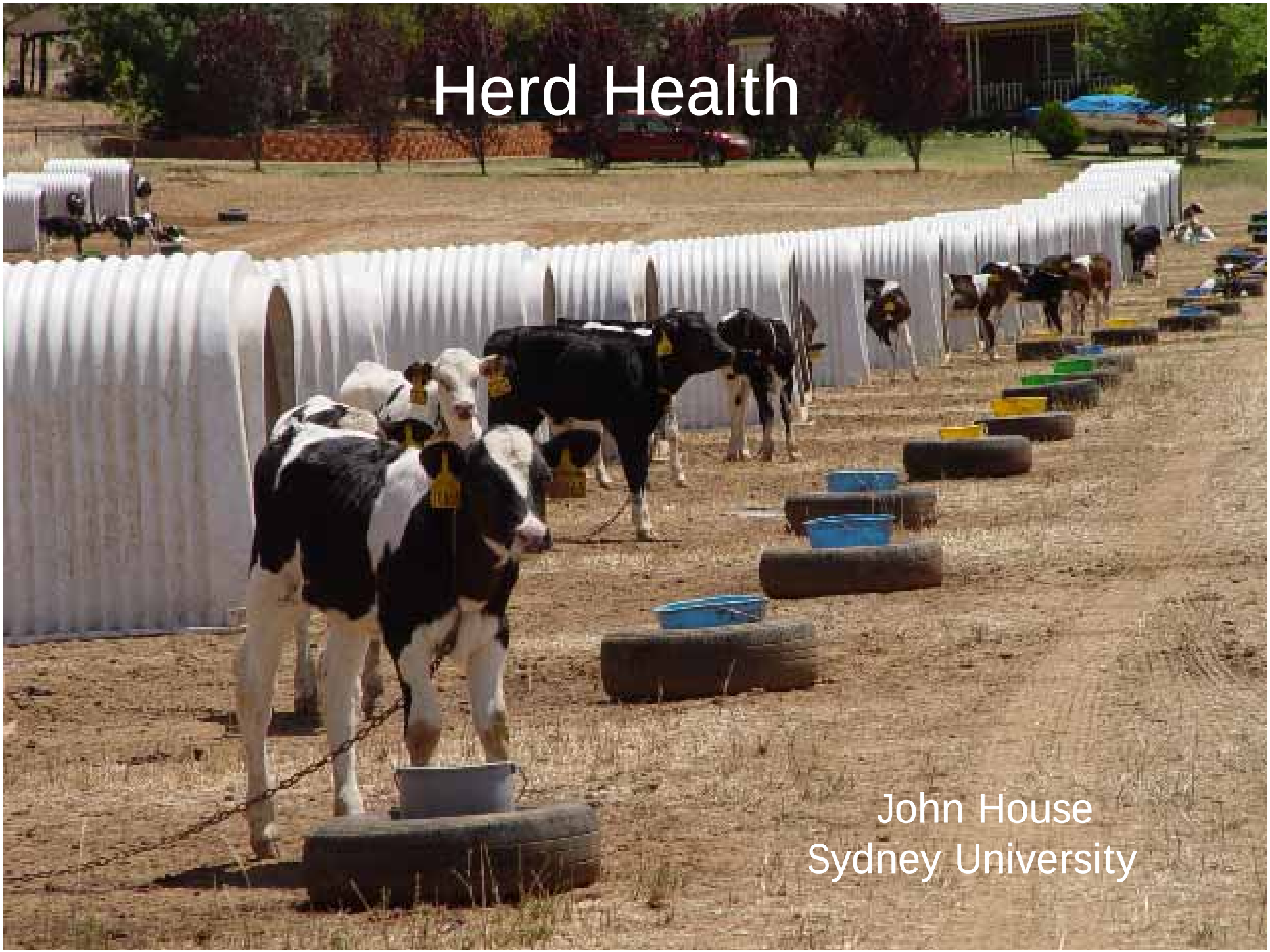
Herd Health



John House
Sydney University

The Australian Dairy Industry

Efficiency of Production is Key to Long Term Sustainability

- Planning
- Defining objectives
- Monitoring outcomes
- Identifying bottlenecks
- Implementing changes
- Assessing responses

Applied Sciences in Dairy Farming

- Crop Science
  - Agronomy
  - Cropping
- Animal Science
  - Nutrition
  - Health
  - Reproduction
- Environmental Science
  - Water
  - Effluent

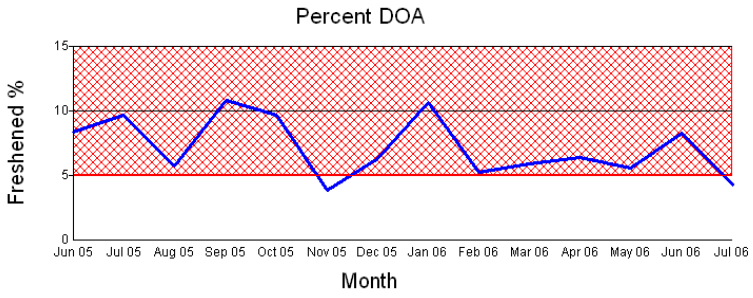
Determinants of Cow Performance

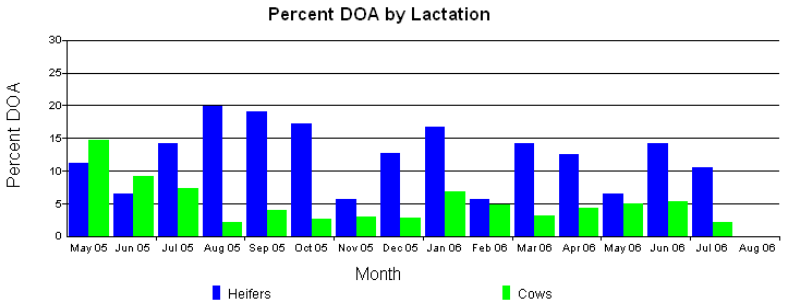
- Nutrition
  - Feeding the right ration at the right time
- Comfort
  - Minimizing environmental stress
  - Keeping cows clean and dry
- Reproduction
  - Position the cow to achieve her potential

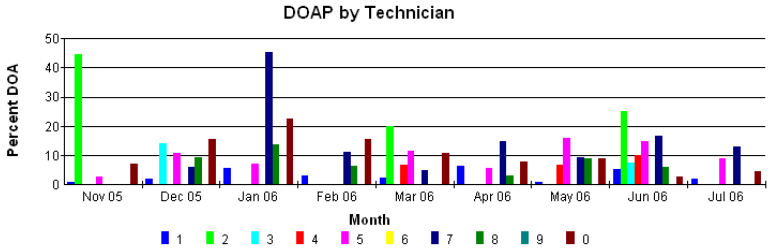
The Life Cycle

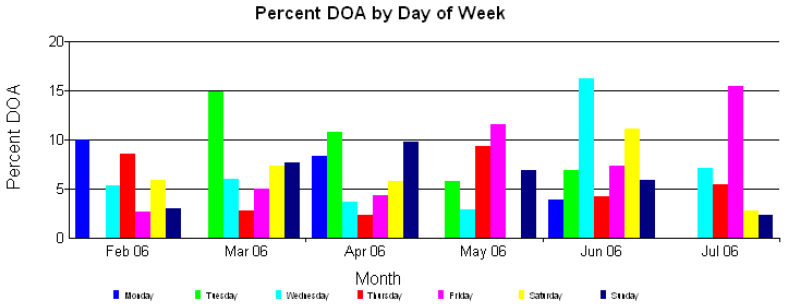
- Heifer Replacements
  - Sex distribution of calves
  - Perinatal mortality
  - Pre-weaning mortality
  - Growth
  - Reproductive performance

Perinatal mortality

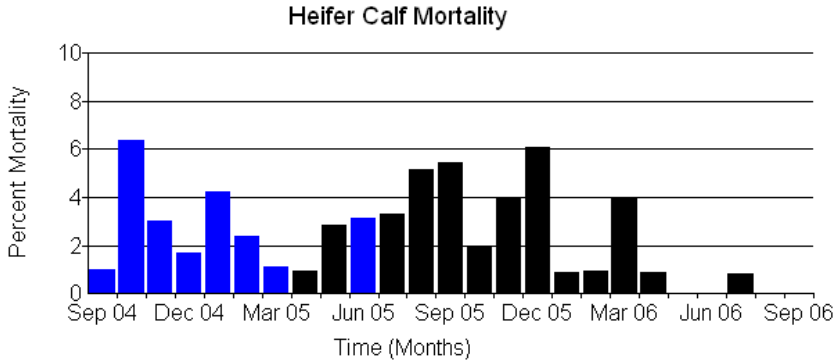


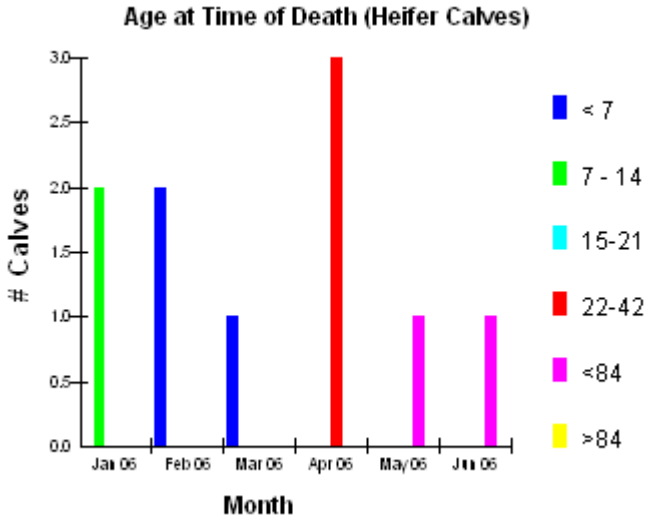




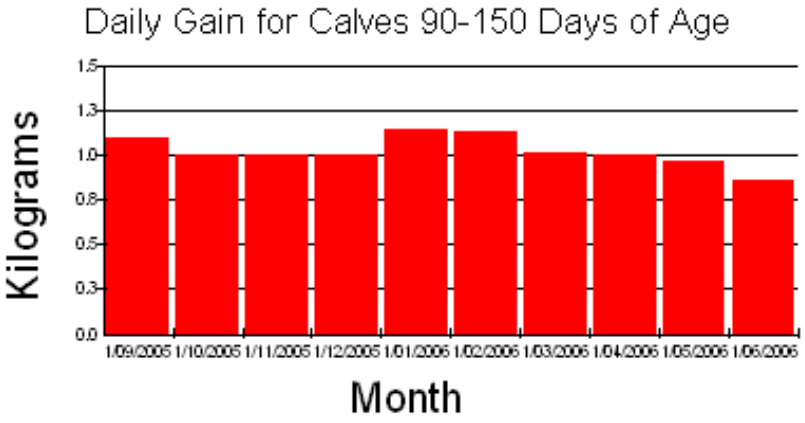


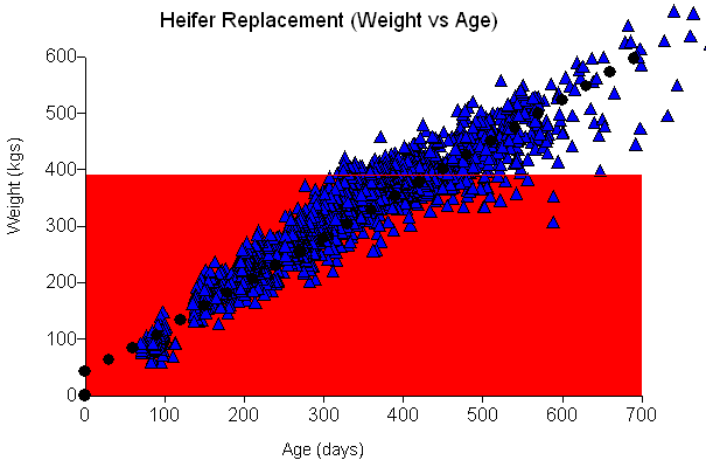
Pre Weaning Mortality

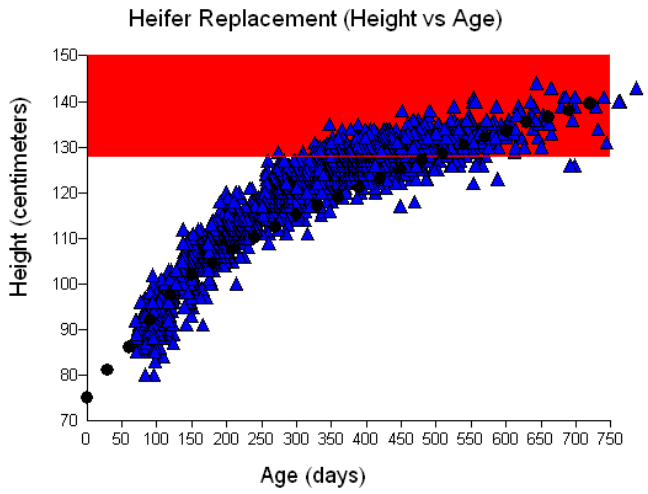




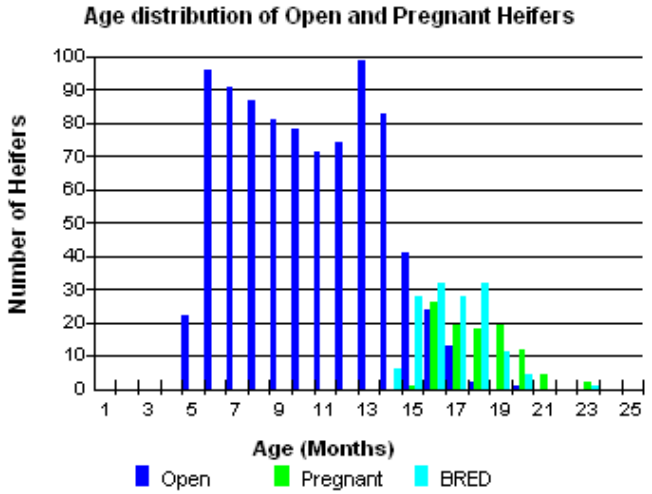
Growth

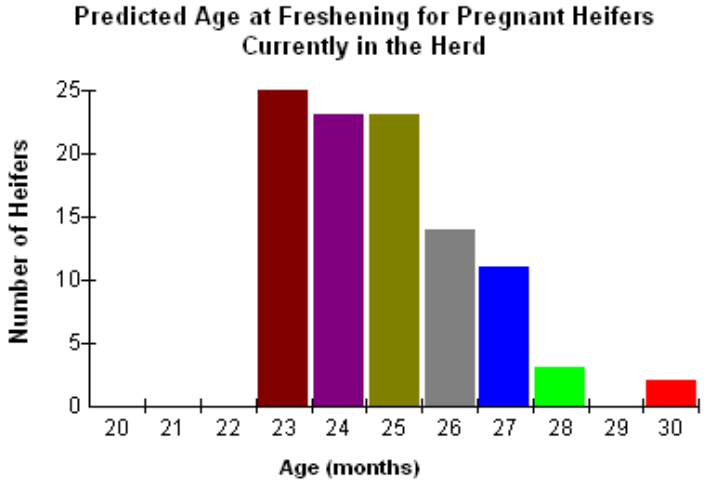

Daily Gain for Calves 90-150 Days of Age
Kilograms
1.5
1.3
1.0
0.8
0.5
0.3
0.0
1/09/2005
1/10/2005
1/11/2005
1/12/2005
1/01/2006
1/02/2006
1/03/2006
1/04/2006
1/05/2006
1/06/2006
Month

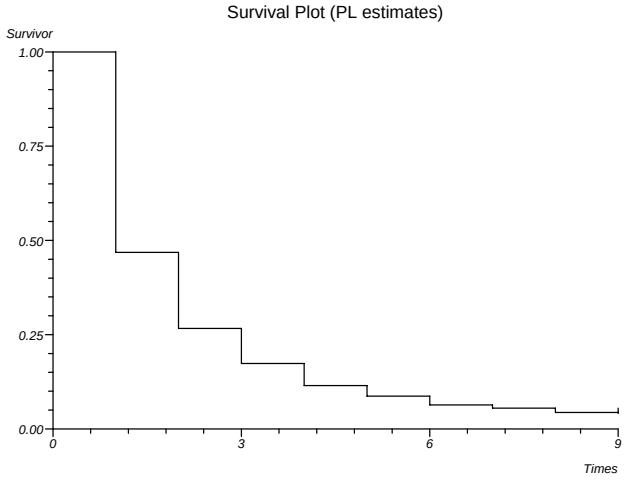

Heifer Replacement (Weight vs Age)
Weight (kgs)
600
500
400
300
200
100
0
0
100
200
300
400
500
600
700
Age (days)

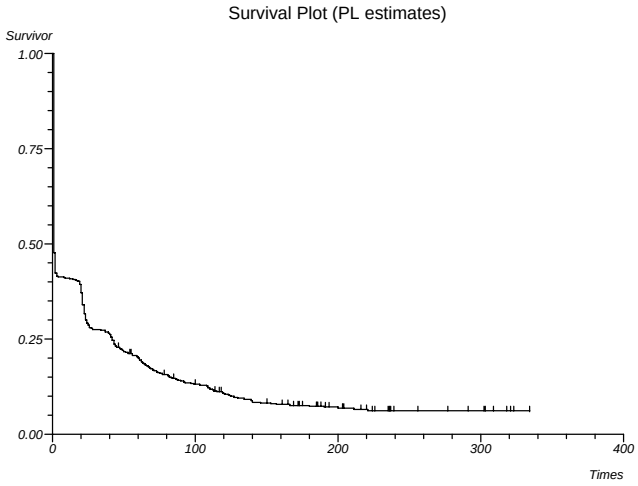

Heifer Replacement (Height vs Age)
Height (centimeters)
150
140
130
120
110
100
90
80
70
0
50
100
150
200
250
300
350
400
450
500
550
600
650
700
750
Age (days)

Heifer Reproductive Performance









Adult Cow Monitoring

- Nutrition
- Reproduction
- Health
- Production

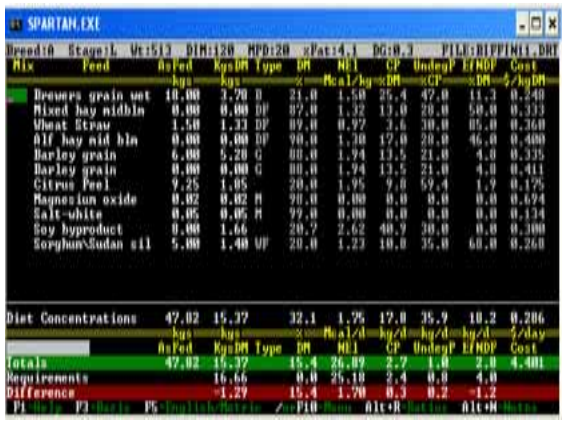
Nutrition

- Forages
  - Grown on farm
- Concentrates
  - Contracts with growers
- Commodities
  - Feed merchants

Nutrition

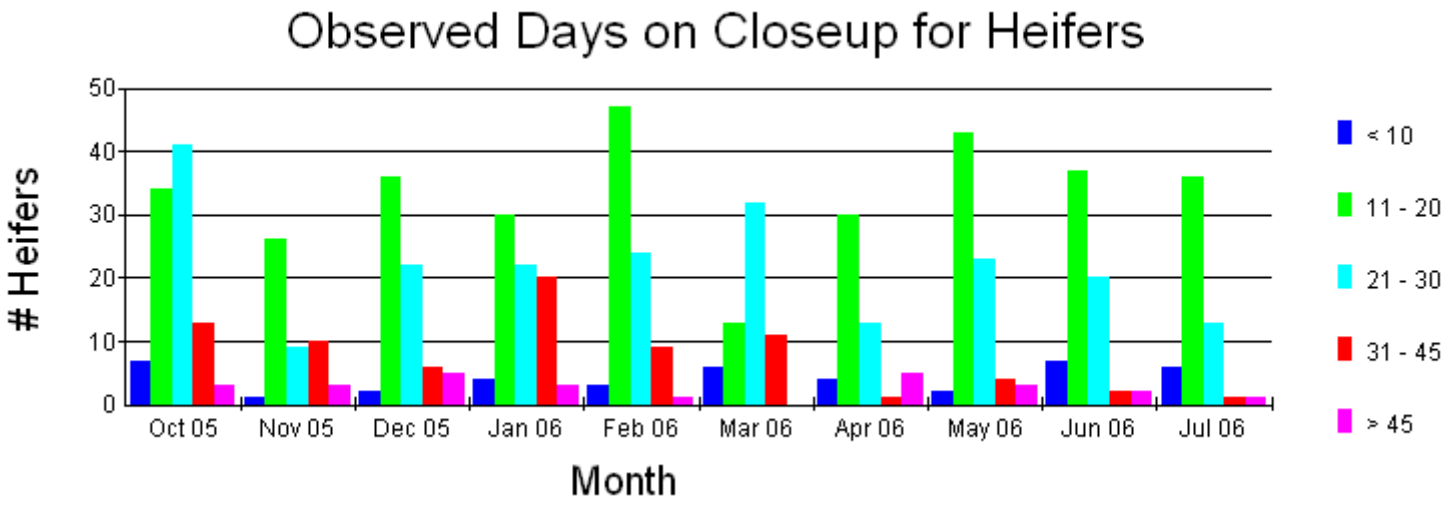
- Ration formulation
  - Professional nutritionist
  - Least cost rations
  - Cows grouped according to production
  - Rations formulated to meet cow requirements

Nutrition



- Milk
  - Production
  - Components
- Manure
- Cow health
- BUN
- NEFA

Nutrition


Observed Days on Closeup for Heifers
Heifers
50
40
30
20
10
0
Oct 05
Nov 05
Dec 05
Jan 06
Feb 06
Mar 06
Apr 06
May 06
Jun 06
Jul 06
Month
< 10
11 - 20
21 - 30
31 - 45
> 45

Reproduction

- Focus on transition cow management
- Utilize computerized records
- Utilize technology
- Proactive interventions
- Monitor outcomes

Reproduction

Dairy Comp 305 : Cow and Heifer File

File Data DivHerd OldTest bST EvtInv Repro Prod MlkQlty Misc Help

Command ?

Reports

Lists

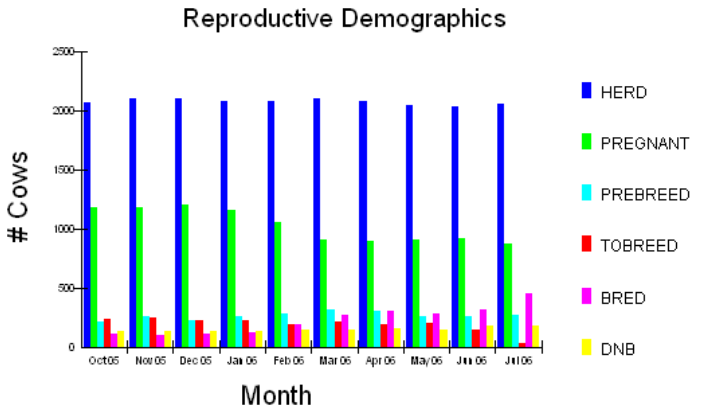
CowCards

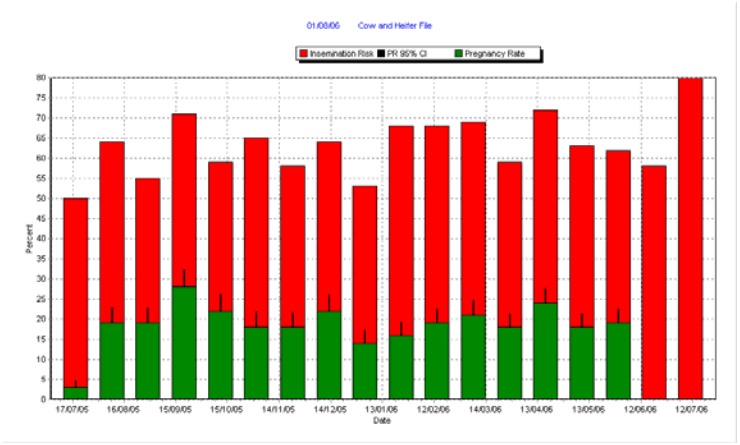
Graphs

Summaries

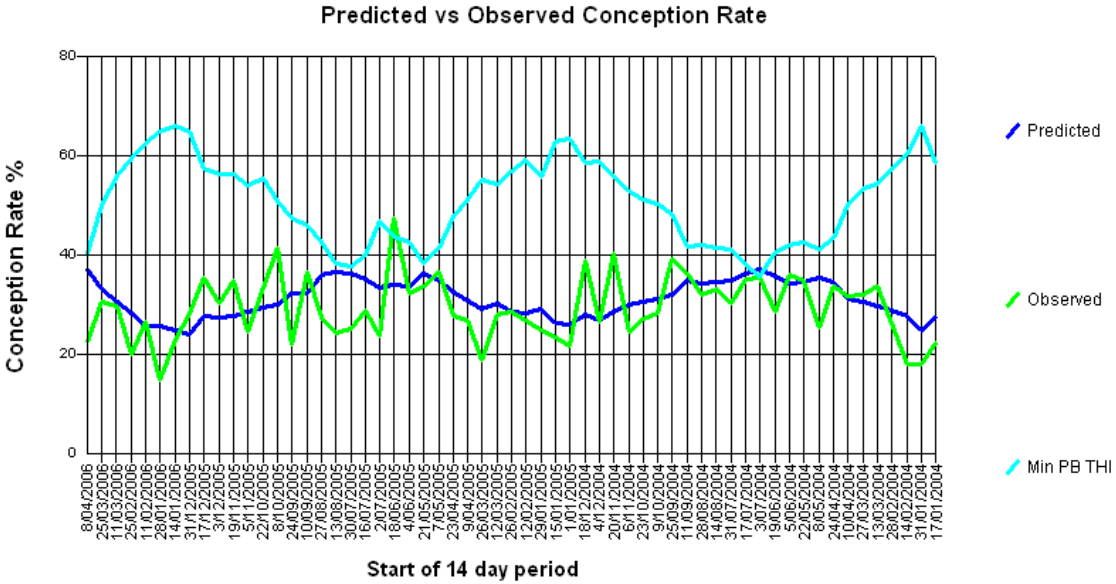
MONITOR

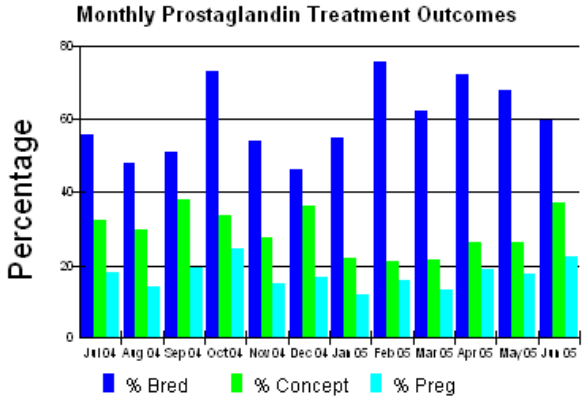
#	Parameter	2803	1104	2504	0905	2305	0606	2006	0407	1807	0108	Goal
1	COW REPRODUCTN	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	----
2	% Preg/Herd	47	46	46	47	47	48	48	48	48	48	40
3	# Preg@VetCheck	66	66	91	85	86	95	89	77	100	72	0
4	% Preg@VetCheck	73	55	65	76	70	71	63	71	71	64	0
5	# Aborts/Month	6	9	6	12	9	5	2	5	9	7	0
6	% Open-DIM>150	17	17	17	16	17	16	16	16	16	16	22
7	Avg DDRY/Herd	59	59	60	60	60	60	60	60	60	60	0
8	Avg DDRY/Month	70	65	68	56	58	59	54	56	68	66	0
9	# DDRY<45	19	13	27	23	10	15	24	16	7	13	0
10	# DDRY>75	15	15	14	7	7	9	11	12	7	17	0
11	Avg DIM/MlkHerd	174	173	173	170	167	167	168	166	167	167	0
12	Avg DIMFB/Herd	56	56	56	56	55	55	55	54	54	54	0
13	Avg DIMFB/Month	49	52	50	52	54	54	51	52	60	62	82
14	Avg DOPN/Herd	121	119	118	118	117	118	117	118	118	116	0
15	Avg DOPN/Month	124	119	109	112	108	125	106	127	118	104	140
16	# DIM>70 HDAT=0	9	13	17	22	15	8	13	27	24	26	0
17	# DIM>99 TBRD=0	2	3	3	5	4	4	4	4	4	3	0
18	% Hot DIM=60-84	89	89	90	84	88	89	78	73	73	78	85

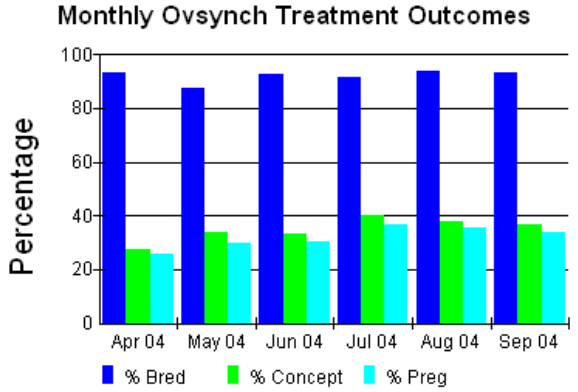




Reproduction



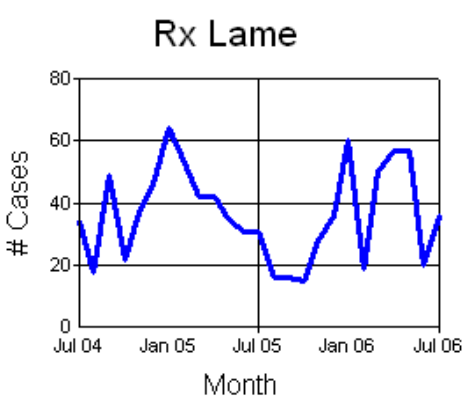


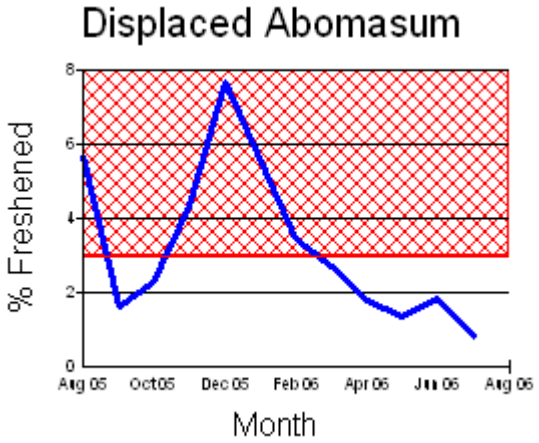


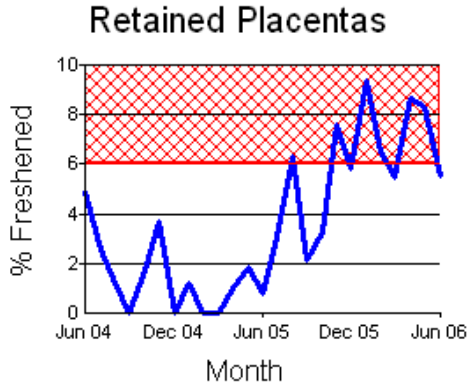
Cow Comfort

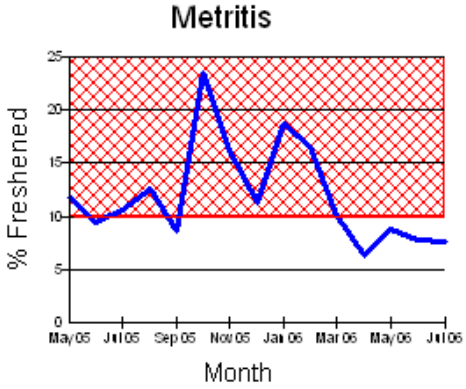
- Optimise production
  - Promote dry matter intake
  - Promote resting
  - Minimise microbial challenge to the teat end
  - Facilitate expression of oestrous
- Minimize disease
  - Mastitis
  - Lameness

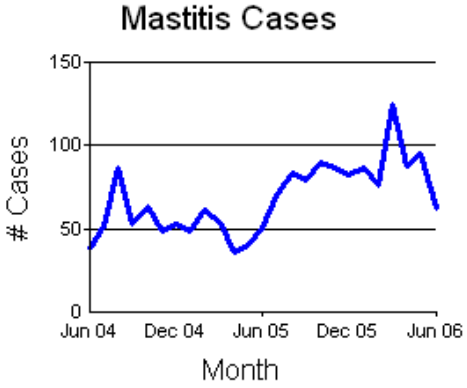
Health Outcomes

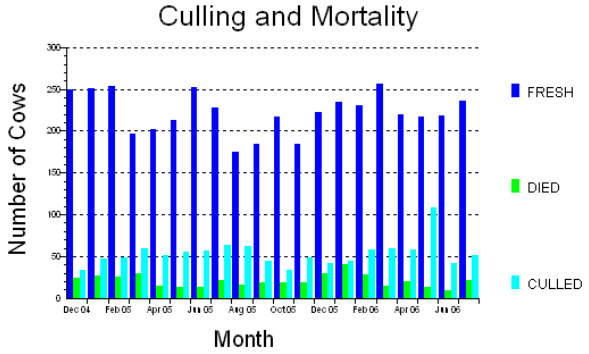




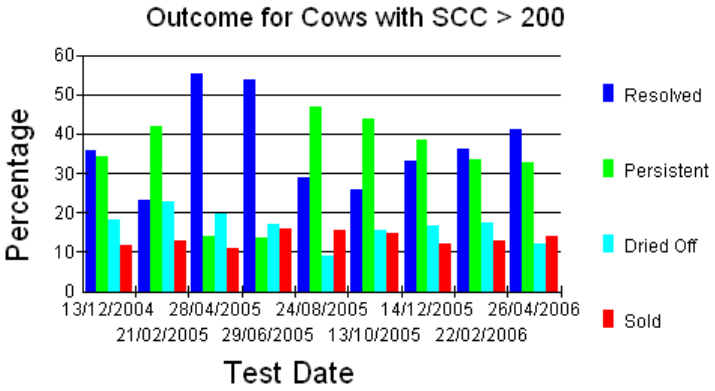


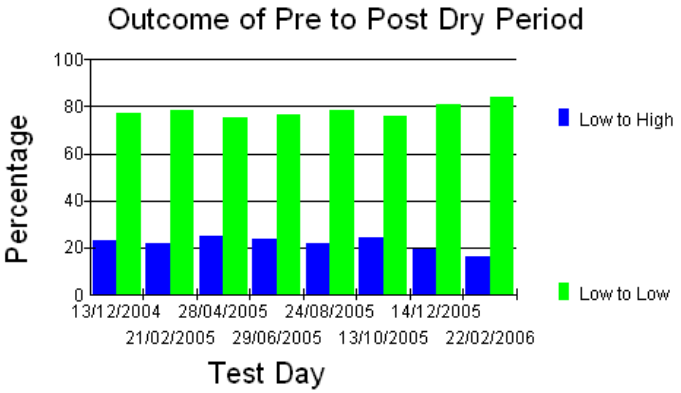


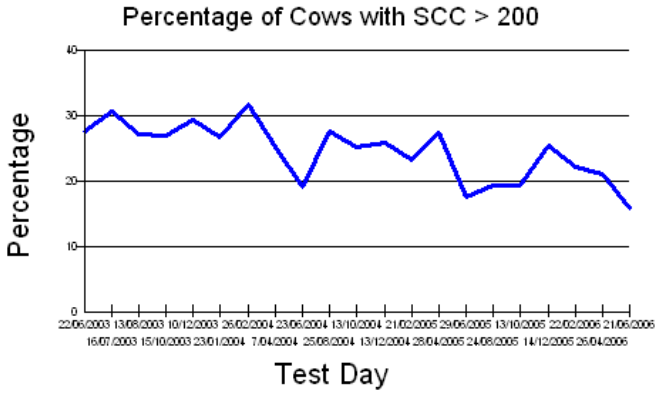


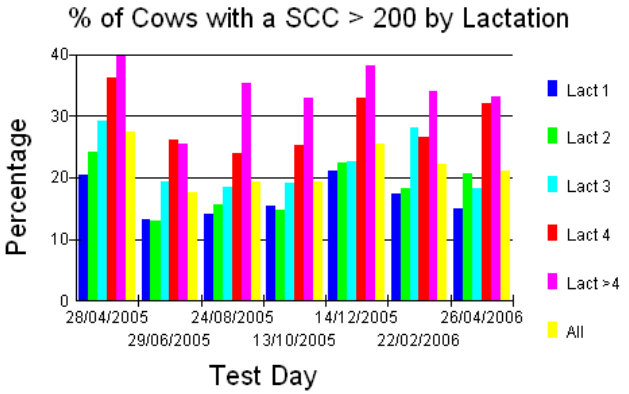


Health


Outcome for Cows with SCC > 200
Percentage
60
50
40
30
20
10
0
13/12/2004
28/04/2005
24/08/2005
14/12/2005
26/04/2006
21/02/2005
29/06/2005
13/10/2005
22/02/2006
Test Date
Resolved
Persistent
Dried Off
Sold


Outcome of Pre to Post Dry Period
Percentage
100
80
60
40
20
0
13/12/2004
28/04/2005
24/08/2005
14/12/2005
21/02/2005
29/06/2005
13/10/2005
22/02/2006
Test Day
Low to High
Low to Low

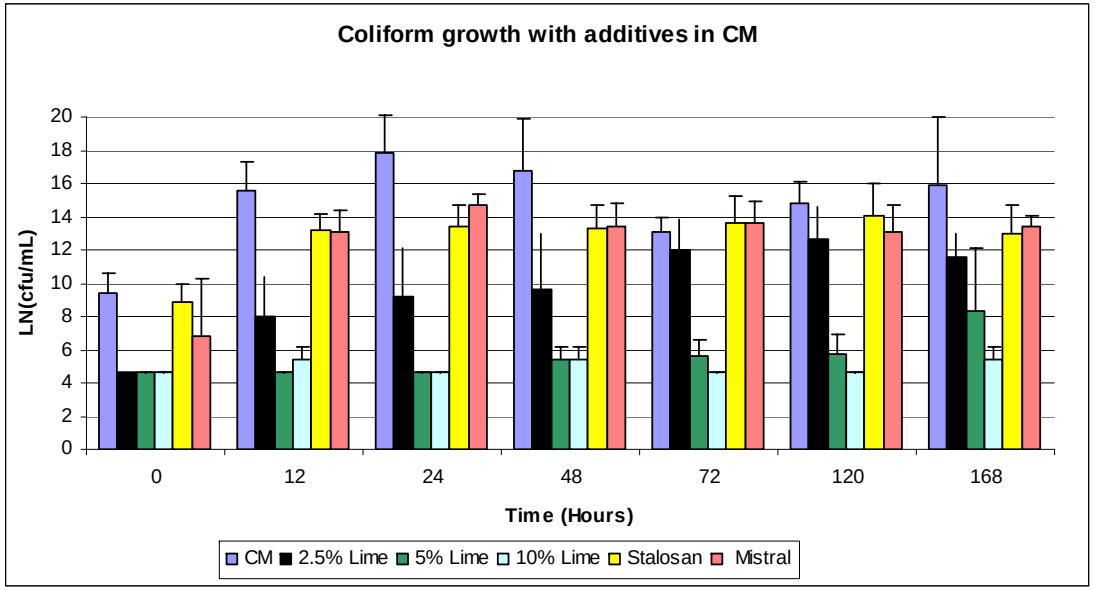

Percentage of Cows with SCC > 200
Percentage
40
30
20
10
0
Test Day


% of Cows with a SCC > 200 by Lactation
Percentage
40
30
20
10
0
28/04/2005
24/08/2005
14/12/2005
26/04/2006
29/06/2005
13/10/2005
22/02/2006
Test Day
Lact 1
Lact 2
Lact 3
Lact 4
Lact >4
All

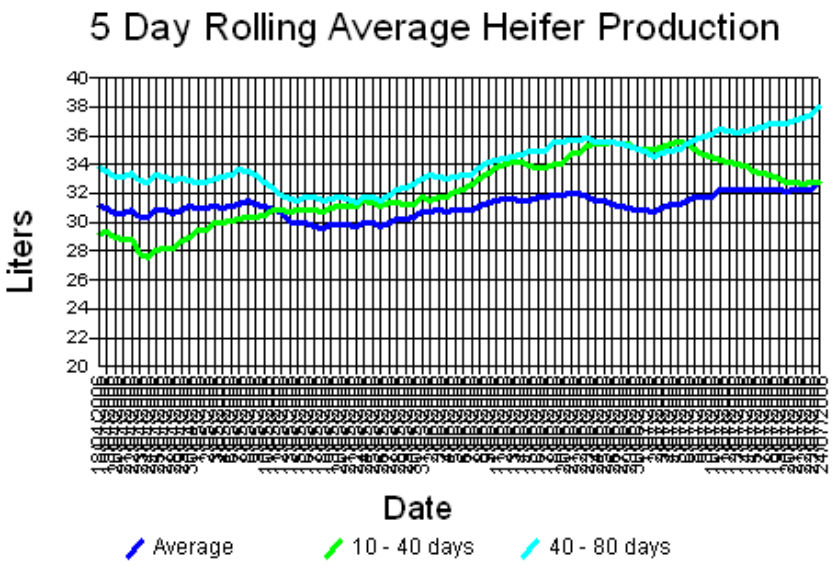
Health

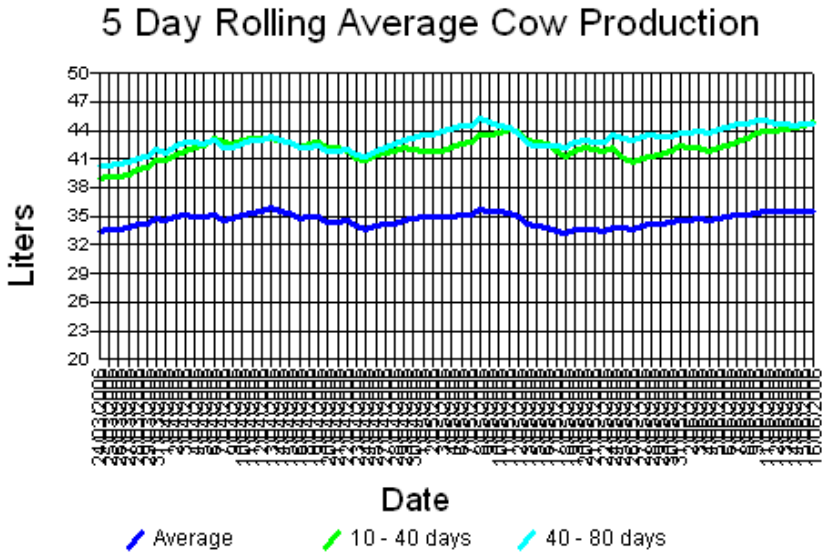
Milk culture results

Bacterial Isolate	Number of samples	Percentage
Streptococcus sp.	216	32.0
Coliform	166	24.6
Staphylococcus sp.	89	13.2
2 isolates	52	7.7
Minor pathogens	35	5.2
No growth	118	17.5
Total	676	100.0

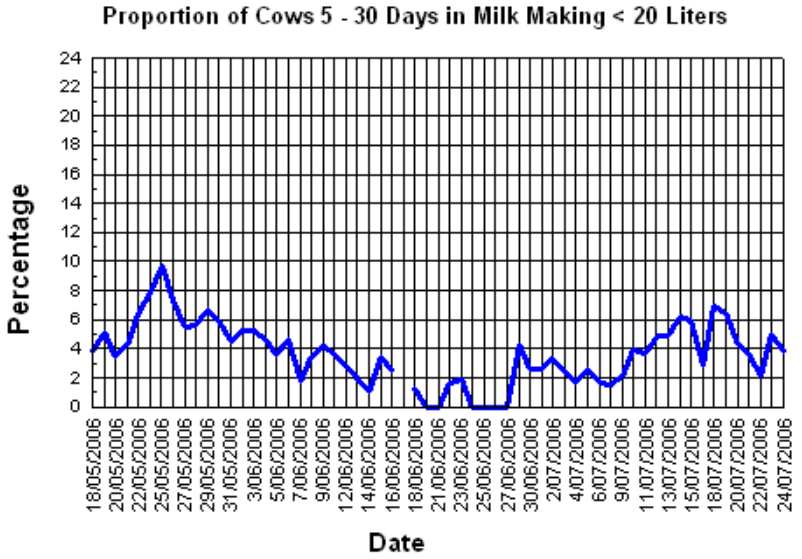


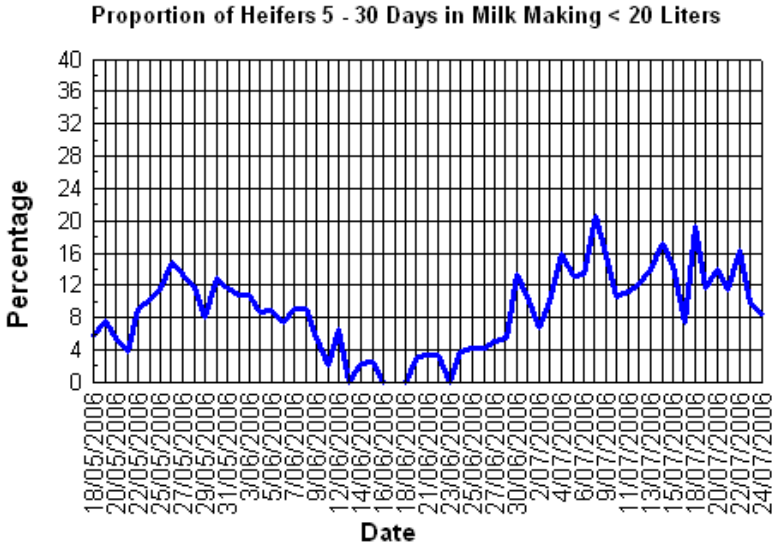
Production


5 Day Rolling Average Heifer Production
Liters
40
38
36
34
32
30
28
26
24
22
20
Date
Average
10 - 40 days
40 - 80 days


5 Day Rolling Average Cow Production
Liters
50
47
44
41
38
35
32
29
26
23
20
Date
Average
10 - 40 days
40 - 80 days

Production


Proportion of Cows 5 - 30 Days in Milk Making < 20 Liters
Percentage
Date


Proportion of Heifers 5 - 30 Days in Milk Making < 20 Liters
Percentage
Date

Summary

- Determinants of Production
  - Cow Comfort
  - Nutrition
  - Reproduction
- High production is achieved when systems are designed and managed to meet the needs of the cow.
- Implement existing knowledge and technology
  - Plan
  - Set goals
  - Monitor outcomes
  - Adjust management according to outcomes