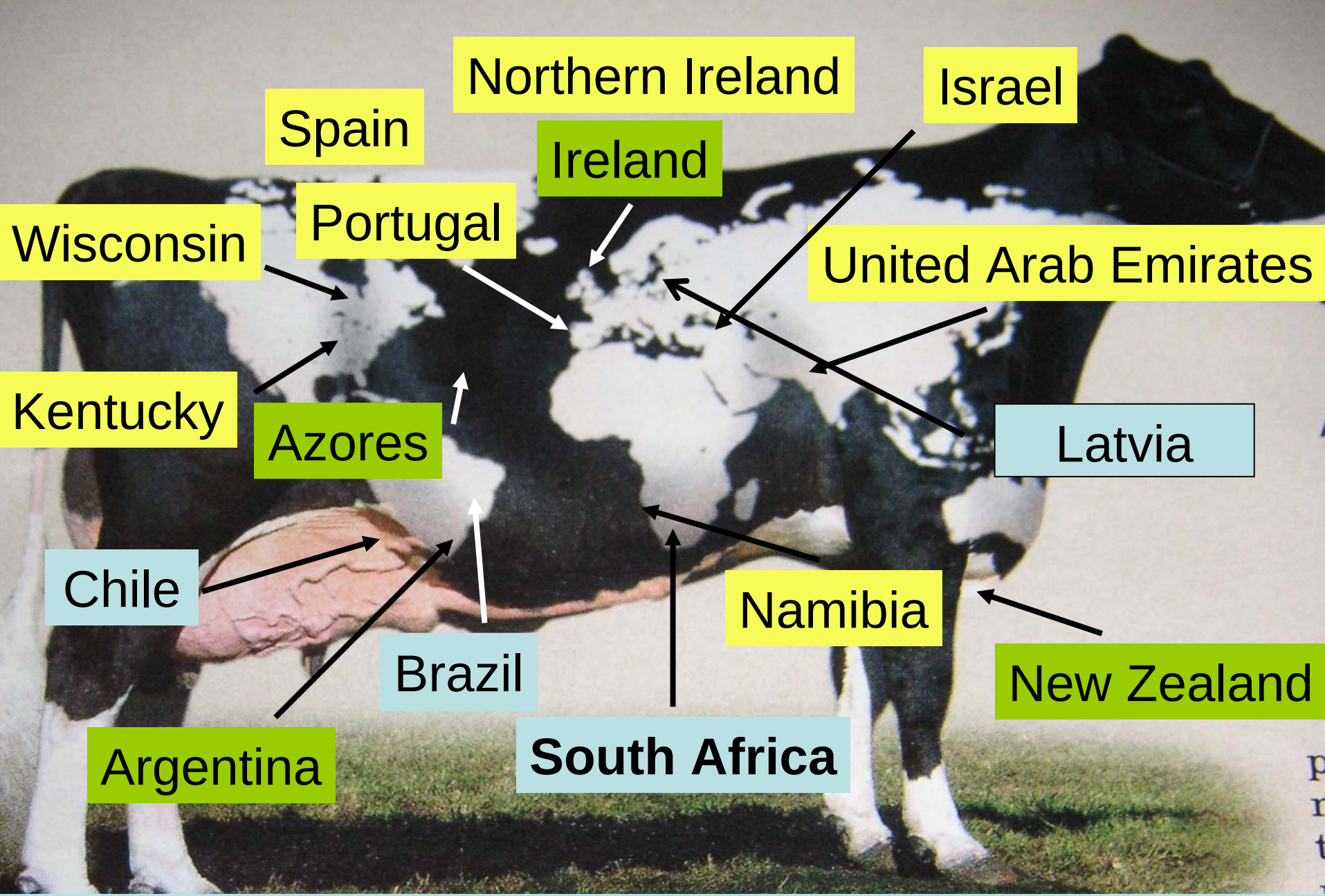
Maximizing performance on a Southern Hemisphere pasture based dairy farm

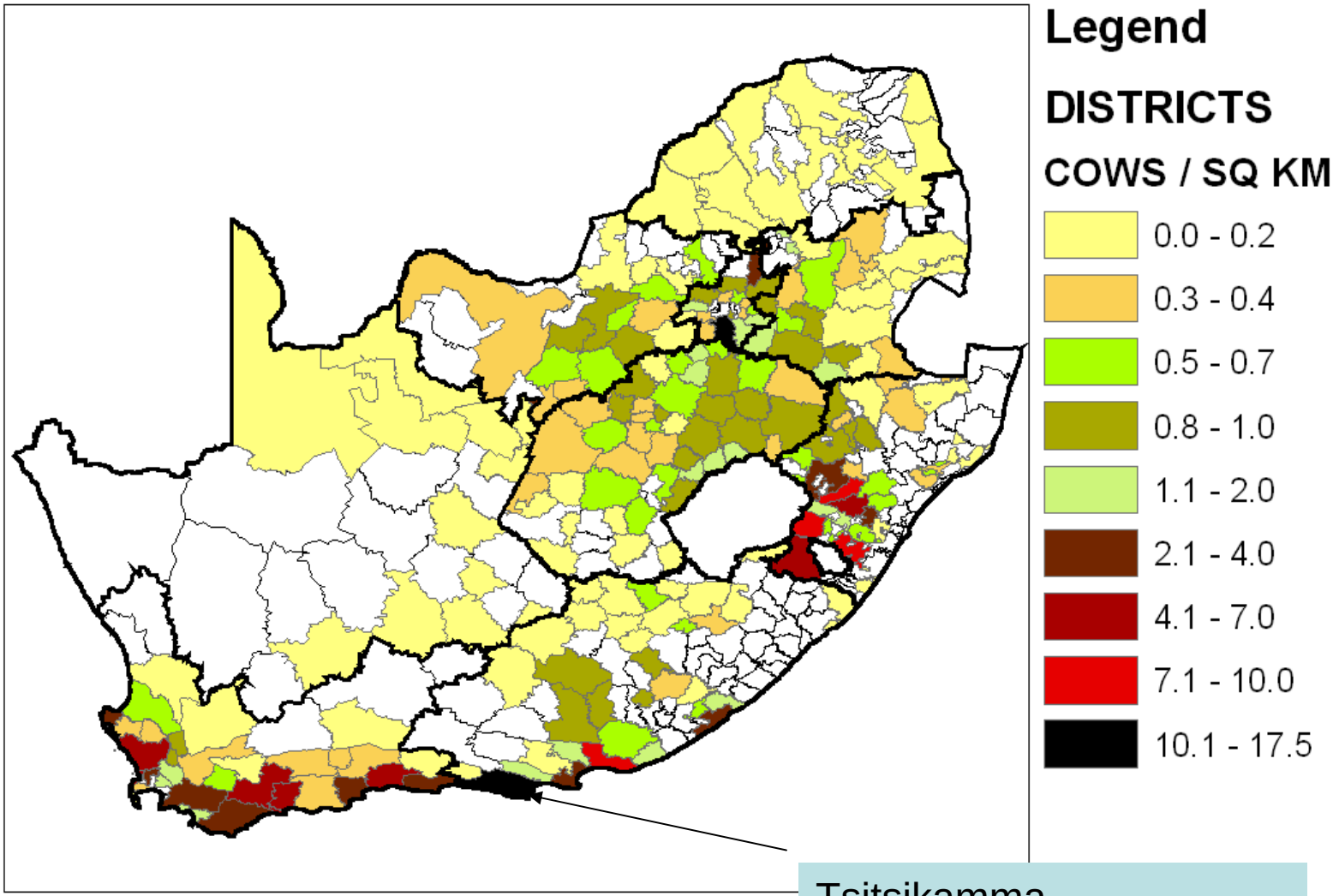
Managing pasture herds efficiently
in South Africa

Nigel Lok

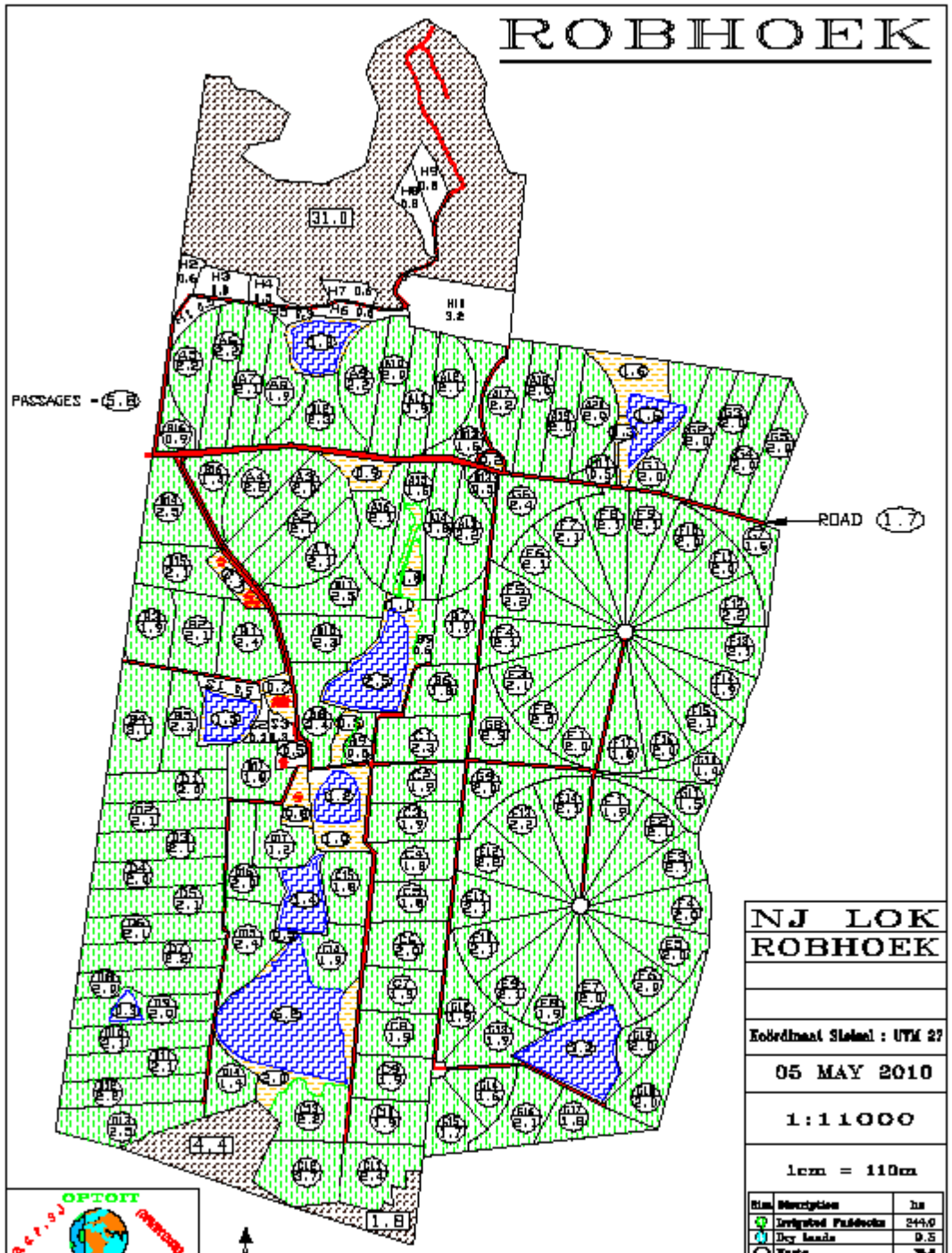


The Universal Cow

South Africa cow concentration



Tsitsikamma
33 m2 per cow on pasture


ROBHOEK
PASSAGES - 5.8
ROAD 1.7
31.0
H1 3.2
H2 0.6
H3 1.9
H4 1.9
H5 0.8
H6 0.8
H7 0.8
H8 0.8
H9 0.8
5.4
1.8
NJ LOK
ROBHOEK
Koördinaat Sisteem : UTM 27
05 MAY 2010
1:11000
1cm = 110m
Sim
Description
ha
Irrigated Paddocks
244.0
Dry Lands
9.5


7052
6163


Big Dutchman
Vegetable Oil
Fish Oil

Laws of dairying

- **Feed your cows properly and individually to manage milk, condition and fertility.**
- **Body condition is king**
- **Dry period and transition is crucial**
- **Grow heifers out to genetic potential**

Lessons learnt

- **Individual cow management is the best way to increase efficiencies & profits**

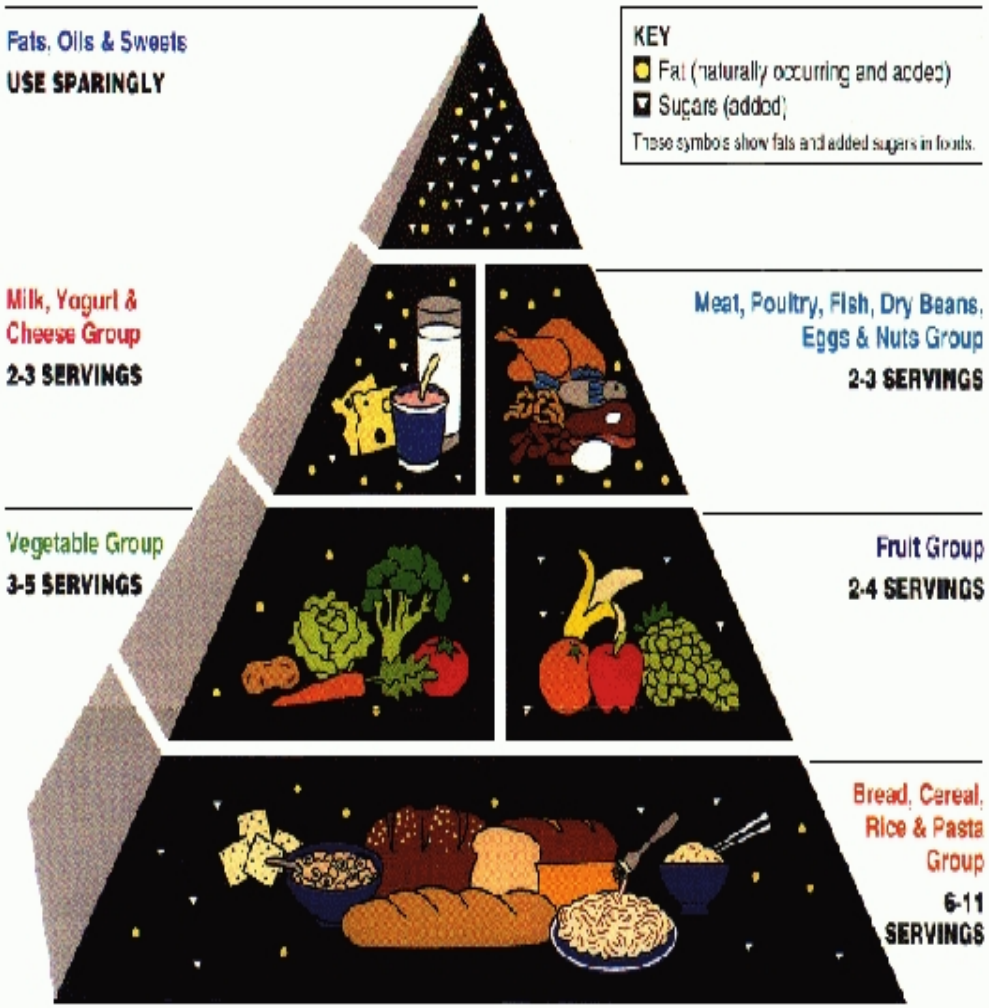
- **Management systems should collect & utilize data such as milk, BF, protein, lactose, body weight, height, activity, conductivity, SCC, etc to be effective**

- **Only with comprehensive data collected at every milking can we make informed decisions.**

The principles of feeding roughage and supplementing cows to optimize performance and Body condition score (BCS)

USDA Center for Nutrition Policy and Promotion (CNPP) 2005 Food Py

Economic cow pyramid



{ **Concentrates**

$350 - $500/mt DM

{ **Supplements**
maize silage, etc

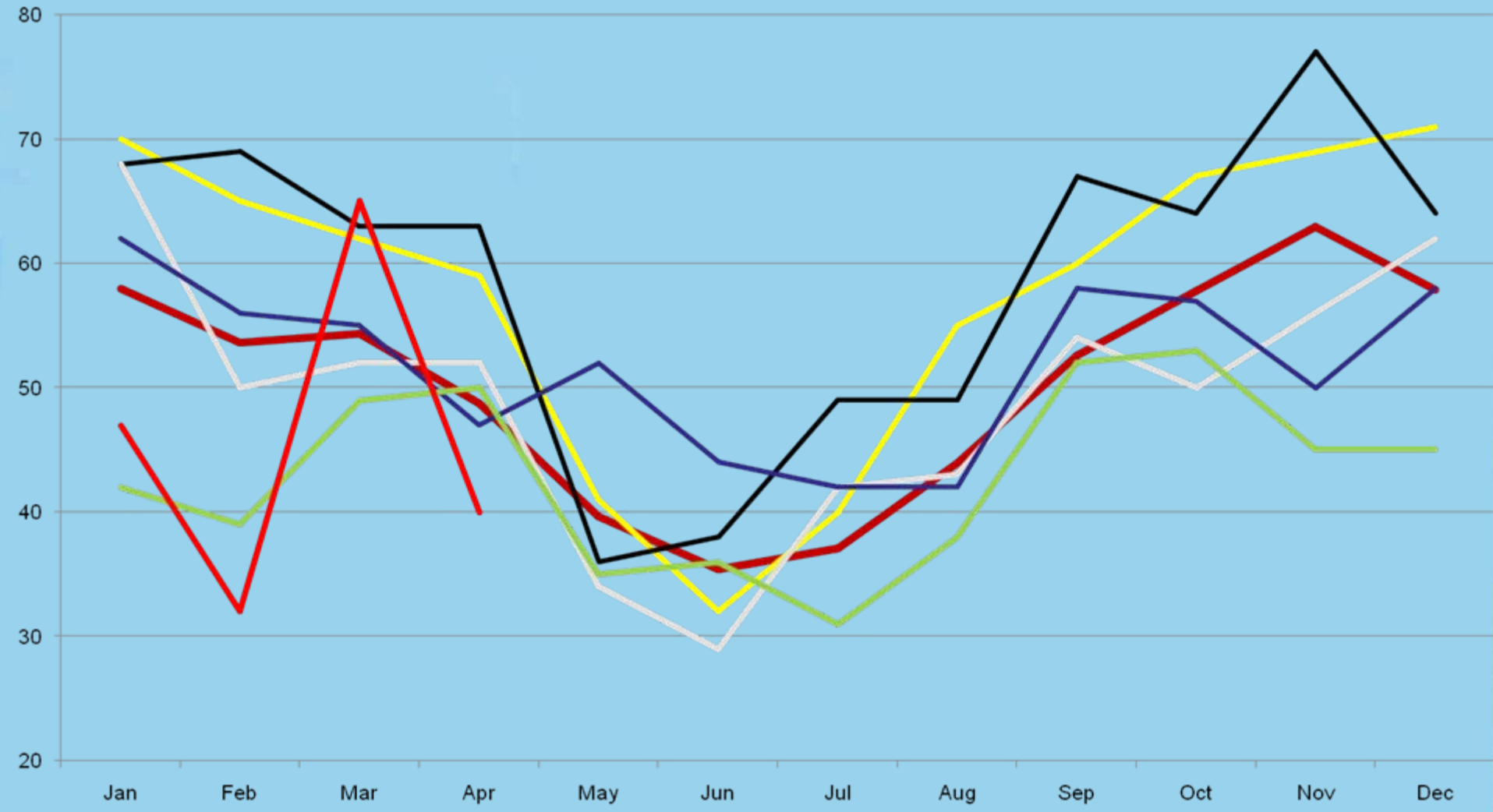
$140 - $250/mt DM

{ **Roughage**

$70 - $200/mt DM

Food Pyramid provided for the public domain by the USDA Center for Nutrition Policy and Promotion (CNPP) 2005. The image and text has not been

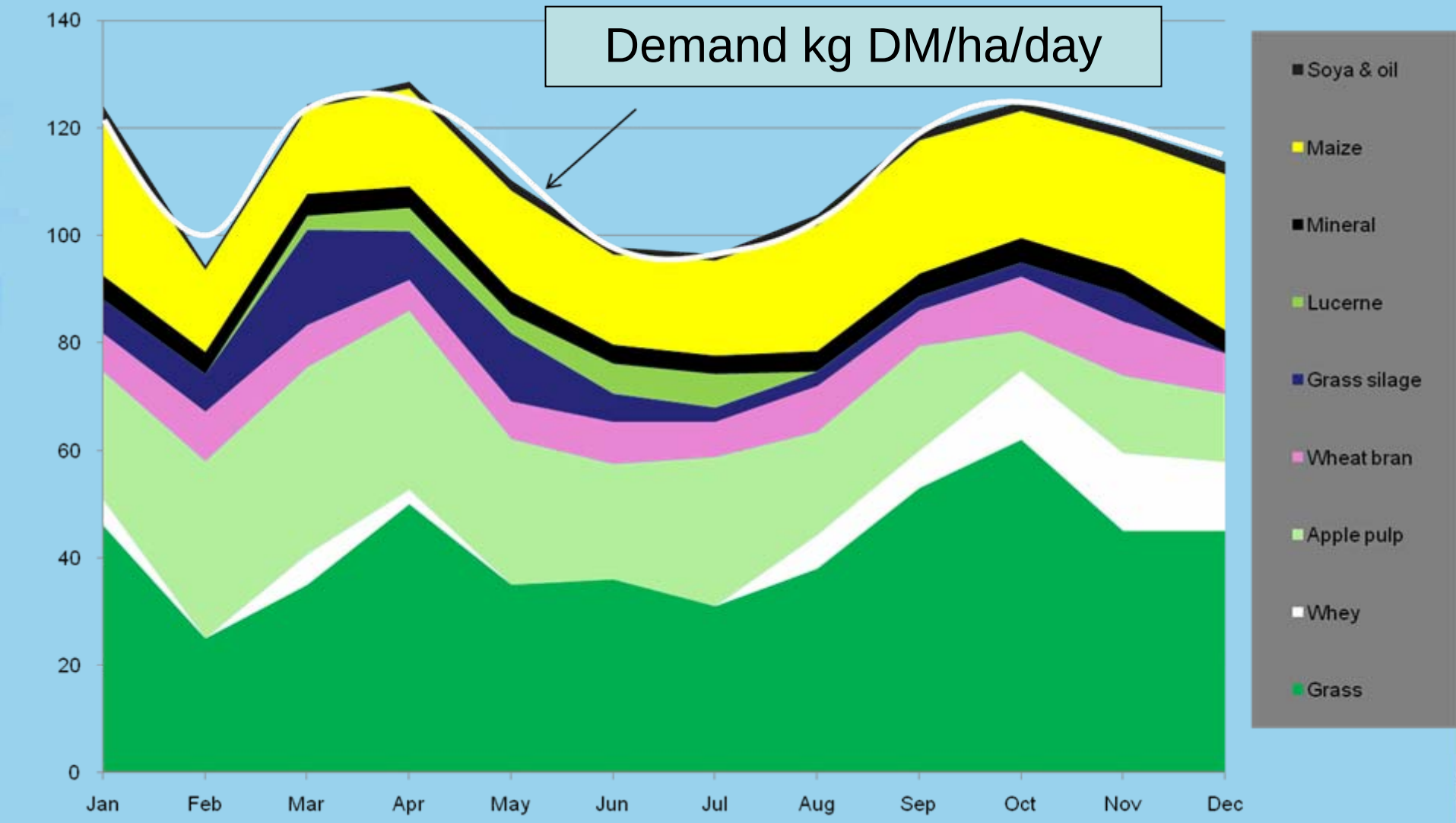
Pasture growth curves (kg DM/ha/day)



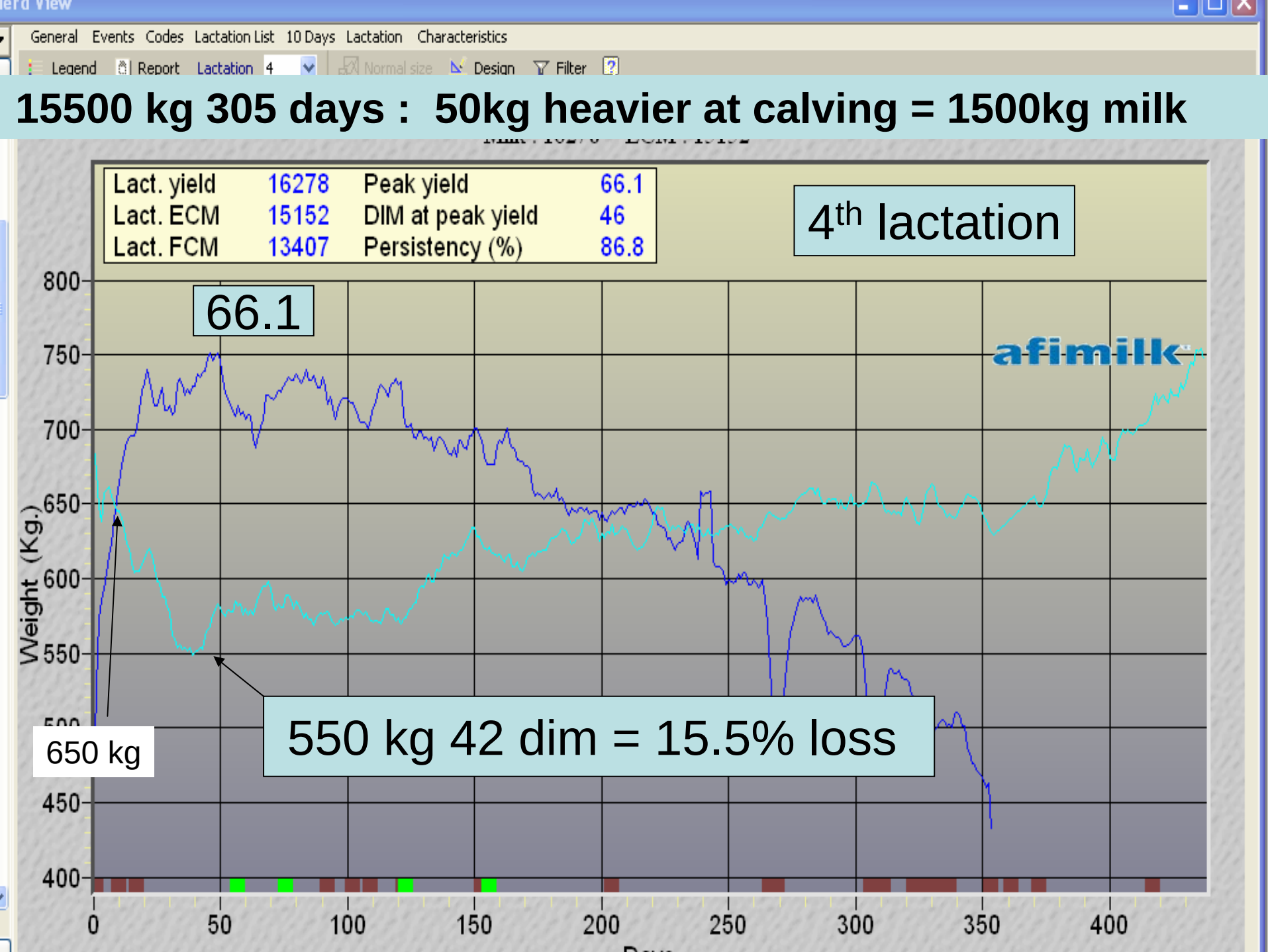

GPS Console
Feed reader

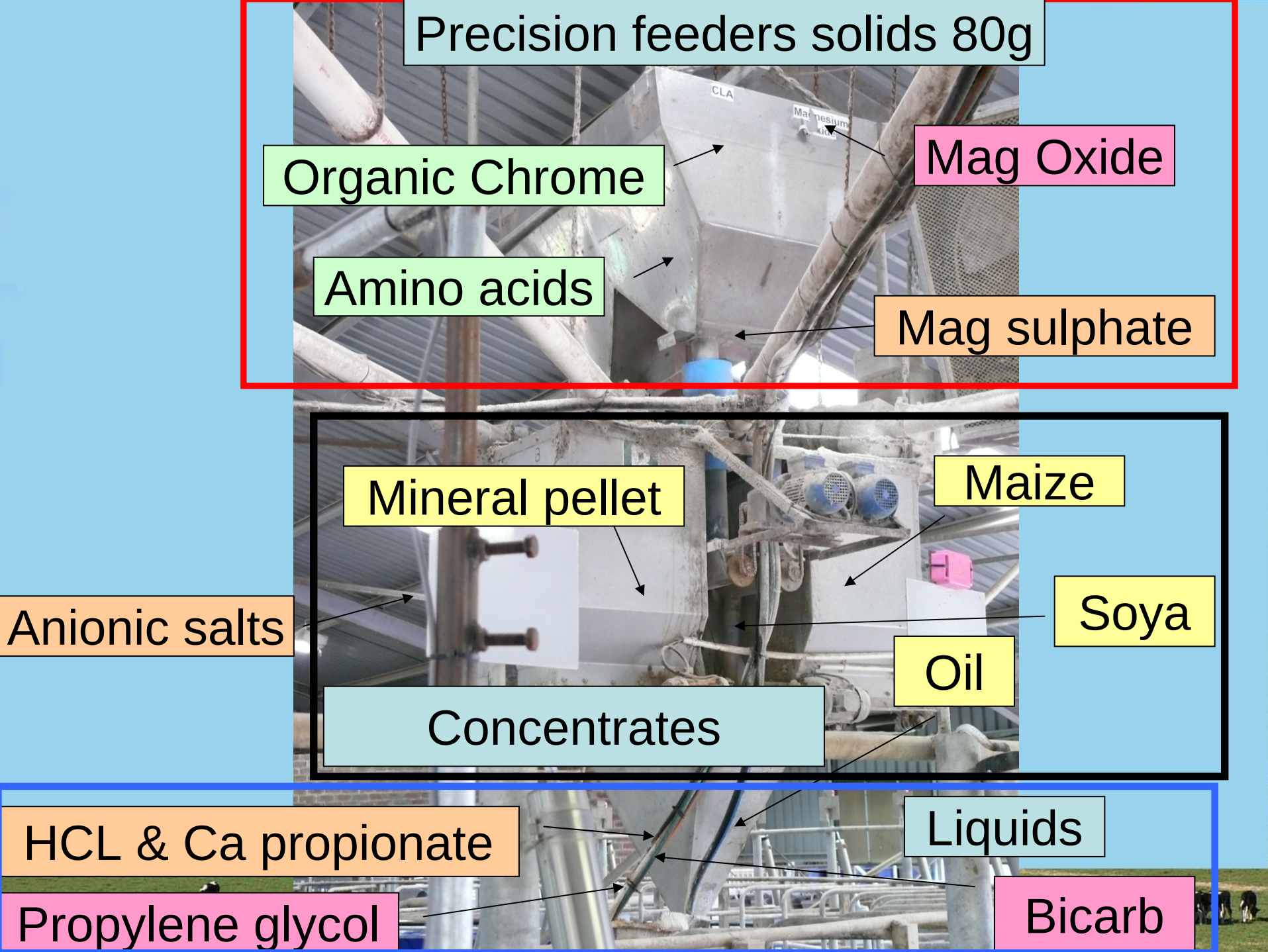

9:10 AM
106
111
82
83
70
71
81
72
80
73
79
74
78
77
112
113
110
Too close to fence
0 mm
Louis
--- kgDM
None
ESC
PAGE
MENU
ENT
+
−
F1
F2

Supply to meet demand Mar 2009 – Feb 2010



Effect of feeding concentrates individually to manage BCS and production


General Events Codes Lactation List 10 Days Lactation Characteristics
Legend Report Lactation 4 Normal size Design Filter
15500 kg 305 days : 50kg heavier at calving = 1500kg milk
Lact. yield 16278
Lact. ECM 15152
Lact. FCM 13407
Peak yield 66.1
DIM at peak yield 46
Persistency (%) 86.8
4th lactation
66.1
afimilk
Weight (Kg.)
800
750
700
650
600
550
450
400
650 kg
550 kg 42 dim = 15.5% loss
0
50
100
150
200
250
300
350
400


Precision feeders solids 80g
Organic Chrome
Mag Oxide
Amino acids
Mag sulphate
Mineral pellet
Maize
Anionic salts
Soya
Oil
Concentrates
HCL & Ca propionate
Liquids
Propylene glycol
Bicarb

Parameter ranges

Daily avg. yield	Avg. fat	Daily avg. FCM
9.4	5.12	11.0
41.2	4.14	42.1
--	--	--

Avg. fat
3.24
6.44
--

Lact. no.	DIM	Avg. weight	Weight in calf
2	132	334	335
1	341	711	578

index now
82
125
207
103

Calving, exp. date
04/05/2009
26/10/2009
--

Lact. no.
1
8
--

DIM
1
712

Gyn. status
Calving
Heat
Insemination
Not for Insemination
Pregnant

afimilk

afimilk

Index	Co			Weight	no.	avg. yield	Daily avg. FCM	% FCM from weight	Avg. fat	Alloc. (today)	bcs last before c	index now	current BW/ht inde	Days to calving	Not for insem. date
1	T47	20	203	557	4	23.7	26.4	4.7	4.78	4.7	3.50	100	107	132	..
2	T49	40	223	507	4	19.6	19.8	3.9	4.07	2.9	3		102	200	..
3	T79	40	45	498	4	28.3	30.9	6.2	4.60	9.0	3		93	..	..
4	U160	20	55	510	3	28.4	29.5	5.8	4.26	8.1	3.50	94	92	..	..
5	U178	40	54	487	3	27.4	28.5	5.9	4.27	7.8	3.00	98	97	..	..
6	U263	20	49	491	3	27.3	25.7	5.2	3.59	6.5	3.25	95	95	..	..
7	V24	40	355	473	2	23.3	23.9	5.0	4.16	4.7					
8	V109	20	205	460	2	23.3	24.9	5.4	4.44	5.9					
9	V187	40	199	453	2	23.6	26.8	5.9	4.90	5.9	3.50	99	99	..	27/01/2009
10	V195	20	179	481	2	19.7	22.6	4.7	4.97	4.7	3.25	97	93	196	..
Total	..	..	..	..	..	..	..	..	..	60.3	33.50	981	977	..	..

Size (wt & ht)

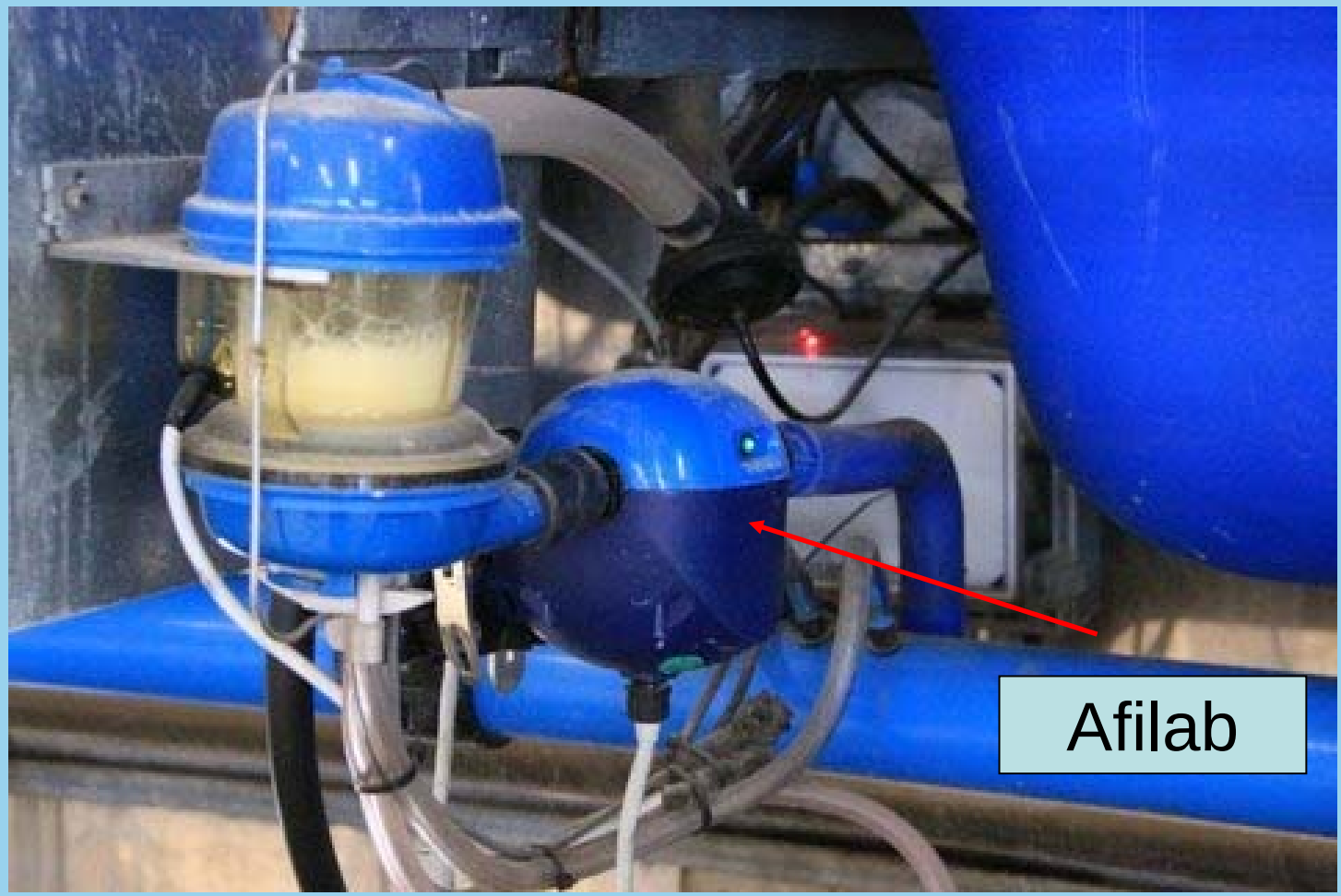
Milk

BF

Target BCS

Automatic feed allocation for

Afilab



Milk Component (Day) (03/02/2009 - 12/02/2009) (12/02/2009 09:27:58)

Save | Save As... | Design | Refresh

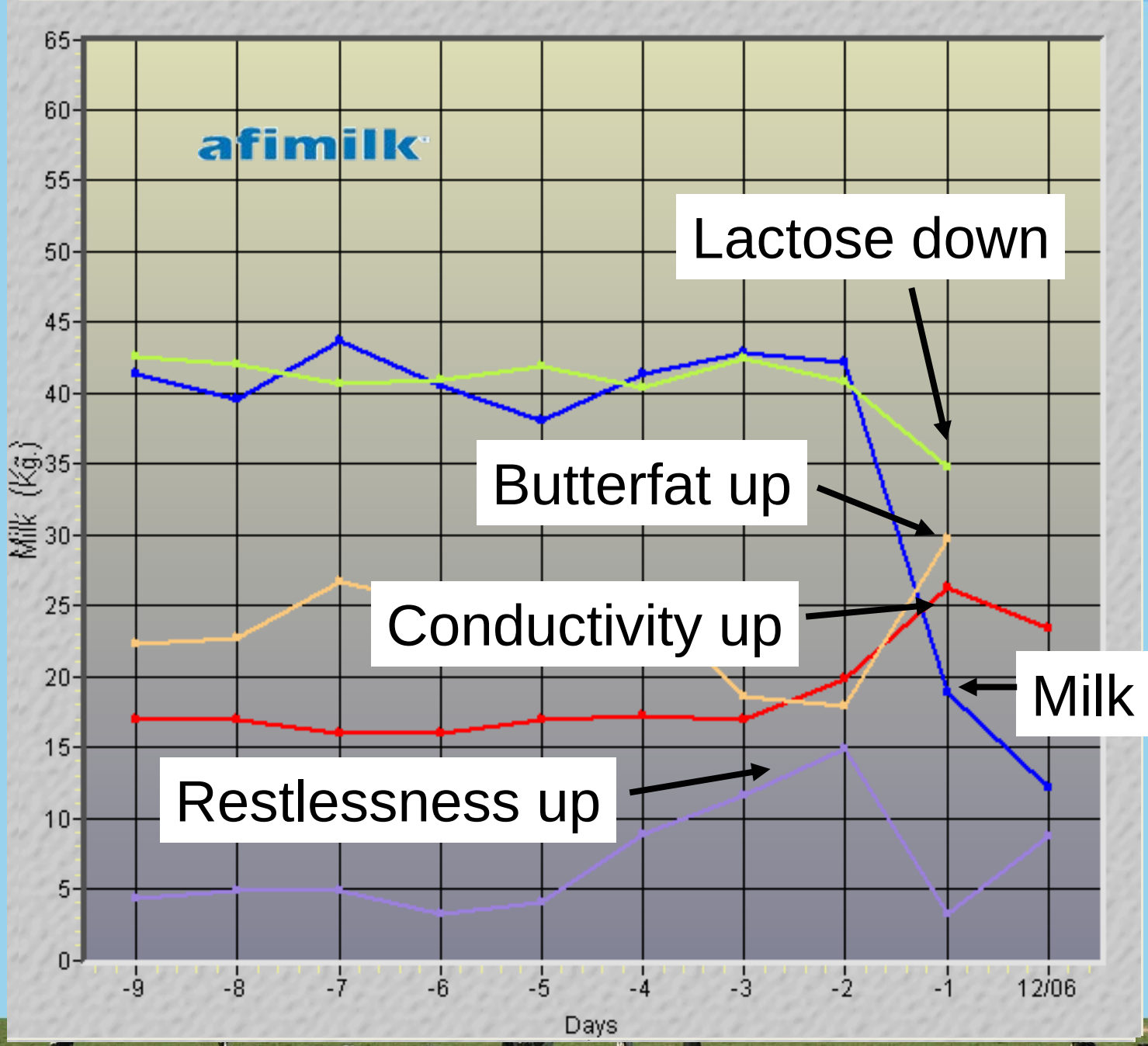
Index	Date	Total yield	Avg. yield per milk cow	Total milk cows	Total cows	Avg. yield per cow	Daily ECM	Daily FCM	Fat %	Protein %
1	03/02/2009	9750	19.7	495	636	15.3	58.0	19.8	4.39	3.39
2	04/02/2009	10177	20.6	495	636	16.0	62.2	21.1	4.27	3.34
3	05/02/2009	10210	20.5	499	637	16.0	62.0	21.1	4.31	3.36
4	06/02/2009	10161	20.3	501	637	16.0	61.6	20.8	4.33	3.45
5										
6										
7										
8										
9										
10										
Total										
Avg.										

afimilk

Bulk tank sample

Butterfat 4.34%; Protein 3.4% SCC 242

(Afi day report = 230 for that day)


afimilk
Lactose down
Butterfat up
Conductivity up
Milk down
Restlessness up
Milk (Kg.)
65
60
55
50
45
40
35
30
25
20
15
10
5
0
-9
-8
-7
-6
-5
-4
-3
-2
-1
12/06
Days

Sub acute acidosis

Index	Cow	Grp.	Lact. no.	DIM	Daily avg. yield	Avg. fat	Fat %	Avg. protein	Protein %	/\1 Avg. Fat/ Protein	Fat/ protein
	afimilk										
1	7003	20	1	36	29.2	3.32	2.44	3.34	3.11	1.00	0.79
2	R41	40	5	290	21.3	3.48	3.94	3.43	3.41	1.01	1.15
3	Q141	40	7	43	28.4	3.72	3.31	3.65	3.64	1.02	0.91
4	U240	40	3	186	19.9	4.05	3.84	3.89	3.93	1.04	0.98
5	6236	20	1	171	22.0	3.54	3.16	3.39	3.03	1.04	1.04
6	V293	40	2	47	30.6	4.06	3.03	3.76	3.70	1.08	0.82
7	R162	40	6	168	18.1	4.50	3.44	4.07	3.88	1.11	0.89
8	U3	40	3	39	22.2	4.03	3.09	3.58	3.58	1.13	0.86

Concentrates allocated as a percentage of body weight and the limitation is as a maximum percentage of BW

This severely limits acidosis and promotes rumen health

Results

- Fat corrected milk per cow **45**% higher than district
- Kg FCM per hectare is 45% higher
- Concentrates per kg FCM fed is **30%** less
- Nitrogen used is 30% less, no P or K
- Inter calving period 380 days – no bulls
- At calving average BCS = 3.45%


Thank you
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