



Maximising performance on a typical Southern Hemisphere pasture dairy farm

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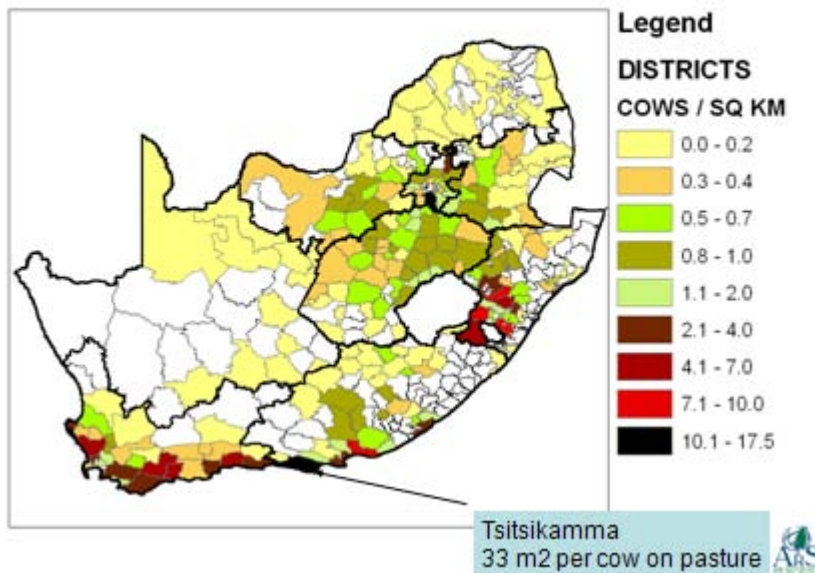
Abstract

Managing large herds successfully on pastures presents a myriad of ever mutating challenges. In this period of extreme climatic conditions (droughts and floods) constant monitoring of many variables is essential. In spite of supplementary irrigation, grass growth can vary by as much as 300% from one annual period to the next. To overcome the challenges, grass measurement (quantity & quality) is essential to correctly supplement forages. Concentrates are best fed in parlour according to individual cow requirements and genetic potential. Management systems which can measure body weight & height, milk yield, and milk constituents automatically at every milking are essential aids in determining the exact concentrates (eg maize, soya, minerals) each cow requires during the different stages of lactation. Rations are then automatically recalculated daily, based on a rolling average. Individual cow performance and response can then be automatically monitored and adjusted to achieve ideal body condition scores.

By adopting the above practices whole farm performance is maximised which is essential in a scenario of pasture land prices doubling every 4 to 5 years.

Keywords: Pasture, individual cow, supplementation, management systems.

South Africa cow concentration

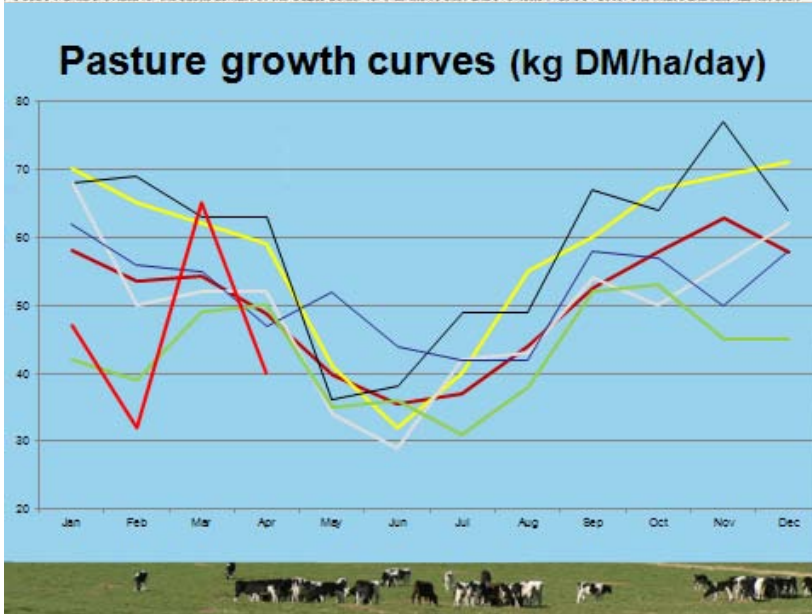
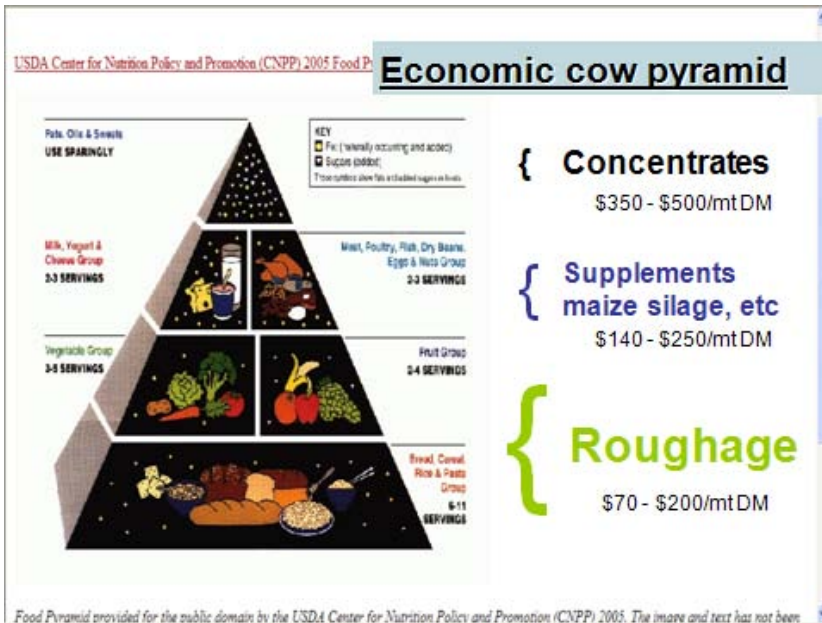


1.0 Laws of dairying

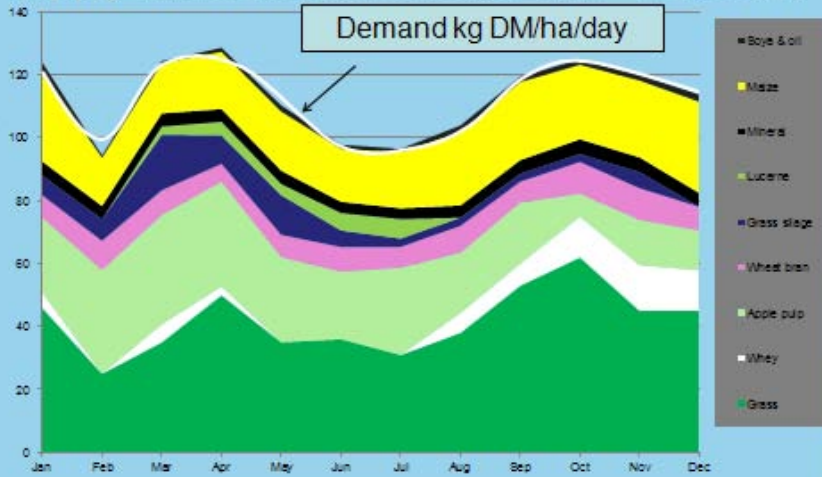
- Feed your cows properly and individually to manage milk condition and fertility.
- Body condition is king
- The dry period and transition is crucial
- Grow your heifers out to their genetic potential

1.1 Lessons learnt

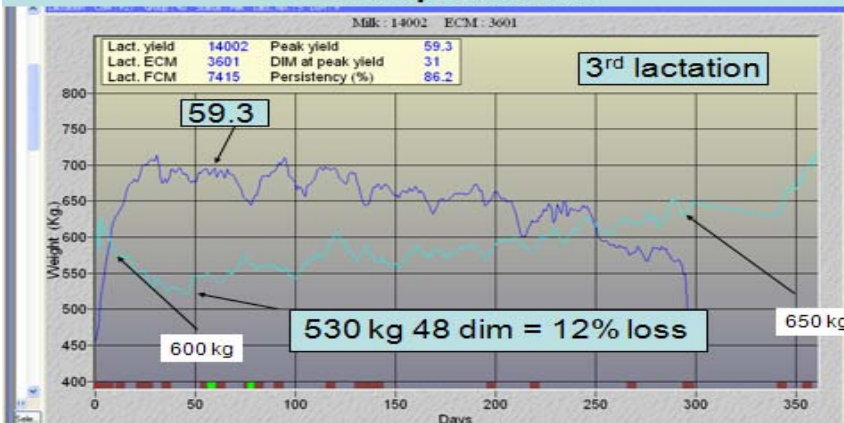
- Individual cow management is the best way to increase efficiencies and maximise sustainable profits.
- Management systems should collect and utilize data such as milk, butterfat, protein, lactose, SCC, body weight, height, activity, conductivity, SCC daily to be effective.
- Only with comprehensive data collected at every milking can we make informed decisions.
- Principles of feeding roughage and supplementing cows to optimise production and BCS



Supply to meet demand Mar 2009 – Feb 2010



Effect of feeding concentrates individually to manage BCS and production



Parameter ranges

Daily avg. yield	Avg. fat	Daily avg. FCM	Avg. fat	Lact. no.	DIM	Avg. weight	Weight in calf	Index now
9.4	5.12	11.0	3.24	2	132	334	335	82
41.2	4.14	42.1	6.44	1	341	711	578	125
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Calving exp. date	Lact. no.	DIM	Gyn. status
04/05/2009	1	1	Calving
26/10/2009	8	712	Heat
--	--	--	Insemination
--	--	--	Not for Insemination
--	--	--	Pregnant



Index	Co	Size (wt & ht)	Daily avg. yield	% FCM from weight	Avg. fat	Alloc. (today)	bcs last before c	index now	current BW/ht inde	Days to calving	Not for insemin. 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	3.25	100	102	200
3	T79	40 215 498	4 28.3	30.9	6.2	4.60	9.0	3.25	99	93	--
4	U160	20 51 510	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	3.25	99	99	--
8	V109	20 205 460	2 23.3	24.9	5.4	4.44	5.9	3.25	97	93	196
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	--

Automatic feed allocation for



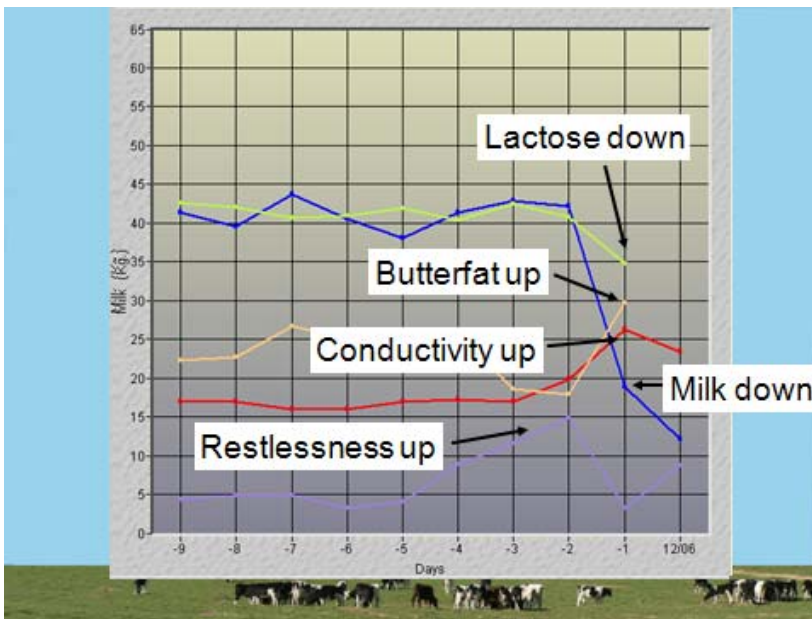
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Milk Component (Day) (03/02/2009 - 12/02/2009) (12/02/2009 09:27:58)

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	10181	20.3	501	637	16.0	61.8	20.8	4.33	3.45
5										
6										
7										
8										
9										
10										
Total										
Avg										

Bulk tank sample
 Butterfat 4.34%; Protein 3.4% SCC 242
 (Afi day report = 230 for that day)





Sub acute acidosis

Index	Cow	Grp.	Lact. no.	DIM	Daily avg. yield	Avg. fat	Fat %	Avg. protein	Protein %	/ 1 Avg. Fat/ Protein	Fat/ protein
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

1.2 Results

- Our average fat corrected milk yield is 45% higher than our district.
- Kilograms FCM per hectare is 45% higher.
- Concentrates fed per kg FCM is 30% less
- Nitrogen used is 30% less
- Intercalving period is 380 days – only AI, no bulls.
- At calving average Body condition score is 3.45