New Zealand Clinical Test

TARARUA BREEDING CENTRE
NORTH ISLAND
NEW ZEALAND

RESULTS OF DOSING POORLY PERFORMING
BREEDING BULLS WITH
PALAMOUNTAINS
BOVINE BOOST

November 2004

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Introduction

This study was undertaken by vitaPOWER/New Zealand with the cooperation of the Tararua Breeding Centre (Masterston Road 1.R.D.3) in Woodville, New Zealand. This study was under the supervision of staff from the Food Technology Department of Massey University. This study was concluded in November, 2004. It was the first study to clinical reveal the positive benefits of the palaMOUNTAINS Bovine Boost formulae on sperm production for breeding bulls.

Research Methodology

- Bulls were, at time of testing, 3 years of age.
- 3 ejaculates per collection day taken 20 to 30 minutes apart.
- Bulls were feed 100 mls. per day of palaMOUNTAINS Bovine Boost animal supplement for the last two and a half months prior to a bull departing the test center.
- The bulls are fed hay on a daily basis with no other additive apart from grass ad lib.

Top Line Summary

Angus Bull # 22 and Hereford Bull # 2568, breed as breeding stock, had been collected in 2003 with unsuccessful results due to low percentages of live usable semen.

Semen was collected from the two bulls again in 2004.
In the initial semen collections done in 2004

Bull # 22 averaged 13 % alive, 27% abnormal and 5.6ml volume which was non commercial quality.

Bull # 2568 averaged 30% alive, 27% abnormal and 7.8ml volume, which was also non commercial quality.

The two bulls were dosed 100ml daily of palaMOUNTAINS Bovine Boost along with their normal feed in the last 2 1/2 months of semen collection with following results:

Bull #22 averaged 61% alive (a 469% improvement), 18.2% abnormal (a 33% improvement), 8.6ml volume (a 54% increase) which made these collections commercial.

Bull #2568 averaged 82% alive (a 273% improvement), 15% abnormal (a 45% improvement), 10.2ml volume (an 31% increase) which made these collections commercial.

These results are very encouraging.

Base Test Data

Commentary:

- ✓ Angus bull number 22 sperm was collected in 2003 with unsuccessful results due to percent alive.
- ✓ The percent alive is a visual assessment at time of collection.
- ✓ The density is an assessment from 10 to 30 (10 being coloured water to 30 being thick cream).
- ✓ Abnormalities are the total number per ejaculate as a percentage of the total volume of the semen collected. Main abnormalities present are, detached heads, bent and curled tails. There were a low number of distal tail droplets present.
- ✓ The volume is the total collected over 3 ejaculates.
- ✓ Thawed is the assessment of the semen after freezing and thawing. The first number is the percent alive the second number is the percentage moving forward.
- ✓ DNF is "did not Freeze, due to poor quality".

Data Table One – Bull Weights over the duration of their stay at the breeding center.

Angus Bull # 22		**Hereford bull # 22568**	
Date	**Weight**	**Date**	**Weight**
19.12.03	856	22.12.03	600
29.01.04	894	06.01.04	626
12.03.04	940	11.02.04	640
08.04.04	940	31.03.04	720
09.07.04	961	01.06.04	780
13.07.04	950	11.06.04	798

Data Table Two – Data Report for Angus Bull Number 22

Date	Alive %	Density X	Abnorm %	Volume ml	Thawed %
29.01.04	20	30	18	6	DNF
11.02.04	15	25	20	7	DNF
19.02.04	10	25	25	4	DNF
27.02.04	15	30	31	3	DNF
15.02.04	15	30	28	5	DNF
23.02.04	10	25	20	6	DNF
31.03.04	10	30	25	8	DNF
07.04.04	25	25	21	7	DNF
14.04.04	25	25	22	9	DNF
20.04.04	25	20	23	7	DNF
30.04.04	35	25	25	9	DNF
11.05.04	30	25	29	6	DNF
21.05.04	35	20	25	6	DNF
26.05.04	40	20	21	5	DNF
01.06.04	40	20	22	4	DNF
10.06.04	50	25	19	7	DNF
15.06.04	60	30	19	10	DNF
24.06.04	75	30	16	13	35/35
01.07.04	80	30	15	11	45/40
09.07.04	80	30	15	10	50/45

Data Table Three – Data Report for Hereford Bull Number 2568

Date	Alive %	Density X	Abnorm %	Volume ml	Thawed %
06.01.04	10	25	30	8	DNF
13.01.04	10	25	28	9.5	DNF
22.01.04	30	25	28	10	DNF
29.01.04	50	30	29	8	DNF
11.02.04	40	25	24	6	DNF
19.02.04	40	25	25	9	DNF
27.02.04	35	10	29	5	DNF
12.03.04	40	25	34	8	DNF
31.03.04	40	25	30	8	DNF
14.04.04	45	25	28	10	DNF
26.04.04	50	30	25	12	DNF
30.04.04	50	25	28	14	DNF
07.05.04	65	30	19	10	25/25
14.05.04	75	30	16	12	35/30
21.05.04	80	30	15	8	40/40
26.05.04	80	30	16	9	40/40
30.05.04	80	30	15	10	50/45
07.06.04	85	30	14	9	50/45
14.06.04	85	30	15	13	50/45
28.06.04	85	30	16	10	50/45