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20 APPENDICES

20.1 APPENDIX 1 Block intake and individual variation (Expt. 1, part1)

INTAKE OF SUPPLEMENT

Visit 1, on 19.9.95, 289 cows bled and results of block intake based on lithium marker for cattle weighing 350 kg body weight (column 4) or 400 kg liveweight (column 5)

Table 17 Expt. 1 Block intake and serum urea N

sample	Li ug/ml	BUN mg/100ml	block/350kgBW	block/400kgBW
1	1.55	8.65	218.46	249.67
2	1.62	10.54	228.46	261.10
3	1.55	9.32	218.18	249.35
4	1.10	11.89	155.22	177.40
5	2.01	11.08	282.69	323.08
6	0.81	11.62	113.39	129.59
7	1.95	14.15	274.24	313.42
8	0.17	5.45	24.09	27.53
9	0.19	10.18	26.34	30.10
10	1.34	11.53	189.03	216.03
11	0.15	10.95	21.13	24.15
12	0.61	6.89	85.92	98.20
13	1.12	11.35	158.04	181.10
14	1.08	8.02	173.37	173.37
15	1.02	8.29	144.23	164.84
16	0.23	7.84	32.82	37.51
17	1.45	9.96	204.10	233.25
18	1.17	5.81	164.24	187.70
19	1.96	12.70	276.64	316.16
20	0.48	6.89	67.89	77.59
21	0.22	9.01	30.99	35.41
22	1.52	8.69	214.52	245.17
23	0.00	6.58	0.00	0.00
24	0.83	7.66	115.50	133.45

26	0.95	11.35	133.67	152.77
28	0.64	7.70	90.71	103.67
29	0.02	8.87	2.11	2.41
30	1.14	8.60	159.87	182.71
31	1.54	11.71	216.77	247.74
32	0.03	5.72	3.66	4.19
33	1.64	11.67	230.44	263.36
34	2.09	11.53	336.92	336.92
35	1.14	8.78	162.23	183.03
36	0.97	8.02	137.05	156.63
37	0.00	4.41	0.00	0.00
38	0.05	4.64	7.32	8.53
39	0.07	5.45	9.86	11.27
40	0.94	9.23	151.32	151.32
41	1.06	10.68	149.45	170.80
42	2.33	14.60	328.33	375.23
43	1.39	9.22	195.22	223.11
44	1.31	11.25	185.08	211.52
45	0.77	6.58	108.88	124.43
46	1.12	6.95	158.32	180.94
47	1.75	9.59	246.21	281.39
48	0.89	8.66	124.80	142.46
49	2.38	13.85	335.23	383.12
50	0.94	6.25	132.83	151.80
51	0.57	7.87	79.58	90.95
52	1.28	12.83	180.43	206.21
53	1.12	9.31	158.18	180.78
54	2.52	13.71	354.39	405.01
55	0.90	10.84	126.20	144.23
56	0.56	9.40	78.88	90.15
57	0.86	13.24	120.43	137.63
58	1.13	10.23	158.60	181.26
59	0.05	7.50	7.04	8.05
60	0.00	8.24	0.00	0.00
61	1.72	10.88	242.27	276.88
62	0.40	8.71	56.06	64.07

63	1.60	15.75	225.23	257.40
64	0.00	7.09	0.00	0.00
65	1.59	10.33	224.10	256.11
66	0.59	14.36	83.10	94.98
67	0.00	4.68	0.00	0.00
69	1.98	8.75	278.89	318.73
70	0.00	11.81	0.00	0.00
71	2.08	15.51	293.54	335.47
72	1.51	10.10	212.69	243.07
73	0.03	7.97	4.23	4.83
74	0.07	9.17	9.86	11.27
75	0.02	7.22	2.25	2.58
76	1.12	11.39	158.04	180.61
77	1.19	12.04	167.19	191.08
78	0.14	6.62	19.02	21.73
79	0.56	10.56	78.17	89.34
80	0.91	9.82	127.47	145.68
81	0.51	10.79	71.13	95.78
82	1.43	11.35	201.28	230.03
83	0.88	6.16	123.53	141.18
84	0.57	8.65	80.85	92.40
85	1.13	7.61	158.46	181.10
87	0.05	10.79	7.32	8.37
88	1.02	8.35	142.97	163.39
89	0.46	8.95	64.37	73.57
90	0.05	10.74	6.62	7.57
91	0.09	7.51	12.68	14.49
92	0.69	10.39	96.91	110.75
93	2.12	10.54	298.33	340.95
94	0.03	6.51	3.66	4.19
95	0.88	10.14	124.37	142.14
96	0.79	8.75	111.13	127.01
97	0.00	8.90	0.00	0.00
98	0.00	7.71	0.42	0.48
99	2.00	17.30	281.99	322.27
100	0.17	7.81	23.38	26.72

101	0.42	5.97	58.60	66.97
102	0.11	8.45	14.79	16.90
103	1.53	10.94	215.08	245.81
104	1.23	10.14	173.67	198.48
105	0.80	7.94	112.12	128.14
106	0.88	11.26	124.09	141.82
107	1.82	15.44	256.78	293.46
108	1.06	8.51	148.60	169.83
109	0.86	8.08	120.99	138.28
110	0.25	10.54	34.65	39.60
111	1.38	12.27	193.96	221.66
112	1.22	11.06	172.12	196.71
113	0.78	8.95	110.43	126.20
114	0.01	7.70	0.99	1.13
115	0.35	10.20	49.02	56.02
116	0.46	6.11	64.51	73.73
117	0.08	5.24	11.83	13.52
118	1.68	10.44	236.78	270.60
119	1.21	9.86	170.01	194.30
120	0.88	15.01	124.51	142.30
121	0.04	4.91	5.78	6.60
122	0.72	8.42	100.71	115.10
123	0.05	5.34	6.76	7.73
124	0.70	5.39	99.16	113.33
125	0.42	9.72	58.45	66.80
126	0.68	7.84	96.06	109.79
127	0.40	12.65	55.92	63.91
128	0.00	7.50	0.00	0.00
129	0.00	8.23	0.00	0.00
130	1.02	9.86	143.25	163.71
131	0.72	7.84	101.56	116.06
132	1.24	9.91	175.22	200.25
133	1.96	8.13	275.51	314.87
134	0.10	10.49	13.52	15.45
135	0.19	7.70	26.34	30.10
136	0.05	8.18	6.62	7.57

137	1.77	9.00	249.45	285.09
138	0.07	6.06	9.16	10.46
139	1.58	8.03	223.11	254.99
140	1.81	13.23	255.37	291.85
141	0.09	6.40	12.68	14.49
142	1.68	11.83	236.63	270.44
143	0.13	6.49	17.75	20.28
144	0.05	4.19	7.18	8.21
145	1.57	5.20	221.42	253.05
146	0.39	8.94	54.93	62.78
147	0.14	7.33	20.28	23.18
148	1.31	13.30	184.52	210.88
149	1.01	6.44	141.70	161.94
150	1.01	7.62	142.26	162.59
151	2.16	14.34	304.81	348.35
152	0.04	5.44	5.78	6.60
153	0.03	8.99	3.80	4.35
154	0.16	8.75	21.97	25.11
155	1.84	10.08	258.75	295.71
156	1.17	8.75	164.52	188.02
157	1.26	10.69	176.77	202.02
158	1.15	13.77	161.56	184.64
159	0.01	9.42	1.97	2.25
161	0.56	9.89	78.17	89.34
162	1.45	10.79	203.67	232.77
163	1.16	7.81	162.69	185.93
164	1.36	12.59	191.00	218.28
165	0.72	5.39	100.99	115.42
166	0.07	8.28	9.86	11.27
167	0.02	6.20	2.96	3.38
168	0.02	9.79	2.96	3.38
169	2.06	10.17	290.58	332.09
170	0.02	6.72	2.39	2.74
171	0.03	2.93	4.51	5.15
172	0.89	9.23	125.92	143.91
173	0.27	5.39	38.03	43.46

174	2.21	10.93	311.57	356.08
175	0.04	6.34	5.07	5.80
176	1.16	13.53	163.25	186.57
177	1.84	10.27	259.31	296.36
178	0.96	10.69	135.64	152.23
179	0.00	10.50	0.56	0.64
180	0.02	3.69	2.68	3.06
181	1.80	12.35	254.10	290.40
182	3.27	12.68	459.89	525.59
183	1.13	6.20	158.46	181.10
184	0.79	10.50	111.56	127.49
185	0.94	11.86	132.83	151.80
186	0.74	5.09	103.53	118.32
187	1.73	8.93	243.25	278.00
188	1.44	12.43	202.55	231.48
189	0.39	10.32	55.36	63.26
190	1.85	11.62	260.72	297.97
191	0.51	8.35	72.12	82.42
192	0.21	4.75	29.86	34.13
193	0.06	9.46	80.67	9.18
194	0.58	7.34	81.84	93.53
195	1.24	9.84	174.52	199.45
196	1.05	9.31	148.18	169.35
197	0.73	11.52	102.12	116.71
198	0.00	4.03	0.00	0.00
199	2.70	9.84	379.88	434.15
200	0.41	7.58	57.33	65.52
201	0.87	8.93	121.98	139.40
202	0.00	10.32	0.00	0.00
203	1.59	7.44	223.25	255.15
204	0.00	4.22	0.00	0.00
205	0.00	5.71	0.00	0.00
206	1.63	8.45	229.59	262.39
207	1.39	8.64	195.79	223.76
208	0.70	9.65	98.46	112.52
209	1.69	11.18	237.76	271.73

210	1.01	12.62	141.70	161.94
211	1.54	5.62	216.63	247.58
212	1.12	13.73	157.76	180.29
213	1.51	11.18	212.69	243.07
214	1.49	11.62	210.44	240.50
215	1.07	11.76	150.01	171.44
216	0.00	7.92	0.00	0.00
217	1.20	8.50	168.32	192.37
218	0.00	7.20	0.00	0.00
219	0.72	8.06	101.70	116.22
220	0.72	6.82	101.56	116.06
221	0.15	7.68	21.69	24.79
222	0.31	8.83	43.24	49.42
223	0.63	8.40	88.60	101.25
224	0.00	4.51	0.00	0.00
225	1.46	9.66	205.22	234.54
226	2.33	12.48	328.19	368.34
227	0.70	9.21	98.74	112.84
228	0.74	8.96	103.95	118.80
229	1.71	15.75	240.44	274.79
230	2.26	12.18	318.89	364.45
231	0.00	2.82	0.00	0.00
232	1.73	14.24	244.24	279.13
233	0.56	8.65	79.44	90.79
234	0.88	8.55	123.95	141.66
235	0.98	5.59	138.18	157.92
236	0.41	10.62	57.75	66.00
237	0.81	9.91	114.65	131.03
238	1.41	11.72	198.74	227.14
239	1.00	9.76	140.15	160.17
240	2.13	17.91	300.30	343.20
241	0.50	7.40	70.85	80.97
242	1.74	9.46	244.66	279.61
243	0.97	7.65	136.49	155.99
244	1.18	14.29	166.35	190.11
245	1.15	6.49	161.84	184.96

246	0.85	10.21	119.30	136.35
247	0.29	9.29	40.14	45.88
248	0.00	4.03	0.00	0.00
249	1.53	11.02	215.37	246.13
250	2.68	12.93	377.21	431.09
251	0.77	10.82	108.18	123.63
252	1.13	8.30	159.45	182.22
253	1.04	7.75	145.92	166.77
254	0.58	4.18	82.12	93.85
255	1.16	9.46	163.67	187.05
256	1.12	7.95	157.33	179.81
257	0.02	6.89	2.25	2.58
258	0.10		13.80	15.78
259	1.39	11.27	195.93	223.92
260	3.10	13.23	436.79	499.19
261	0.05	1.81	6.90	7.89
262	1.62	9.61	228.32	260.94
263	0.00	4.43	0.00	0.00
264	1.28	10.26	180.86	206.69
265	1.86	9.21	262.55	300.06
266	0.00	5.63	0.00	0.00
267	2.49	10.69	350.02	400.02
268	1.47	12.07	206.49	235.99
269	0.00	8.40	0.00	0.00
270	0.35	6.69	49.86	56.99
271	3.09	11.78	434.96	497.09
272	2.22	12.40	312.41	357.04
273	0.00	6.92	0.00	0.00
274	1.43	12.83	201.42	230.20
275	0.58	5.30	81.70	93.37
276	2.41	9.11	339.46	387.95
277	1.02	9.11	143.95	164.52
278	1.20	10.45	169.59	193.81
279	0.87	15.55	122.40	139.89
280	0.29	8.16	40.71	46.52
281	1.06	8.16	149.30	170.63

282	1.08	12.93	151.56	173.21
283	1.61	13.60	226.21	258.53
284	0.05	4.96	6.76	7.73
285	2.16	14.02	303.54	346.90
286	0.02	10.68	2.96	3.38
287	1.11	9.28	156.07	178.36
290	1.17	9.71	164.09	187.54
291	0.08	8.07	10.70	12.23
292	0.86	7.49	121.56	138.92
293	0.05	6.72	7.04	8.05
294	1.51	7.85	212.27	242.59
25	1.63		229.45	262.23
27	1.56		219.17	250.48
68	0.86		120.71	137.96
86	0.68		95.08	108.66
160	0.85		120.01	137.15
288	1.07		150.71	172.24
289	0.42		58.74	67.13

20.1.1 APPENDIX 2 Results cattle 2nd sample 1995

Table 18 **Expt. 1 (part 2)**

Cattle rebled 2nd Visit(P)	Sera Li conc. ug/ml	Sera BUN mg/100ml	block eaten /350kg BW	block eaten /400kgBW
1	0.673	12.05	94.79	108.34
2	0.2	9.25	28.17	32.20
3	0.969	13.45	136.49	155.99
4	0.108	9.39	15.21	17.39
5	0.902	7.89	127.05	145.20
6	1.339	7.33	188.46	215.55
7	0.09	6.3	12.68	14.49
8	1.726	2.76	243.11	277.84
9	0.645	2.24	90.85	103.83
10	1.451	12.04	204.38	233.58
11	0.375	4.93	52.82	60.37
12	1.304	5.79	183.67	209.91
13	1.007	3.03	141.84	162.10
14	0.018	2.28	2.54	2.90
15	0.06	3.37	8.45	9.66
16	1.382	4.41	194.66	222.47
17	0.75	3.56	105.64	120.73
18	0.759	6.5	106.91	122.18
19	0.871	11.64	122.68	140.21
20	0.038	4.45	5.35	6.12
21	0.01	6.68	1.41	1.61
22	0.014	7.23	1.97	2.25
23	0.293	12.65	41.27	47.17
27	0.237	4.91	33.38	38.15
28	1.638	4.7	230.72	263.68
29	1.216	5.21	171.28	195.75
30	1.66	10.2	233.82	267.22
31	0.826	7.54	116.35	132.97
32	2.488	11.89	350.44	400.51
33	1.92	10.73	270.44	309.07
34	1.002	2.38	140.99	161.30

35	0.684	2.58	96.34	110.11
36	1.472	7.13	207.34	236.96
37	0.965	5.67	135.92	155.34
38	0.05	7.34	7.04	8.05
39	0.578	4.3	81.41	93.04
40	0.932	26	131.28	150.03
41	1.631	5.21	229.73	262.55
42	0.251	11.59	35.35	40.40
43	0.743	9.26	104.65	119.60
44	1.796	8.6	252.97	289.11
45	0.016	9.76	2.25	2.58
46	0.535	11.59	75.36	86.12
47	2.096	8.4	295.23	337.40
48	0.013	4.45	1.83	1.83
49	1.118	15.38	157.47	179.97
50	0.718	18.01	101.13	115.58
51	1.157	8.35	162.97	186.25
52	2.267	12.14	319.32	364.93
53	0.11	6.73	15.49	17.71
54	1.872	7.89	263.68	301.35
55	3.025	10.73	426.08	486.95
56	2.13	15.23	300.02	342.88
57	0.03	4.55	4.23	4.83
58	0.019	9.87	2.68	3.06
59	2.087	5.67	293.96	335.96
60	0.046	5.51	6.48	7.40
61	0.81	8.55	114.09	130.39
62	0.915	8.31	128.88	147.29
63	0.084	13.1	11.83	13.52
64	2.556	10.73	360.02	411.45
65	2.078	9.81	292.69	334.51
66	3.667	11.74	516.51	590.30
67	0.718	6.43	101.13	115.58
68	1.302	8.84	183.39	209.59
69	1.731	10.63	243.82	278.65
70	0.029	4.16	4.08	4.67

71	2.503	11.84	352.56	402.92
72	1.038	7.49	146.21	167.09
73	0.353	12.95	49.72	56.82
74	1.092	9.28	153.81	175.79
75	1.162	8.65	163.67	187.05
76	0.443	5.51	62.40	71.31
77	0.038	6.33	5.35	6.12
78	1.21	9.76	170.43	194.78
79	0.734	12.95	103.39	118.16
80	2.429	12.08	342.13	391.01
81	1.797	22.33	253.11	289.27
24	0.02		2.82	3.22
25	0.034		4.79	5.47
26	1.52		214.10	244.68
Cattle not bled 1st visit	sera Li ug/ml	BUN	block/350kg	block/400kg
NP500	0.393	13.08	55.36	63.26
501	1.806	6.89	254.38	290.72
502	0.542	12.58	76.34	87.25
503	0.178	7.4	25.07	28.65
504	0.09	9.51	12.68	14.49
505	0.122	11.32	17.18	19.64
506	0.886	9.01	124.80	142.62
507	0	4.33	0.00	0.00
508	0.001	8.75	0.14	0.16
509	2.146	11.02	302.27	345.45
510	0.036	5.68	5.07	5.80
511	0.544	10.21	76.62	87.57
512	0.023	5.08	3.24	3.70
513	0.046	12.88	6.48	7.40
514	0.035	5.99	4.93	5.63
515	0.034	6.64	4.79	5.47
516	0.676	9.31	95.22	108.82
517	0.014	16.45	1.97	2.25
518	0.009	4.33	1.27	1.45

519	0.018	10.31	2.54	2.90
520	1.98	4.93	278.89	318.73
521	0.025	14.54	3.52	4.02
522	0.173	14.79	24.37	27.85
523	0.103	3.72	14.51	16.58
524	0.002	6.24	0.28	0.32
525	0.026	5.74	3.66	4.19
526	0	9.71	0.00	0.00
527	1.209	7.14	170.29	194.62
528	0.006	5.58	0.84	0.97
529	0.031	9.26	4.37	4.99
530	0	15.95	0.00	0.00
531	1.929	12.17	271.71	310.52
532	0.324	9.21	45.64	52.16
533	0.027	9.26	3.80	4.35
534	0.629	8.7	88.60	101.25
535	0.011	15.8	1.55	1.77
536	0.123	10.41	17.33	19.80
537	0.024	12.12	3.38	3.86
538	1.021	11.02	143.81	164.36
539	0.111	6.99	15.63	17.87
540	0.948	9.96	133.53	152.60
541	0.2	11.52	28.17	32.20
542	0.105	5.6	14.79	16.90
543	2.312	9.58	325.65	372.18
544	1.205	9.29	169.73	193.98
545	1.274	7.63	179.45	205.08
546	0.168	11.14	23.66	27.04
547	0.496	6.4	69.86	79.84
548	0.103	6.78	14.51	16.58
549	0.021	15.03	2.96	3.38
550	0.392	18.16	55.21	63.10
551	0.02	5.31	2.82	3.22
552	0.033	12.76	4.65	5.31
553	0.032	3.6	4.51	5.15
554	0.018	12.76	2.54	2.90

555	0.031	13.94	4.37	4.99
556	0.025	12.38	3.52	4.02
557	0.005	11.85	0.70	0.80
558	0.027	12.85	3.80	4.35
560	0.014	12.47	1.97	2.25
561	0.031	9.63	4.37	4.99
562	0.033	5.22	4.65	5.31
563	0.004	11.9	0.56	0.64
564	0.007	11.29	0.99	1.13
565	0	6.5	0.00	0.00
566	0	18.59	0.00	0.00
567	0	13.37	0.00	0.00
568	0	7.87	0.00	0.00
569	0	5.83	0.00	0.00
570	0	10.48	0.00	0.00
571	0.008	10.91	1.13	1.29
559	0.023		3.24	3.70

The total number of cows bled in Experiment1 were 444.

20.1.2 APPENDIX 3 Supplement intake (Expt 2)

Table 19 Supplement intake (Expt 2)

number	live weight	Mean Li ug/ml	block consumed(g)
6701	391.0	0.91	143.2
6702	446.0	0.09	16.6
6703	425.0	0.90	153.9
6704	492.0	2.09	413.8
705	396.0	0.43	68.5
706	444.0	0.15	26.4
707	427.0	1.37	235.4
708	372.0	0.12	18.3
709	474.0	1.03	196.5
710	439.0	0.01	1.4
711	406.0	0.58	94.8
712	357.0	0.84	120.3
713	271.0	0.12	13.1
714	426.0	0.79	135.0
715	482.0	0.56	108.6
716	363.0	0.14	20.1
717	399.0	1.80	288.6
718	299.0	0.23	27.4
719	506.0	1.19	241.3
720	370.0	0.10	38.3
721	345.0	0.26	35.8
722	483.0	0.07	12.6
723	318.0	0.28	35.2
724	468.0	0.10	18.4
725	408.0	0.80	131.4
726	437.0	0.09	15.4
727	362.0	0.88	128.6
728	360.0	0.17	24.3
729	355.0	0.87	124.7
730	446.0	0.01	0.9
731	451.0	0.77	139.8

732	437.0	0.57	100.7
733	407.0	0.01	1.6
734	412.0	1.44	239.2
735	462.0	1.75	325.4
736	366.0	0.03	4.4
737	368.0	0.03	4.4
738	403.0	1.06	173.0
739	393.0	1.26	198.9
740	425.0	0.03	5.6
741	463.0	0.38	70.3
742	362.0	0.07	10.2
743	427.0	1.16	199.8
744	363.0	0.12	17.5
745	395.0	0.04	6.0
746	314.0	0.09	11.1
747	438.0	1.99	350.8
748	500.0	0.90	181.1
749	392.0	0.84	132.5
750	396.0	0.81	128.7
751	439.0	0.87	153.3
752	320.0	1.18	151.6
753	481.0	0.05	9.7
754	445.0	0.96	172.4
755	354.0	0.21	31.6
756	370.0	0.31	45.8
757	474.0	0.61	116.4
758	462.0	0.11	20.0
759	379.0	0.49	74.0
760	413.0	0.15	24.5
761	474.0	0.12	22.4
762	367.0	1.17	172.1
763	403.0	0.02	3.6
764	364.0	0.84	123.0
765	410.0	0.11	18.6
766	354.0	1.36	193.8
767	546.0	0.16	35.7

768	357.0	1.91	274.8
769	424.0	0.03	5.1
770	339.0	2.16	295.0
771	399.0	0.38	61.0
772	334.0	1.09	146.2
773	606.0	1.28	312.8
774	330.0	1.09	145.1
775	454.0	0.32	57.6
776	367.0	0.10	14.8
777	412.0	1.12	186.1
778	416.0	1.56	261.6
779	435.0	0.59	102.4
780	376.0	0.31	46.9
781	432.0	0.07	11.3
782	415.0	0.79	131.1
783	481.0	0.70	134.5
784	375.0	1.61	243.0
785	530.0	0.79	169.0
786	455.0	0.15	27.0
787	490.0	0.35	68.0
788	331.0	1.73	230.8
789	632.0	1.51	382.8
790	528.0	0.45	96.2
791	410.0	0.10	16.1
792	443.0	0.13	22.3
793	358.0	0.47	67.0
794	493.0	0.29	57.5
795	441.0	0.91	160.6
796	443.0	1.04	184.5
797	322.0	0.71	91.4
798	364.0	0.31	45.8
799	313.0	0.55	68.7
800	376.0	1.41	213.0

20.1.3 APPENDIX 4 Pregnancy testing (Expt 2)

Table 20* **Pregnancy status 2 = pregnant 1 = nonpregnant**

Lactation status 1 = lactating 0 = dry - = not assessed

Progesterone nmol/L	Progesterone ng/ml	Pregnancy/ Lactation		number	block consumed(g)	live weight
>79.62	>25	21	late	742	10.2	362.0
>79.62	>25	21	mid	755	31.6	354.0
>79.62	>25	20	late	704	413.8	492.0
>79.62	>25	20	late	705	68.5	396.0
>79.62	>25	20	late	706	26.8	444.0
>79.62	>25	20	late	707	235.4	427.0
>79.62	>25	20	late	711	94.8	406.0
>79.62	>25	20	late	712	120.3	357.0
>79.62	>25	20	mid	717	288.6	399.0
>79.62	>25	20	mid	719	241.3	506.0
>79.62	>25	20	late	723	35.2	318.0
>79.62	>25	20	mid	732	100.7	437.0
>79.62	>25	20	mid	733	1.6	407.0
>79.62	>25	20	mid	735	325.4	462.0
>79.62	>25	20	early	738	173.0	403.0
>79.62	>25	20	late	749	132.5	392.0
>79.62	>25	20	late	764	123.0	364.0
>79.62	>25	20	early	766	193.8	354.0
>79.62	>25	20	mid	767	35.7	546.0
>79.62	>25	20	late	768	274.8	357.0
>79.62	>25	20	late	770	295.0	339.0
>79.62	>25	20	mid	774	145.1	330.0
>79.62	>25	20	mid	776	14.8	367.0
>79.62	>25	20	mid	778	261.6	416.0
>79.62	>25	20	mid	779	102.4	435.0
>79.62	>25	20	mid	780	46.9	376.0
>79.62	>25	20	mid	785	169.0	530.0
>79.62	>25	20	late	792	22.3	443.0

>79.62	>25	20	late	793	67.0	358.0
>79.62	>25	11		750	129.1	396.0
>79.62	>25	11		751	153.7	439.0
>79.62	>25	11		753	9.7	481.0
>79.62	>25	11		760	24.9	413.0
>79.62	>25	11		788	230.4	331.0
>79.62	>25	11		796	185.4	443.0
>79.62	>25	11		799	69.3	313.0
>79.62	>25	10		720	14.9	370.0
>79.62	>25	10		734	238.8	412.0
>79.62	>25	10		739	199.3	393.0
>79.62	>25	10		740	5.1	425.0
>79.62	>25	10		747	350.8	438.0
>79.62	>25	10		752	152.0	320.0
>79.62	>25	10		758	16.7	462.0
>79.62	>25	10		765	18.2	410.0
>79.62	>25	10		773	312.2	606.0
>79.62	>25	10		775	58.5	454.0
>79.62	>25	10		784	243.0	375.0
>79.62	>25	0		701	143.2	391.0
>79.62	>25	0		702	16.6	446.0
>79.62	>25	0		703	153.9	425.0
>79.62	>25	0		708	18.3	372.0
64.49	20.25	20	mid	716	20.1	363.0
49.78	15.63	20	late	791	16.1	410.0
40.41	12.69	20	early	787	68.0	490.0
38.54	12.11	20	late	789	382.8	632.0
37.32	11.72	20	mid	748	181.1	500.0
36.94	11.60	10		763	4.9	403.0
36.91	11.59	20	mid	741	70.3	463.0
35.35	11.10	11		743	199.3	427.0
33.82	10.62	20	late	725	131.4	408.0
33.12	10.40	20	late	757	116.4	474.0
32.32	10.15	10		710	7.1	439.0
28.25	8.87	20	late	714	135.0	426.0
27.90	8.76	10		771	61.0	399.0

26.69	8.38	20	early	727	128.6	362.0
21.15	6.64	10		786	27.5	455.0
19.04	5.98	21	early	730	0.9	446.0
15.45	4.85	20	early	797	91.4	322.0
13.76	4.32	10		746	11.4	314.0
13.44	4.22	10		782	131.9	415.0
12.10	3.80	20	late	794	57.5	493.0
11.56	3.63	0		728	24.3	360.0
11.43	3.59	20	early	726	15.4	437.0
11.05	3.47	10		762	172.8	367.0
10.80	3.39	11		783	135.5	481.0
7.99	2.51	0		709	196.5	474.0
7.26	2.28	10		800	213.4	376.0
5.67	1.78	11		759	74.7	379.0
5.41	1.70	11		729	124.3	355.0
4.65	1.46	20	early	769	5.1	424.0
4.43	1.39	0		718	27.4	299.0
3.98	1.25	21	early	798	45.8	364.0
3.73	1.17	20	early	724	18.4	468.0
3.41	1.07	10		713	13.1	271.0
3.03	0.95	21	early	745	6.0	395.0
2.99	0.94	21	early	731	139.8	451.0
2.96	0.93	0		715	108.6	482.0
2.90	0.91	11		736	4.4	366.0
2.87	0.90	11		744	17.5	363.0
2.39	0.75	20	mid	722	12.6	483.0
2.32	0.73	20	mid	781	11.3	432.0
2.07	0.65	21	early	795	160.6	441.0
2.01	0.65	21	early	790	96.2	528.0
2.01	0.63	11		772	146.5	334.0
2.01	0.63	10		721	36.1	345.0
2.01	0.63	10		777	185.7	412.0
1.97	0.62	20	early	761	22.4	474.0
1.31	0.41	11		737	4.4	368.0
1.21	0.38	10		754	171.9	445.0
0.67	0.21	21	early	756	45.8	370.0

*Pregnancy Length early = uterus still within or just below pelvic brim up to 16 wks

mid = foetus not palpable, uterus in abdominal cavity .>4 mths <7 mths

late = foetus easily palpable >7 mths

20.1.4 APPENDIX 5 Intake with reference to gestation length

Table 21

Early Pregnancy	Mid- Pregnancy	Late Pregnancy
173	31.6	10.2
193.8	288.6	413.8
68	241.3	68.5
128.6	100.7	26.8
0.9	1.6	235.4
91.4	325.4	94.8
15.4	35.7	120.3
5.1	145.1	35.2
45.8	14.8	132.5
18.4	261.6	123
6	102.4	274.8
139.8	46.9	295
160.6	169	22.3
96.2	20.1	67
22.4	181.1	16.1
45.8	70.3	382.8
sum 1211.2	12.6	131.4
Average 75.7	11.3	116.4
	sum 2060.1	135
	average 114.5	57.5
		sum 2558.8
		average 137.94

20.1.5 APPENDIX 6 Progesterone assay

Table 22

Progesterone nmol/L	Progesterone ng/ml	Pregnancy/ Lactation		number	block consumed(g)	live weight
>79.62	>25	21	late	742	10.2	362.0
>79.62	>25	21	mid	755	31.6	354.0
>79.62	>25	20	late	704	413.8	492.0
>79.62	>25	20	late	705	68.5	396.0
>79.62	>25	20	late	706	26.8	444.0

>79.62	>25	20	late	707	235.4	427.0
>79.62	>25	20	late	711	94.8	406.0
>79.62	>25	20	late	712	120.3	357.0
>79.62	>25	20	mid	717	288.6	399.0
>79.62	>25	20	mid	719	241.3	506.0
>79.62	>25	20	late	723	35.2	318.0
>79.62	>25	20	mid	732	100.7	437.0
>79.62	>25	20	mid	733	1.6	407.0
>79.62	>25	20	mid	735	325.4	462.0
>79.62	>25	20	early	738	173.0	403.0
>79.62	>25	20	late	749	132.5	392.0
>79.62	>25	20	late	764	123.0	364.0
>79.62	>25	20	early	766	193.8	354.0
>79.62	>25	20	mid	767	35.7	546.0
>79.62	>25	20	late	768	274.8	357.0
>79.62	>25	20	late	770	295.0	339.0
>79.62	>25	20	mid	774	145.1	330.0
>79.62	>25	20	mid	776	14.8	367.0
>79.62	>25	20	mid	778	261.6	416.0
>79.62	>25	20	mid	779	102.4	435.0
>79.62	>25	20	mid	780	46.9	376.0
>79.62	>25	20	mid	785	169.0	530.0
>79.62	>25	20	late	792	22.3	443.0
>79.62	>25	20	late	793	67.0	358.0
>79.62	>25	11		750	129.1	396.0
>79.62	>25	11		751	153.7	439.0
>79.62	>25	11		753	9.7	481.0
>79.62	>25	11		760	24.9	413.0
>79.62	>25	11		788	230.4	331.0
>79.62	>25	11		796	185.4	443.0
>79.62	>25	11		799	69.3	313.0
>79.62	>25	10		720	14.9	370.0
>79.62	>25	10		734	238.8	412.0
>79.62	>25	10		739	199.3	393.0
>79.62	>25	10		740	5.1	425.0
>79.62	>25	10		747	350.8	438.0

>79.62	>25	10		752	152.0	320.0
>79.62	>25	10		758	16.7	462.0
>79.62	>25	10		765	18.2	410.0
>79.62	>25	10		773	312.2	606.0
>79.62	>25	10		775	58.5	454.0
>79.62	>25	10		784	243.0	375.0
>79.62	>25	0		701	143.2	391.0
>79.62	>25	0		702	16.6	446.0
>79.62	>25	0		703	153.9	425.0
>79.62	>25	0		708	18.3	372.0
64.49	20.25	20	mid	716	20.1	363.0
49.78	15.63	20	late	791	16.1	410.0
40.41	12.69	20	early	787	68.0	490.0
38.54	12.11	20	late	789	382.8	632.0
37.32	11.72	20	mid	748	181.1	500.0
36.94	11.60	10		763	4.9	403.0
36.91	11.59	20	mid	741	70.3	463.0
35.35	11.10	11		743	199.3	427.0
33.82	10.62	20	late	725	131.4	408.0
33.12	10.40	20	late	757	116.4	474.0
32.32	10.15	10		710	7.1	439.0
28.25	8.87	20	late	714	135.0	426.0
27.90	8.76	10		771	61.0	399.0
26.69	8.38	20	early	727	128.6	362.0
21.15	6.64	10		786	27.5	455.0
19.04	5.98	21	early	730	0.9	446.0
15.45	4.85	20	early	797	91.4	322.0
13.76	4.32	10		746	11.4	314.0
13.44	4.22	10		782	131.9	415.0
12.10	3.80	20	late	794	57.5	493.0
11.56	3.63	0		728	24.3	360.0
11.43	3.59	20	early	726	15.4	437.0
11.05	3.47	10		762	172.8	367.0
10.80	3.39	11		783	135.5	481.0
7.99	2.51	0		709	196.5	474.0
7.26	2.28	10		800	213.4	376.0

5.67	1.78	11		759	74.7	379.0
5.41	1.70	11		729	124.3	355.0
4.65	1.46	20	early	769	5.1	424.0
4.43	1.39	0		718	27.4	299.0
3.98	1.25	21	early	798	45.8	364.0
3.73	1.17	20	early	724	18.4	468.0
3.41	1.07	10		713	13.1	271.0
3.03	0.95	21	early	745	6.0	395.0
2.99	0.94	21	early	731	139.8	451.0
2.96	0.93	0		715	108.6	482.0
2.90	0.91	11		736	4.4	366.0
2.87	0.90	11		744	17.5	363.0
2.39	0.75	20	mid	722	12.6	483.0
2.32	0.73	20	mid	781	11.3	432.0
2.07	0.65	21	early	795	160.6	441.0
2.01	0.65	21	early	790	96.2	528.0
2.01	0.63	11		772	146.5	334.0
2.01	0.63	10		721	36.1	345.0
2.01	0.63	10		777	185.7	412.0
1.97	0.62	20	early	761	22.4	474.0
1.31	0.41	11		737	4.4	368.0
1.21	0.38	10		754	171.9	445.0
0.67	0.21	21	early	756	45.8	370.0

20.1.6 APPENDIX 7 17β-oestradiol assay results

Table 23

Oestradiol pmol/L (pg/ml)	number	Pregnancy/ Lactation	Progesterone ng/ml	Progesterone nmol/L
<13 (<3.54)	715		0.93	2.96
<13 (<3.54)	722		0.75	2.39
<13 (<3.54)	724	20	1.17	3.73
<13 (<3.54)	729		1.70	5.41
<13 (<3.54)	759	11	1.78	5.67
<13 (<3.54)	794	20	3.80	12.10
<13 (<3.54)	798	21	1.25	3.98

<13 (<3.54)	800	10	2.28	7.26
<13 (<3.54)	783	11	3.39	10.80
111 (30.25)	790	21	0.65	2.01
17 (4.63)	762	10	3.47	11.05
17 (4.63)	718		1.39	4.43
176 (48.0)	721	10	0.63	2.01
19 (5.18)	737	11	0.41	1.31
23 (6.270	781	20	0.73	2.32
28 (7.63)	731	21	0.94	2.99
28 (7.63)	777	10	0.63	2.01
35 (9.54)	709	0	2.51	7.99
35 (9.54)	728	0	3.63	11.56
35 (9.54)	736	11	0.91	2.90
35 (9.54)	761	20	0.62	1.97
36 (9.8)	713	10	1.07	3.41
36 (9.8)	744	11	0.90	2.87
37 (10.08)	797	20	4.85	15.45
45 (12.26)	772	11	0.63	2.01
49 (13.35)	745	21	0.95	3.03
56 (15.24)	782	10	4.22	13.44
56 (15.25)	746	10	4.32	13.76
60 (16.35)	754	10	0.38	1.21
61 (16.62)	726	20	3.59	11.43
65 (17.7)	769	20	1.46	4.65
97 (26.43)	795	21	0.65	2.07

APPENDIX 7 **Cow weights**

Table 24

number	cow weight	number	cow weight	number	cow weight	number	cow weight
701	391.0	725	408.0	750	396.0	775	454.0
702	446.0	726	437.0	751	439.0	776	367.0
703	425.0	727	362.0	752	320.0	777	412.0
704	492.0	728	360.0	753	481.0	778	416.0
705	396.0	729	355.0	754	445.0	779	435.0
706	444.0	730	446.0	755	354.0	780	376.0
707	427.0	731	451.0	756	370.0	781	432.0
708	372.0	732	437.0	757	474.0	782	415.0
709	474.0	733	407.0	758	462.0	783	481.0
710	439.0	734	412.0	759	379.0	784	375.0
711	406.0	735	462.0	760	413.0	785	530.0
712	357.0	736	366.0	761	474.0	786	455.0
713	271.0	737	368.0	762	367.0	787	490.0
714	426.0	738	403.0	763	403.0	788	331.0
715	482.0	739	393.0	764	364.0	789	632.0
716	363.0	740	425.0	765	410.0	790	528.0
717	399.0	741	463.0	766	354.0	791	410.0
718	299.0	742	362.0	767	546.0	792	443.0
719	506.0	743	427.0	768	357.0	793	358.0
720	370.0	744	363.0	769	424.0	794	493.0
721	345.0	745	395.0	770	339.0	795	441.0
722	483.0	746	314.0	771	399.0	796	443.0
723	318.0	747	438.0	772	334.0	797	322.0
724	468.0	748	500.0	773	606.0	798	364.0
		749	392.0	774	330.0	799	313.0
						800	376.0

Average cow weight = 413 kg

APPENDIX 8 **Weights of calves**

Table 25

calf weights kg	**calf weights kg**
233.5	126
188	175.5
199.5	98
149.5	195
120.0	201.5
144	224
95	188.5
122	97
140.5	222.5
154.5	116
156.5	194
131.5	75
124	**average weight 154.86**

THE END