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8 July 2003

Claire Bleakley
Pigeon Bush
Featherston
RD 3

Dear Ms Bleakley

**OIA Request**

The Office of the Ombudsman has advised us of its recent correspondence with you regarding your request for information regarding MBP calves. We understand that you have refined your request to the following information:

- Any birthing difficulties for eleven cows Yes no what were they?
- Blood reports for six calves that came to term.
- What the MBP calves before term, at term and after term died of.
- Any unexpected mortalities and histological data to do with the MBP calves. Yes No reason for 5 calves.
- What has happened to the muscle in Dave's Freezer from TG/502, TG/503?

This information was not included in the 2001 report to ERMA in the form you have requested it (AgResearch altered the form in which the information is provided from that in 2000). As previously advised, we hold the information, but it is scattered throughout the 750 pages you were previously advised would be needed to respond to your request. Rather than provide you with the 750 pages, we have extracted and collated the information you have requested (see attached report).

The mortality rates are consistent with or lower than those in published studies of work of this nature done by other institutions. We are happy to provide you with comparative data.

If this does not meet your request or if there is any further information you require, please let me know.

Yours sincerely

Scott Mataga
**Group Manager Legal**

# Report on MBP Calves born June 2001

This is compiled in reply to questions and information requested by Claire Bleakley.

- Any birthing difficulties for eleven cows Yes no what were they?
- Blood reports for six calves that came to term.
- What the MBP calves before term, at term and after term died of.
- Any unexpected mortalities and histological data to do with the MBP calves. Yes No reason for 5 calves.
- What has happened to the muscle in Dave's Freezer from TG/502, TG/503?

## The nature of the birthing difficulties if any, of the recipient cows

As at 1/12/2000 we had 14 pregnant MBP embryo recipients, (Annual Report to ERMA 2001, pg 19), 9 @ day 86 of gestation and 5 @ day 72 of gestation.

By late December scanning records show that 2 had aborted or reabsorbed.

Scanning records to the end of Feb 01 show 3 recipients had aborted (decomposing foetuses picked up and deposited into offal hole). 1 recipient was also aborted at Day 182 of gestation because of a build up of excess fluid in the uterus. The calf was starting to decompose and showed symptoms consistent with hydroallantois, it was disposed of in the offal hole.

In mid April another recipient was aborted for hydroallantois @ day 217 of gestation. The calf (r0137) was euthanaised at birth and a post portem done. A sample of liver was sent for histology and the calf was disposed of in the offal hole.

Early in May @ 224 days gestation a recipient was seen to be aborting, she was yarded, found to have the calf engaged, with membranes broken so the calf was pulled out. The calf had been dead in utero and was starting to decompose, so not worth doing a post mortem, calf was disposed of in offal hole.

This left 6 recipients which had carried 7 calves to term.

2 required minimal assistance, (1 backwards) and calves required very little help prior to bonding with recipient mothers.

1 carrying twins needed assistance, 1 calf (r0139a) an easy pull and the other (r0139b) required a slightly firmer pull, both calves were dead on arrival and 1 (r0139b) had been dead for a while.

1 carrying (r0144) required a slow and steady pull and died soon after birth. Palpations had been carried out at regular intervals over the previous couple of days monitoring progress and presentations and intervention only occurred when no obvious progress was being made.

2 recipients required caesarean sections after failing to respond to the approved calving induction program. Both calves are strong and active.

1042
1043
euthan
2005
P43

Regular monitoring during pregnancy, early stages by ultrasound and later stages by palpation, had not shown any causes for alarm (except for those highlighted above, where action was taken). An exception to this was with the recipient that aborted at day 224, whose records had raised questions from day 146 of gestation with regards to the development of the foetus and the lack of fluid present within the uterus.

Calf size ranged from 27.5kg (01041) to 47.5kg (r0144) and all recipients were mature cows who had calved previously and been checked for suitability prior to entering the program.

**Animal Health and Blood reports for calves which reached Term**

Reports for the tests which were taken are provided in table form as pages 4 to 8.

Day 1 Bloods were collected for 5 of the calves.

Day 7 Bloods were not collected for 3 of the calves.

Calves are identified by either their current tag or the reference number which is allocated to each foetus when they reach 140 days of gestation.

**What caused any deaths of MBP calves; before, at, and after term?**

***Before Term***

This has been covered above.

5 were early to mid stage natural abortions to which it is difficult to allocate a cause.

2 were related to hydroallantois and the post mortem sheet for the calf (r0137 that was not decomposing) and histology for the liver sample are provided as pages 9 to 11.

Recent funding is allowing more investigation into hydroallantois.

1 was the calf in the early stage of the last quarter of gestation which had died in utero and the recipient started to abort. The calf had started to decompose so worthwhile samples for a post mortem were not possible. Background information was recorded as 'Abnormal placentation on palpations'.

***At Term***

Twin calves (r0139a + b) - necropsy and microbiology reports included as pages 12 and 13.

Calf (r0144), PM findings were retroperiteneal haemorrhage following a spinal fracture at L1 level. This is thought to be a developmental problem, giving a predisposition to fracture. Trauma of calving induces the fracture. This is not possible to confirm through further testing.

***After Term***

No deaths, all 4 animals still alive.

**Unexpected Mortalities and histological data associated with MBP calves.**

Mortalities and associated data are covered in the previous section.

**Muscle Samples**

The skeletal muscle samples shown on the post mortem reports for TG/502 and TG/503 and recorded as stored in Dave's freezer. One sample is still there and the records for the freezer do not indicate that anything has been done with it since it was placed in this freezer. The other sample was actually stored in another freezer and records indicate that it and some blood samples were processed. The scientist responsible has since left AgResearch.

## MBP Calves Born June 2001

CHEMISTRY/BIOCHEMISTRY

**Day 1**

| Tests Requested | 01041 | 01042 | 01043 | 01049 | r0144 | Units | Ref Range |
|---|---|---|---|---|---|---|---|
| S.CK | 120 | 125 | 102 | 57 | 1949 H | U/l 30 | 0 -370 |
| S.AST | 41 | 59 | 13 L | 76 | 77 | U/l 30 | 25 – 120 |
| S:GDH | 5 | 8 | 4 | 151 H | 3 | U/l 30 | 0 -45 |
| S.GGT | 62 H | 553 H | 9 | 62 H | 13 | U/l 30 | 0 – 32 |
| T.Bilirubin | 17 H | 8 | 3 | 21 H | 5 | umol/l | 0 -13 |
| S.Protein | 46 L | 58 L | 42 L | 43 L | 52 L | g/l | 60 - 86 |
| S.Albumin | 26 | 25 | 27 | 24 L | 30 | g/l | 25 – 40 |
| S.Globulin | 20 L | 33 | 16 L | 19 L | 22 L | g/l | 28 - 53 |
| S.A/G | 1.29 H | 0.75 | 1.68 H | 1.30 H | 1.38 H | ratio | 0.50 – 1.20 |
| S.Creatinine | 48 L | 68 | 251 H | 67 | 550 H | umol/l | 55 - 130 |
| S.Urea | 2.0 L | 1.7 L | 4.0 | 4.7 | 6.6 | mmol/l | 2.7 – 12.3 |
| S.PO4 | 3.0 H | 2.8 | 3.0 H | 2.7 | 6.4 H | mmol/l | 1.2 – 2.8 |
| S.MG | 1.01 | 0.88 | 1.02 | 0.94 | 1.81 H | mmol/l | 0.62 – 1.15 |
| S.BOH | <0.1 | <0.1 | 0.1 | 0.1 | 0.2 | mmol/l | 0.0 – 1.0 |
| S.CA | 3.03 H | 2.90 H | 2.87 H | 2.93 H | 3.72 H | mmol/l | 2.00 – 2.60 |

* r0144 – report had comment that 'some elevation may have occurred post mortem'

CHEMISTRY/BIOCHEMISTRY
MBP born June 01

**7 Days**

| Tests Requested | 01041 | 01042 | 01043 | 001049 | | | Units | Ref Range |
|---|---|---|---|---|---|---|---|---|
| S.CK | Not Taken | Not Taken | Not Taken | 277 | | | U/l 30 | 0 -370 |
| S.AST | Not Taken | Not Taken | Not Taken | 57 | | | U/l 30 | 25 – 120 |
| S:GDH | Not Taken | Not Taken | Not Taken | 192 H | | | U/l 30 | 0 -45 |
| S.GGT | Not Taken | Not Taken | Not Taken | 49 H | | | U/l 30 | 0 – 32 |
| T.Bilirubin | Not Taken | Not Taken | Not Taken | 6 | | | umol/l | 0 -13 |
| S.Protein | Not Taken | Not Taken | Not Taken | 49 L | | | g/l | 60 - 86 |
| S.Alburnin | Not Taken | Not Taken | Not Taken | 29 | | | g/l | 25 – 40 |
| S.Globulin | Not Taken | Not Taken | Not Taken | 20 L | | | g/l | 28 - 53 |
| S.A/G | Not Taken | Not Taken | Not Taken | 1.43 H | | | ratio | 0.50 – 1.20 |
| S.Creatinine | Not Taken | Not Taken | Not Taken | 67 | | | umol/l | 55 - 130 |
| S.Urea | Not Taken | Not Taken | Not Taken | 2.7 | | | mmol/l | 2.7 – 12.3 |
| S.PO4 | Not Taken | Not Taken | Not Taken | 3.4 H | | | mmol/l | 1.2 – 2.8 |
| S.MG | Not Taken | Not Taken | Not Taken | 1.15 | | | mmol/l | 0.62 – 1.15 |
| S.BOH | Not Taken | Not Taken | Not Taken | <0.1 | | | mmol/l | 0.0 – 1.0 |
| S.CA | Not Taken | Not Taken | Not Taken | 3.87 H | | | mmol/l | 2.00 – 2.60 |

CHEMISTRY/BIOCHEMISTRY
MBP born June 01

**9 Months – Optigrow Chemistry**

| Tests Requested | 01041 | 01042 | 01043 | 01049 | | | Units | Ref Range |
|---|---|---|---|---|---|---|---|---|
| S.GGT | 8 | 10 | 8 | 9 | | | U/l 30 | 0 – 32 |
| S.B12 | 41 | 33 | 54 | 99 | | | pmol/l | 150 - 1000 |
| S.ZN | 5 | 5 | 8 | 8 | | | umol/l | 0 -45 |
| S.SE | 170 | 150 | 150 | 120 L | | | nmol/l | 140 - 1000 |
| Serum Cu | 9.4 | 10 | 8.6 | 9.4 | | | umol/l | 7.5 - 20 |
| | | | | | | | | |
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MBP Calves Born June 2001

HAEMATOLOGY

**Day 1**

| Tests Requested | 01041 | 01042 | 01043 | 01049 | r0144 | Units | Ref Range |
|---|---|---|---|---|---|---|---|
| HB | 111 | 115 | 125 | 87 | N/T | g/l | 60 - 160 |
| HCT | 0.31 | 0.32 | 0.37 | 0.26 | N/T | l/l | .240 - .360 |
| RBC | 5.91 | 6.95 | 7.29 | 4.88 L | N/T | $x10^{12}/1$ | 4.90 – 10.90 |
| MCV | 53 H | 47 | 51 H | 53 H | N/T | fl | 32 - 50 |
| MCH | 19 H | 17 | 17 | 18 H | N/T | pg | 11 - 17 |
| MCHC | 355 | 358 | 336 | 340 | N/T | g/l | 270 - 400 |
| WBC | 4.8 | 11.7 | 4.8 | 5.8 | N/T | $x10^{9}/1$ | 2.6 – 14.6 |
| Band Neut | N/T | 0.7 | N/T | 0.17 | N/T | $x10^{9}/1$ | 0 – 1.5 |
| Seg Neut | 3.36 | 9.13 | 1.54 | 3.54 | N/T | $x10^{9}/1$ | 0.6 – 9.4 |
| Lymphocytes | 1.25 | 1.52 | 2.64 | 1.86 | N/T | $x10^{9}/1$ | 1.0 – 6.4 |
| Monocytes | 0.10 | 0.35 | 0.24 | 0.06 | N/T | $x10^{9}/1$ | 0 -1.2 |
| Eosinophils | 0.05 | N/T | 0.19 H | 0.12 H | N/T | $x10^{9}/1$ | 0 – 0.1 |
| Basophils | 0.05 | N/T | 0.19 H | 0.06 | N/T | $x10^{9}/1$ | 0.1 |
| NRBC | 1 H | N/T | N/T | 21 H | N/T | /100leu | 0 |
| Fibrinogen | 4.8 | 4.4 | 2.1 L | 2.1 L | N/T | g/l | 3 - 9 |

MBP Calves Born June 2001

HAEMATOLOGY

**7 Days**
MBP born June 01

| Tests Requested | 01041 | 01042 | 01043 | 01049 | | | Units | Ref Range |
|---|---|---|---|---|---|---|---|---|
| HB | N/T | N/T | N/T | 102 | | | g/l | 60 - 160 |
| HCT | N/T | N/T | N/T | 0.29 | | | l/l | .170 - .470 |
| RBC | N/T | N/T | N/T | 6.00 | | | $x10^{12}/1$ | 4.90 – 10.90 |
| MCV | N/T | N/T | N/T | 49 | | | fl | 32 - 50 |
| MCH | N/T | N/T | N/T | 17 | | | pg | 11 - 17 |
| MCHC | N/T | N/T | N/T | 348 | | | g/l | 270 - 400 |
| WBC | N/T | N/T | N/T | 3.9 | | | $x10^{9}/1$ | 2.6 – 14.6 |
| Seg Neut | N/T | N/T | N/T | 1.48 | | | $x10^{9}/1$ | 0.6 – 9.4 |
| Lymphocytes | N/T | N/T | N/T | 2.03 | | | $x10^{9}/1$ | 1.0 – 6.4 |
| Monocytes | N/T | N/T | N/T | 0.23 | | | $x10^{9}/1$ | 0 -1.2 |
| Eosinophils | N/T | N/T | N/T | 0.12 H | | | $x10^{9}/1$ | 0 – 0.1 |
| Basophils | N/T | N/T | N/T | 0.04 | | | $x10^{9}/1$ | 0.1 |
| Fibrinogen | N/T | N/T | N/T | 3.8 | | | g/l | 3 - 9 |

# POST MORTEM

| | |
|---|---|
| Animal ID: nf 0137 | Recipient ID: 123 |
| Clone / Transgenic / Other | Group: MBP A12 |
| Age: — | DATE: 11-4-01 |
| Gestation age: 217d | Time of death: 1.30 |

Background information
123 hydrops. Induced 10am 4-4-01, PG intracervix, Dex 11-4-01.

euthanized at birth

Gross Abnormalities:
severe pot belly.
Some gelatinous fluid in peritoneum.

Diagnosis:
Hydrops allantois

| ORGAN | ✔ | COMMENTS |
|---|---|---|
| Placenta | | gelatinous<br>abnormal size & shape cotyledons |
| Skeletal | ✓ | Normal |
| Umbilicus | ✓ | Normal |
| Repro Tract | ✓ | Normal |
| Kidney | ✓ | Gelatinous fluid around renal capsule. Some gelatinous substance in renal pelvis (R) much bigger. |
| Adrenal | | elongated. Fluid in cavities shape → |
| Liver | ✓ | Huge. Fat belted appearance mainly due to liver. Crumbly, mottly appearance. Extra cystic sac off wei. |
| Lung | | immature. Did not aerate. |
| Heart | | pericardial fluid. Normal size & shape. |
| Brain | / | |
| Intestine | | emaciated, v little omental fat. |
| Thyroid | | |
| | | No cleft palate |
| | | |
| | | |

# Ruakura Animal Health Laboratory

PO Box 14-103
Hamilton
Phone (07) 834-1799
Fax (07) 856-8797

## CASE NO : R01095903

**Submitter:**
ANIMAL PHYSIOLOGY
BOX 23
RUAKURA (AAIFOR)

**Submitter Reference:** V 0137 MBP Cup 4

**Owner:** D L'HUILHER

**Species:** Bovine **Age:** Neonate
**Breed:** Friesian **Sex:** Female

**Date Sent:** 11 Apr 2001
**Date Received:** 11 Apr 2001 03:43 pm
**Date Tested:** 17 Apr 2001

**Notification:** Fax
**Fax Number:** 07 838 5536

**Test Requested:** 1 x Set Slides - Histology interpretation of 3 or more tissues,
1 x Histology Block - Haematoxylin & Eosin Stain,

## HISTOLOGY

DESCRIPTION

Liver: This contains part of a cyst wall. There are several layers of fibrous tissue, with a single layer of flattened or occasional cuboidal epithelial cells on the inner surface of the cyst.

DIAGNOSIS

Consistent with a biliary cyst.

Dam 123 induced to calve Hydrops

(Note: Results apply only to samples received, on an as found basis. Precision data will be supplied upon request. H = High result, L = Low result. Reference ranges are standard AHL reference ranges.)

Signed

**Report Date:** 17 Apr 2001 **Final Report - HISTOLOGY** **Report Fee: $50.00**



17 APR '01 PM 2:54

Ruakura Animal Health Laboratory

PO Box 14-103
Hamilton
Phone (07) 834-1799
Fax (07) 858-6797

## CASE NO : R01097635

Submitter:
ANIMAL PHYSIOLOGY
PRIVATE BAG 3123
HAMILTON (AAIFOR)

Species: Bovine
Breed: Friesian
Age: Prenatal
Sex: Female

Date Sent: 05 Jun 2001
Date Received: 05 Jun 2001 04:29 pm
Date Tested: 07 Jun 2001

Submitter Reference:

Owner: AGRESEARCH
RUAKURA

Notification: Fax
Fax Number: 07 838 5536 -

Test Requested: 2 x Body - Necropsy - Poultry, lamb, foetus, piglet, cage bir.

## NECROPSY

Bovine Abortion Report

Foetus R 0139A

Sex = female
Weight = 28 kg
Approximate foetal age = full term.

The carcase was autolysed and there was about 100 mls of blood tinged fluid in the thorax. The thyroids were enlarged - weight 52 gms.

Foetus R 0139B

Sex = female
Weight = 33 kg
Approximate foetal age = Full term.

The carcase was autolysed and the hair was yellow (meconium) stained. There was generalised subcutaneous oedema and excess fluid in the peritoneal cavity. The liver was enlarged and mottled. The omentum was haemorrhagic. The lungs and kidneys were congested. The urinary bladder could not be found.

Histology to follow.

Fresh foetal fluid, placenta, lung, stomach contents and are on hold in case you need further testing carried out. If you require further tests please quote this accession number when phoning.

Report Continued ....

7 JUN '01 AM 11:22

# Ruakura Animal Health Laboratory

PO Box 14-103
Hamilton
Phone (07) 834-1799
Fax (07) 856-8797

## CASE NO : R01097635

**Submitter:** ANIMAL PHYSIOLOGY
PRIVATE BAG 3123
HAMILTON (AAIFOR)

**Species:** Bovine **Age:** Prenatal
**Breed:** Friesian **Sex:** Female

**Date Sent:** 05 Jun 2001
**Date Received:** 05 Jun 2001 04:29 pm
**Date Tested:** 07 Jun 2001

**Submitter Reference:** MBP dead twins

**Owner:** AGRESEARCH
RUAKURA

**Notification:** Fax
**Fax Number:** 07 838 5536

**Test Requested:** 2 x Lung Tissue Culture.

## MICROBIOLOGY

| | | |
|---|---|---|
| R0139 A | Lung | |
| | (1) | No growth after 48 hours |
| R0139 B | Lung | |
| | (1) | No growth after 48 hours |

Test methodology references are available on request.
(Note: Results apply only to samples received, on an as found basis. Precision data will be supplied upon request. H = High result, L = Low result. Reference ranges are standard AHL reference ranges.)

**Signed**

**Report Date:** 07 Jun 2001 **Final Report - MICROBIOLOGY** **Report Fee: $35.00**



7 JUN '01 AM 5:06