x19 and ~ 23 mm | Active, follicle 19 mm | Good signs | |
| | 18 | Active, 3 small follicle and big follicle 19x24 mm | Active, small follicle 10 mm | Good signs | |
| | 19 | Active, 3 small follicle and big follicle 21x23 mm | Active, small follicle 12 mm | Good signs | |
| Jun-07 | 2 | Active, big follicle 22x25 and 18x22 mm | Active, small follicle | Good signs | June 5 paired (success breed) 25 Jun: POF and pairing: successful intromission! 28 Jun: Ovulation confirmed on RO |
| | 3 | Active, small follicle | Active, small follicle | Good signs | |
| | 4 | Active, small follicle | Active, small follicle | Good signs | |

| | | | | |
|---------------|---|--|--|---|
| Jul-07 | 4 Active, small follicle 14 Active, small follicle 15 Active, small follicle 17 Active, small follicle 31 Active, small follicle | Active, small follicle Active, big follicle 20 mm Active, big follicle 21 (POF) Active, new CL Active, big follicle 21 mm | Good signs Good signs Good signs Good signs Good signs | 15 Jul: POF and pairing with Tor. Successful intromission 17 Jul: Ovulation confirmed on RO |
| Aug-07 | 4 Active, small follicle 16 mm 6 Active, big follicle 22 mm 14 Active, small follicle and old CL 16 Active, CL 20 mm (old) 17 Active, old follicle and CL 19 Active, small follicle and old CL 21 Active, small follicle and old CL 23 Active, small follicle and old CL 25 Active, small follicle 29 Active, small follicle | Active, follicle 19 mm and CL 20 mm Active, small follicle 13 mm Active, 3 follicles. size 15,26 and 27 mm Active, 3 follicle ~ 19 mm Active, 3 follicles. Size 25,26 and 28 mm, CL Active, follicle 24 and 29 mm and CL 28 mm Active, follicle 38 mm and CL 24 mm Active follicle 38, 30 and 23 mm Active follicle 39 and 29 mm Active follicle 34 and 27 mm | Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs | 6,17-19, 21 Aug: introduced to Andalas, good courtship! |
| Sep-07 | 1 Active, small follicle 4 Active, follicle ~17 mm 7 Active, follicle 20 mm 9 Active, follicle 23 mm 10 Active, follicle ~25 mm 18 Active, follicle 20.4 mm 20 Cant observed clearly, dark image 22 Active, small follicle, CL 22.3 mm 23 Active, CL 19.6 mm 24 Active, CL 19 mm 25 Active, CL 21 mm 26 Active, no follicle 28 Active, no follicle | Active, old follicle 22 mm, HF ~32 mm and old CL 23 mm Active, old follicle 25 mm, HF 22,7 mm and old CL 15 mm Active, old follicle 26 mm Active, old follicle 22 mm Active, old follicle ~23 mm Active, follicle 12.9 mm Active, follicle <10 mm, old follicle 17.7 mm Active, follicle 23.6 mm, old follicle 29.3 Active, follicle ~18 mm, old follicle Active, follicle ~18 mm and 15 mm Active, follicle 18 mm and old follicle 23 Active, follicle 18 mm and old follicle 23 Active, 2 follicle 12 mm | Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs | 9 Sept: pairing with Andalas, good courtship, chasing each other and finally Ratu chase Andalas. |
| Oct-07 | 1 Active, small follicle 3 Active, follicle 17.9 mm 5 Active, CL 10 mm 7 Active, follicle 26.4 mm, 12.8 mm 9 Active, follicle < 15 mm 11 Active, follicle 16.4 mm and CL 15.1 mm 16 Active, small follicle 19 Active, old follicle and CL 21 Active, follicle 12 mm 23 Active, follicle 14.7 mm, 19.7 mm, <15 mm, and CL 22.2 mm 24 Active, follicle 14.9 mm, 21.7 mm, 15 mm and 14.9 mm 25 Active, follicle 17.3 mm, 20.8 mm and CL 19.0 mm | Active, old follicle 25.7 mm, follicle ~12 mm and ~19 mm Active, old follicle 23 mm and follicle 20.3 mm Active, follicle 21 mm (old) and 22 mm Active, old follicle, 20.3 mm and CL 16.1 mm Active, old follicle 15 mm and follicle 19.9 mm Active, old follicle 18.4 mm and follicle 18.7 mm Active, follicle 14.8 mm Active, follicle 26 mm (ellipse) and CL Active, small follicle, old CL Active, small follicle Active, small follicle and old CL 17.3 mm Active, small follicle and old CL 18.7 mm | Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs | |
| Nov-07 | 1 Active, big follicle 40.3 mm (several follicles?) and 18.7 mm 4 Active, big follicle 37 mm, 16.1, 16.6 mm and CL 21.6 mm 6 Active, follicle 30 mm and CL 20.4 mm 8 Active, follicle 13 mm and CL 24.5 mm 10 Active, follicle 20 mm and CL 24 mm 11 Active, follicle 24.6 mm 12 Active, follicle 22.8 mm and old CL 22 mm 15 Active, CL 22 mm and old CL 24 Active, follicle 10 mm and CL 21 mm 30 Active, small follicle | Dark image Active, small follicle, CL 13.6 and 17 mm Active, small follicle Active, old CL 15.4 mm Active, small follicle Active, small follicle Active no follicle Active no follicle Active, follicle 10 mm Active follicle 14.8 mm | Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs | 12 and 13 Nov: introduced to Andalas, good courtship! But fight occurred also 14 Nov: successful breed with Torgamba Ovulation confirmed No pregnant |
| Dec-07 | 2 Active, small follicle 4 Active, follicle 15.3 mm, 15.2 mm and CL 21.6 mm 5 Active, follicle 14.2 mm and CL 10.7 mm 6 Active, follicle 19.3 mm 8 Active, No follicle 10 Active, CL 29.8 mm 15 Active, small follicle and CL 21.3 mm 21 Active CL 24 mm 23 Active CL 16.6 mm 24 Active No follicle and CL smaller | Active follicle 13.1, 10.3 and 17.2 mm Active, follicle 14.9 mm Active, follicle 16 mm Active, follicle 23.5 mm and 15.1 mm Active, follicle 26.7 mm and CL 15.5 mm Active, follicle 32.4 mm Active, follicle 23.7 mm Active follicle 18,9, 15.4 and small. CL 20 mm Active follicle 21.5 and 19.1 Active follicle 20.7 and 20.1 mm (POF) | Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs | 6 Dec: Successful breed with Torgamba Ovulation confirmed 36 hours post breed Ovulation confirmed 9 days post breed Introduce to Andalas, fight Introduce to Andalas, good courtship 24 Dec: Successful breed with Torgamba |
| Ratu | 26 Active no follicle | Active follicle 15.5 and New CL 21 mm | Good signs | Ovulation confirmed |

| ROSA | Date | USG RESULTS | | Estrus Behaviour | Duration & Comments |
|--------|---------------------------------|---|--|------------------------|--|
| | | Left Ovary | Right Ovary | | |
| Jan-07 | 12 | Active, no follicle | Active, 4 small follicle 17x10 mm | Good signs | |
| | 13 | Active, 3 small follicle 8x7 mm | Active, small follicle | Good signs | |
| | 16 | Active, no follicle | Fairly inactive | Good signs | |
| | 22 | Inactive | Active, small follicle 9x7 mm | Good signs | |
| Feb-07 | 2 | Inactive | Active, very small follicle | Good signs | |
| | 9 | Inactive | Active, small follicle 10x11 | Good signs | |
| | 12 | Active, 2 small follicle | Active, small follicle 12x14 | Good signs | |
| | 14 | No view | Active, small follicle 14x15 | Good signs | |
| | 16 | Active, small follicle | Active, small follicle 14x16 | Good signs | |
| | 18 | Active, small follicle | Active, small follicle | Good signs | |
| | 20 | Active, small follicle 13x15 mm | Active, small follicle 10x14 | Good signs | |
| | 22 | Active, big follicle 18x18 mm | Active, small follicle 13x18 | Good signs | |
| | 23 | No view | Active, small follicle 15x16 | Good signs | |
| | 24 | Active, big follicle 18x19 mm | Active, small follicle 16x17 | Good signs | |
| | 26 | Active, big follicle 18x21 mm | Active, small follicle 14x16 | Good signs | |
| | 27 | Active, small follicle | Active, small follicle | Good signs | |
| | 28 | Active, small follicle | Active, small follicle | Good signs | Dark image |
| | Mar-07 | 2 | Active, small follicle | Active, small follicle | Good signs |
| 4 | | Active, big follicle 16x19 mm, several small follicle and CL 17x20 mm | Active, small follicle 12x13 mm | Good signs | |
| 6 | | Active, several small follicle (bigger ~16 mm), CL 16x18 mm | Active, small follicle ~10 mm | Good signs | |
| 8 | | Active, small follicle 15x18 mm and CL 12x18 mm | In active | Good signs | |
| 10 | | Active, 2 follicle 14x14 and 12x21 mm and CL 16x19 mm | Active, small follicle 10x12 mm | Good signs | |
| 12 | | Active, follicle ~ 15 mm and CL ~ 16 mm | Dark image | Good signs | |
| 15 | | Active, 3 small follicle ~ 15, 17 and 17 mm, CL ~ 20 mm | Active, small follicle ~ 11 mm and CL ~ 18 mm | Good signs | |
| 19 | | Active, small follicle and CL 16 | Active, follicle 16x17 mm | Good signs | |
| 20 | | Not found | Active, follicle 16x18 mm | Good signs | |
| 22 | | Active, CL 11x13 mm | Active, follicle 18x20 and 15x18 mm | Good signs | |
| 24 | | Active, 3 follicle with the bigger 9x15 mm | Active, Hemorrhagic follicle | Good signs | |
| 26 | | Active, 3 small follicle with the bigger 9x10 mm | In Active | Good signs | |
| 31 | | Active, small follicle ~ 14 mm and CL 12x16 mm | In Active | Good signs | |
| Apr-07 | 5 | Active, 2 small follicle ~ 13 mm And CL ~ 13 mm | In Active | Good signs | |
| | 9 | Active, small follicle 14x14 mm and CL ~ 13 and 17x20 mm | Active, small follicle 11x12 mm and CL 20x24 mm | Good signs | |
| | 12 | Active, 3 small follicle with the bigger 15x16 mm | Active, small follicle 11x14 | Good signs | |
| | 15 | Active, small follicle and CL old | Active, big follicle 17x20 mm | Good signs | |
| | 17 | Active, 2 small follicle and CL | Active, follicle 18x18 mm | Good signs | |
| | 20 | Active, small follicle and CL | Active, follicle 15x18 mm | Good signs | |
| | 22 | Active, 3 small follicle and CL | Active, follicle ~ 15 mm and CL ~ 24 mm | Good signs | |
| | 24 | Active, 2 small follicle and CL | Active, 2 small follicle, CL | Good signs | |
| 27 | Active, 2 small follicle and CL | Active, small follicle (old) and CL ~ 18 mm | Good signs | | |
| May-07 | 6 | Active, 2 small follicle and old CL | Active, 2 small follicle and CL 16x17 mm | Good signs | |
| | 8 | Active, 2 small follicle and CL | Active, small follicle and CL 11x16 and 17x19 mm | Good signs | |
| | 11 | Active, follicle 16x19 mm | Active, 2 follicle 11x12 and 11x20 mm and CL old | Good signs | |
| | 13 | Active, 2 follicle ~ 13 mm and 14x17 mm | Active, small follicle and CL | Good signs | |
| | 16 | Active, small follicle ~ 13 mm | Active, CL 11x14 mm | Good signs | |
| | 18 | Active, small follicle ~ 13 mm | Active, old CL | Good signs | |
| | 28 | Active, small follicle and CL | Active, big follicle 18x19 mm | Good signs | |
| Jun-07 | 4 | Active, small follicle | Active big follicle ~ 20 mm | Good signs | |
| | 25 | Active, small follicle | Active, big follicle 21 mm and CL 22 mm | Good signs | |
| | 28 | Active, small follicle | Active, follicle ~ 20 mm | Good signs | |
| Jul-07 | 1-3 | Active, small follicle | Active, big follicle 32 mm | Good signs | Founded very big Follicle on RO, Cyst? 22 Jul: met Andalus in pm, good reaction |
| | 5 | Active, small follicle 15 mm | Active, big follicle 33 mm | Good signs | |
| | 7 | Active, small follicle 14 mm | Active, big follicle 36 mm | Good signs | |
| | 11 | Active, small follicle 17 mm | Active, big follicle 19 mm | Good signs | |
| | 15 | Active, big follicle ~ 20 mm, CL | Active, big follicle ~ 20 mm | Good signs | |
| | 17 | Active, big follicle ~ 20 mm | Not found | Good signs | |
| | 20 | Active, big follicle ~ 24 mm | Active, old follicle 15 mm | Good signs | |
| | 22 | Active, big follicle ~ 24 mm | Active, small follicle | Good signs | |
| | 26 | Active, smaller follicle ~ 18 mm | Active, small follicle | Good signs | |
| | 28 | Active, big follicle ~ 21 mm | Active, small follicle | Good signs | |
| | 31 | Active, CL | Active, small follicle and CL | Good signs | |

| | | | | |
|---------------|---|---|--|---|
| Aug-07 | 5 Active, small follicle 14 Active, small follicle 16 mm 17 Active, 2 small follicle ~ 15 mm 19 Active, small follicle 15 mm 21 Active, small follicle 17 mm 23 Active, small follicle 25 Active, small follicle 28 Active, follicle 16,5 mm and old CL 31 Active, follicle 17, 13 and 14 mm 31 Active, follicle 17, 13 and 14 mm | Active, small follicle Active, 3 follicle ~ 11 mm Active, big follicle 21 mm Active, follicle 17 mm Active, follicle 23, 18 mm Active, follicle 15 mm and old CL Active, small follicle Active, small follicle Active, follicle 16 and 17 mm Active, follicle 16 and 17 mm | Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs | |
| Sep-07 | 4 Active, 2 small follicle and 2 CL ~17 mm 7 Active, follicle ~14 mm, CL ~16 mm 9 Active, follicle ~16 mm, CL 13 mm 10 Active, follicle ~17 mm 12 Active, follicle 17.7 mm 17 Active, follicle 24 mm 18 Active, follicle 26.3 mm 20 Dark image 22 Active, follicle 17.5 mm and CL 22.4 mm 25 Active, follicle 28 Active, no follicle | Active, follicle 21 mm Active, follicle 22 mm Active, follicle 22 mm Active, follicle 22 mm Active, follicle 20.3 mm Active, follicle 23 mm Active, follicle 25 mm Active, old follicle 22.4 mm Active, old follicle 22.8 and 13.2 mm Active, old follicle 21 mm and 13 mm Active, follicle 18 mm | Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs | 16 - 18, 20, 28: courtship between gate and also pairing but mostly Rosa avoid and run away. Never been head to head directly except between gates |
| Oct-07 | 3 Active, follicle 14 mm and CL 24.4 mm 5 Active, follicle 12 and 14 mm 7 Active, follicle 15.8 and 14.7 mm 9 Active, follicle 20.5 and 14 mm 11 Active, follicle 22.2 mm 17 Active, follicle 18 mm 19 Active, follicle 21 mm 20 Active, follicle 21 mm 21 Active, follicle 20 mm 23 Active, follicle 27 mm 24 Active, follicle 30.2 mm 26 Active, follicle 31.4 mm, 14.8 mm 28 Active, follicle 31.2 mm 30 Active, follicle 36.8 mm, 14.1 and <15 mm | Active, follicle 16.7 mm Active, follicle 17 mm Active, follicle 21 mm and CL 17 mm Active, follicle 20.7 mm and CL 23.5 mm Active, follicle 22.8 mm and CL 12.9 mm Active, follicle 17 mm and CL 23 mm Active, follicle 15 mm and CL 22 mm Active, follicle 14 mm (old) Active, follicle 13 mm (old) Active, follicle 20.3 mm and CL 10.5 mm Active, follicle 12.7 mm and CL 16.9 mm Active, follicle 11.7 mm and CL 14.9 mm Active, follicle 16.2 mm, 15.6 mm and CL 17.1 mm Active, follicle 14.5 mm, CL1 17.0 mm and CL2 17.3 mm | Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs | 3, 19, 20: Pairing with Andalas Rosa showed better sexual behavior when met Andalas compare to before. She less afraid to Andalas. She also has good follicle. |
| Nov-07 | 1 Active, follicle 18.8 and 34.8 mm (?) 3 Active, follicle 9.9, 18.8 and 34.8 mm (?) 6 Active, follicle 15.6, 11.6 and 30.8 mm (several follicles?) 8 Active, follicle 21, 18.6 and 26 mm (several follicles?) 10 Active, follicle 20, 12.7 and 27.5 mm (several follicles?) 11 Active, follicle 16.9, 18.3 and 26.0 mm 12 Active, follicle 29.7 mm (several follicles?) and 20 mm 15 Active, follicle 31 mm and CL 19 mm 17 Active, follicle 14.7 mm and CL/Fo? 24.6 mm 20 Active, 2 CL ~ 15 and 20 mm 23 Active, CL 24.6 mm 25 Active, CL 19.6 mm and small Follicle 27 Active, CL 12.6 mm, Active follicle 16.2, 14.6, 12.6 & 12.7 mm 29 Active, follicle 20.3 mm, 12.1 mm and 7.4 mm | Active, follicle 13 mm, CL 15.5 mm Active, CL 16 mm Active, follicle 12 mm and CL 13.7 mm Active, follicle 16.6 mm and CL 12.5 mm Active, follicle 11.6 mm Active, old CL 14 mm Active, old CL 18 mm Active, no follicle Active, no follicle and old CL Active, follicle 14 mm, 14 mm and 12.7 mm (?) Active, several small follicle 11 mm Active, follicle 10.8 and 12 mm and Cl old mm Active, CL 14.3 mm and 2 follicle 14 mm Active, CL 12.6 mm and follicle 12.2 mm | Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs | 10 Nov: she didn't want to close, only stand max 5 m from Andalas's bar. She run away when Andalas released to centre area. |
| Dec-07 | 1 Active, follicle 10.3 3 Active, follicle 8.0 mm and CL 25.8 mm 6 Active, follicle 11.5 mm and CL 15.0 mm 8 Active, follicle 14.5 mm and CL 17.4 mm 9 Active, follicle 16.2 mm 10 Active, follicle 18.1 mm and CL 16.4 mm 12 Active, follicle 17.9 mm and 14.0 mm 14 Active, follicle 23.3 mm 15 Active, follicle 17.8 mm and 15.2 mm 18 Active, follicle 18, 16.6, 16.7 mm 20 Active, follicle 12.8 and 13.9 mm. CL 19.8 23 Active, 2 follicle 18.9 mm and small. CL sma 25 Active, 2 follicle 17 mm and small. CL sma 28 Active, follicle 14.2 and 18.1 mm 30 Active, follicle 18 and 18.3 mm. CL old 10 | Active, follicle 15.2 mm Active, follicle 14.1 mm Active, follicle 20.9 mm Active, no follicle Active, follicle 19.5 mm and CL 16.4 mm Active, follicle 16.2 mm Active, follicle 17.6 and CL 12.8 mm, 19.4 mm Active, follicle 20.3 mm and CL 15.3 mm Active, follicle 28.4 mm Active, follicle 24.9 mm Active, follicle 25.1 mm Active, follicle 22.7 mm Active, follicle 26.2 mm (Hemorrhagic?) Active, 2 CL 20 and 18 mm Active, 2 CL 21.9 mm | Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs Good signs | |

FACILITIES SECTION

Facilities Maintenance & Development *(Record all major maintenance and development of facilities)*

| | Date Start | Date End | Description | Comments |
|--------|---------------|-------------|--|--|
| Jan-07 | 17 | 31 | Building Boma for Andalas (20 x 30 m) | covered with net and tent (stall & boma) |
| Feb-07 | 1 | 19 | Build Bathpool, electric system, observ-post in Andalas Stall/Boma | |
| | 28 | ... | Rebuild / upgrade Garbage Incinerator | |
| Mar-07 | ... | 9 | Rebuild / upgrade Garbage Incinerator | finish |
| | 3 | ... | Build the 2nd Boma for Andalas, without clearing ground | |
| | 10 | ... | Rebuild / upgrade new generator house | |
| Apr-07 | ... | 9 | Build the 2nd Boma for Andalas, without clearing ground | finish |
| | ... | 19 | Rebuild / upgrade new generator house | finish |
| May-07 | 5 | 19 | Build the 2nd fence line on the road to center | |
| Jun-07 | - | - | - | - |
| Jul-07 | - | - | - | - |
| Aug-07 | 2 | 2 | Built Boma for Torgamba in paddock 3 | Torgamba special health care |
| | 13 | 17 | rebuild/upgrade concrete stall and built Boma paddock 1 for Torgamba | Torgamba special health care |
| | 29 | ... | Moving 2nd central fence paddock 5B (Andalas) | |
| Sep-07 | ... | 2 | Moving 2nd central fence paddock 5B (Andalas) | finish |
| | 8 | 10 | Moving 2nd central fence paddock IA (Torgamba) | |
| | 28 | ... | Renovate office building roof | |
| Oct-07 | ... | 3 | Renovate office building roof | finish |
| | 10 | 11 | Participate fixing of Way Batin Gate | finish |
| Nov-07 | 12 | 16 | Built Boma for Torgamba in paddock I A | finish |
| | 20 | ... | Build platform for Water Tower in all stall | |
| Dec-07 | ... | 15 | Build platform for water tower in all stall | finish for stall I & II |

Equipment Acquisition & Repair *(Record all major acquisitions and repair of equipment)*

| | Date Start | Date End | Description | Comments |
|--------|---------------|-------------|--|---|
| Jan-07 | 3 | 24 | Service rhino weigh-scale | |
| | 9 | 10 | Service Motor trail Suzuki trail TS | |
| | 22 | 25 | Light service Station Isuzu F1266 BJ | |
| | 26 | 27 | Service Motor Suzuki trail TS & Honda GL | Suzuki Motor Cycle broken most often |
| Feb-07 | 4 | 5 | Service Pickup Isuzu F 8425 C | |
| | 28 | 29 | Service Pickup Isuzu F 8425 C | Pickup Isuzu also broken most often |
| Mar-07 | 1 | 2 | Service Pickup Isuzu F 8425 C | Bolt join broken |
| | 24 | 24 | New set (5) tires for Pickup Isuzu F 8425 C | |
| Apr-07 | 23 | 25 | Light service Misubishi car F 8600 E | in Bogor |
| | 24 | 24 | Light service Pick up Isuzu F8425 BJ | |
| | 25 | ... | Service rhino weigh-scale | repaired in Jakarta |
| May-07 | 9 | 9 | Service Motorcycle trail Suzuki TS | replacing new gir |
| | 19 | 19 | Service Pickup Isuzu F 8425 C | New bolt-join front left & right |
| Jun-07 | 10 | 13 | Service Motorcycle (Honda GL Pro) | Machine |
| | 20 | 20 | Service Motorcycle (Honda GL Pro) | Body, chasis & gir |
| | 23 | 24 | Service Generator MWM & Kubota (20 KVA) | Dynamo |
| | 28 | 28 | Service electric relay for water pump | |
| Jul-07 | 10 | 10 | Service Motorcycle (Honda Supra) | Tires |
| | 15 | 17 | Renew kitchen cabinet | by carpenter from Plang ijo |
| | 21 | ... | Service chairs of the office (10) | |
| | 20 | 20 | Light service Motorcycle (Honda GL Pro & GL Max) | machine |
| Aug-07 | ... | 2 | Service chairs of the office (10) | finish repairing |
| | 6 | 6 | Service motorcycle (GL max) | oil replacing, flash light and gas |
| | 22 | 23 | Service motorcycle (TS) | machine, clutch and perseneling |
| | 28 | ... | Overhaul Mitsubishi L200 F 8600E | big accident |
| | 31 | ... | Service Pickup Isuzu F 8425 C | shock breaker, hind per, power steering |
| Sep-07 | ... | 2 | Service Pickup Isuzu F 8425 C | shock breaker, hind per, power steering |
| | 23 | 28 | Repeater (reset) | still insurance |
| Oct-07 | 5 | 5 | Service Air Conditioner Office | light service |
| | 5 | 6 | Service Generator MWM & Kubota J310 | Light service of injection pump |
| | 22 | 23 | Replacing covered tent of rhino crate | the old one have some holes |

| | | | | |
|---------------|----|----|----------------------------------|----------------------------------|
| Nov-07 | 4 | 5 | Service Motorcycle (Honda Supra) | light service machine |
| | 7 | 10 | Service motorcycle (GL max) | Service chain gir |
| | 12 | 12 | Service Bobcat | Big service machine and hidrolic |
| Des-07 | 3 | 6 | Service rhino weigh-scale | electronic of the bar |
| | 12 | 12 | Service Generator Kubota J310 | |
| | 12 | 12 | Service Pickup Isuzu F 8425 C | |

Equipment Needs (*Record all needs for new or replacement of major equipment*)

| | Description | | Action taken & Comments |
|---------------|---|--|--|
| Jan-07 | - New small genset for andalas Boma | | But in Jakarta or Lampung |
| | - Bath pool for car to to Andalas stall / paddock | | Anticipated truck / crane of andalas Transport |
| | - Platform outside Andalas stall for journalist | | Clear view for camera |
| Feb-07 | - Radio repeater and some new Handie talkie immediately | | Vital for communication for andalas |
| Mar-07 | - Cover for the rhino crate on the trailer | | |
| | - New small genset too for Torgamba | | Always back ti stall every night and feeding |
| | - New baterries HT radio | | Make sure good communication all staff |
| Apr-07 | - | | - |
| May-07 | - Some new big but handy torchlight for keeper | | Anticipating checking andalas in the forest |
| Jun-07 | - | | - |
| Jul-07 | - New Multimedia Computer | | Renew the old |
| Aug-07 | - New water tank system for each stall (anticipated dry season and save diesel) | | 3 stall have water tank, but no pipes yet |
| | - New drainage system each stall | | For all stall |
| | - New freezer for rhino sample collection (2) | | Bank serum and fecal sample, ASAP |
| Sep-07 | - New video and digital SLR camera (compatible for microscope) | | Many lab analysis, good documentation |
| | - Some new health examiner equipments | | See RCMP (Robin) Report |
| Oct-07 | - Need changing filter media of water tower | | |
| | - Need new hard woodblock for weigh scale | | |
| Nov-07 | - Need service bob cat | | Finish at 12 Nov |
| | - Need repair some stall (repaint metal bar, floor, etc) | | Have been started at 15 Nov |
| Dec-07 | - | | - |