



**Putting transition cow
management into practice**
Farmer workshop workbook

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Workshop program

Session 1: Welcome and introduction

The industry's goal

Aims of today's workshop

Introductions

Current transition cow management practices on Australian farms

Individual activity: Cow health problems

Session 2: Aims and benefits of transition cow management (TCM)

The transition period

Challenges to establishing a successful lactation

Benefits of an integrated approach to transition nutrition

Components of an integrated transition diet

Case study farm: Trevor and Yvonne's 2010 transition diet

Session 3: Managing milk fever risk

Different approaches to transition feeding

Milk fever – a gateway disease

Milk fever risk factors

Case study farm: Trevor and Yvonne's 2011 transition diet

Common transition feeding approaches

Session 4: Making it work on farm

Monitoring your TCM program's performance

Setting up a good transition program

Group activity: Things to consider

Checklist

Monitoring TCM program performance

(Case study farm: Trevor and Yvonne 2011)

TCM Plan-Do+Monitor-Review process

Session 5: Action Plan

Summary and close

Individual activity: TCM action plan for your own farm

Key points from today's workshop

Where to from here

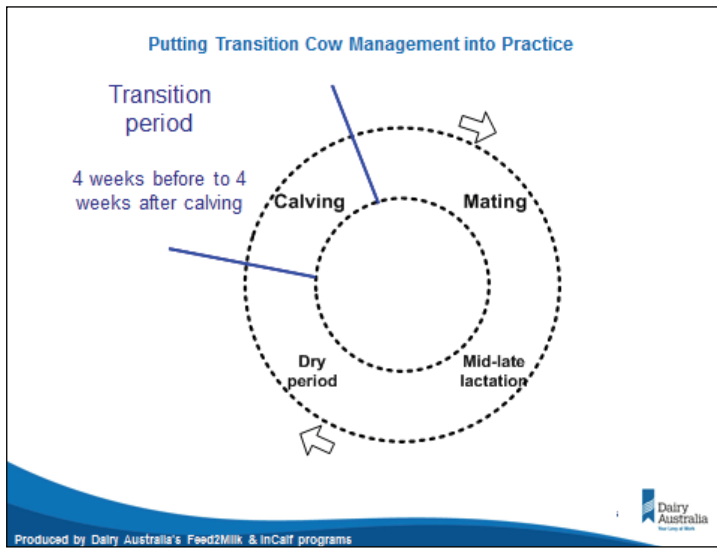
Feedback

Table 2: Achievable targets for cow health problems (expressed as percentage of cases of calving cows within 14 days of calving).

Health problem	Target	Seek help if
Milk fever	1% (old cows >8yrs: 2%)	>3%
Clinical ketosis	<1%	>2%
Abomasal displacements (left or right)	<1%	>2%
Clinical mastitis	<5 cases / 100 cows / first 30 days	>5 cases / 100 cows / first 30 days
Lameness (Sprecher locomotion scale 1-5)	<2% with > Score 2	>4% with > Score 2
Hypomagnesaemia (Grass Tetany)	0%	1 case
Retained placenta >24 hrs after calving	<4%	>6%
Vaginal discharge after 14 days	<3%	>10%
Calvings requiring assistance	<2%	>3%
Clinical acidosis	0%	1%

** Based on the following data sets: Morton, Curtis, Beckett, Moss, Stevenson.*

Session 2: Aims and benefits of transition cow management (TCM)



Putting Transition Cow Management Programs into Practice

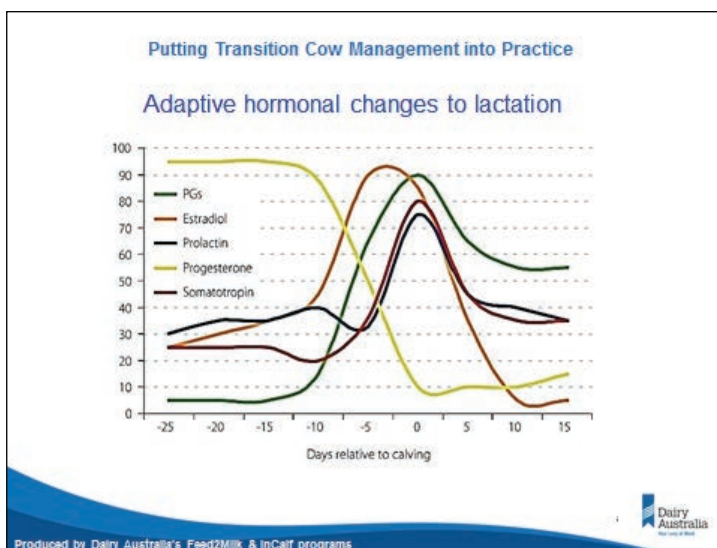
Case study farm:

Introduction to Trevor and Yvonne

Assess which diseases or health problems are linked to the transition period – workbook exercise.

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Your Way of Work



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Challenges to establishing a successful lactation

1. Rumen adaptation
2. Reduced dry matter intake
3. Higher demands for calcium
4. Impact of lipid mobilisation on liver function
5. Demands of the foetus and udder for nutrients

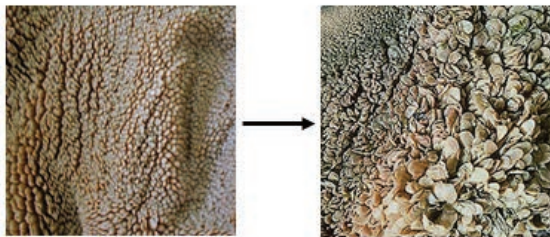


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Putting Transition Cow Management into Practice

Five challenges to establishing a successful lactation

1. Rumen adaptation



Before adaptation After adaptation
 Takes 3-6 weeks for papillae to develop
 7-10 days for bugs to adapt



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Five challenges to establishing a successful lactation

2. Reduced dry matter intake
 - Feed intake is decreased by up to 30% during the week before calving (especially if feeding poor quality hay)
3. Higher demands for calcium
 - Blood calcium must be maintained within a narrow range
 - Onset of lactation increases the cow's daily calcium requirement by 2 to 4 fold!
 - This extra calcium must come from mobilisation of bone storage and increased rate of calcium absorption from the gut



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Components of an integrated transition diet

- Energy and protein
 - Body condition at calving
 - Post calving intakes
 - Amino acids
 - Fat supplements
- Macrominerals and DCAD
- Microminerals
- Rumen modifiers
- Buffers and other possible additives



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Case study farm:

Trevor and Yvonne's 2010 transition diet

Look at the diet specifications for the silage fed.

Are any of these outside recommended ranges? (see table 4 in workbook)

What else would you need to know to assess the milk fever risk for this herd?



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Table 4: Recommendations for far-off, transition and fresh cow diets.

Nutrient	Total diet analysis (dry matter basis)		
	Far-off dry cows (More than four weeks pre-calving)	Transition cows (Last four weeks pre-calving)	Fresh cows (first four weeks post-calving)
Neutral Detergent Fibre % (NDF)	> 36%	>36%	>32%
Physically effective NDF %	30%	25-30%	>19%
Crude protein (CP) %	>12%	14-16%	16-19%
Degradability of CP	80%	65-70%	65-70%
Metabolisable energy intake per day (MJ)	90-100	100-120	160
Estimated energy density (MJ ME / kg DM)	10 (9)*	11	11.5-12
Starch %	Up to 18%	18-22	22-24
Sugar %	Up to 4%	4-6	6-8
Fat %	3%	4-5%	4-5%
Calcium %	0.4%	0.4 to 0.6%	0.8 to 1.0%
Phosphorus %	0.25%	0.25 to 0.4%	0.4%
Magnesium %	0.3%	0.45%	0.3%
DCAD [^] Meq/kg	<150	<80	>250
Selenium mg/kg	0.3	0.3	0.3
Copper mg/kg	10	15	20
Cobalt mg/kg	0.11	0.11	0.11
Zinc mg/kg	40	48	48
Manganese mg/kg	12	15	15
Iodine mg/kg	0.6	0.6	0.6
Vitamin A iu/g	2000	3200	3200
Vitamin D iu/g	1000	#	1000
Vitamin E iu/g	15	30#	15

*Energy content that is desirable will vary with body condition
[^] See Section 4 for details
[#] Vitamin D and E concentrations in the transition period are yet to be determined. Vitamin D inputs, in particular, will be determined by new understandings of the use of this vitamin to prevent milk fever.

Table 5: Sources of anions in the diet: Comparative aspects.

Sources	Comments	References
Mineral sulphates, e.g. calcium sulphate, magnesium sulphate, ammonium sulphate	Sulphate salts are more palatable than chloride. Ammonium salts provide non-protein nitrogen (NPN). The NPN can be beneficial on low protein diets.	
Mineral chlorides, e.g. calcium chloride, magnesium chloride, ammonium chloride	Lower DCAD per gm than sulphates. Ammonium salts provide non-protein nitrogen (NPN). The NPN can be beneficial on low protein diets.	
Hydrochloric acid, e.g. Anipro®	Hydrochloric acid is an effective agent to decrease DCAD. Molasses-based, e.g. Anipro® is used to mask taste and encourage intake.	Goff and Horst (1998)
Hydrochloric acid in a protein meal, e.g. SoyChlor®	Hydrochloric acid is an effective agent to decrease DCAD – a safer means to deliver – protein meal provides added benefit. Contains magnesium 2.47%.	Goff and Horst (1998)
Stabilised hydrochloric acid and sulphuric acids in a protein meal, e.g. BioChlor®	Hydrochloric acid is an effective agent to decrease DCAD. Sulphur also appears to be effective – a safer means to deliver – protein meal provides added benefit with specific NPN components to increase rumen efficiency and increase microbial protein production.	De Groot <i>et al</i> (2010) Lean <i>et al.</i> (2005)

Table 6: Mineral composition and DCAD of minerals and anionic feeds commonly used in pre-calving transition diets (DM basis).

Mineral		Ca %	Mg %	Cl %	S %	Na %	K %	DCAD* (mEq/Kg)
Magnesium sulphate (Epsom salts)	MgSO4.7H2O	-	9.98	-	13.01	-	-	-8100
Magnesium chloride	MgCl.6H2O	-	11.96	34.87	-	-	-	-9830
Calcium sulphate (Gypsum)	CaSO4.2H2O	27.26	-	-	18.63	-	-	-10590
Calcium chloride	CaCl2.2H2O	23.28	-	48.22	-	-	-	-13800
Ammonium sulphate	(NH4)2SO4	-	-	-	24.26	-	-	-14950
Ammonium chloride	NH4Cl	-	-	66.26	-	-	-	-18590
Magnesium oxide	MgO	-	58.0	-	-	-	-	0
Sodium bicarbonate	NaHCO2	-	-	-	-	27.00	-	+11740
Sodium chloride (Salt)	NaCl	-	-	60.70	-	39.34	-	0
Limestone (Lime)	Limestone	37.0	2.06	0.03	0.04	0.06	0.12	+20
BioChlor*	BioChlor*	0.09	0.29	10.11	2.36	1.10	1.09	-3540
SoyChlor 16:7*	SoyChlor 16:7*	4.04	2.65	10.29	0.35	0.15	0.70	-2870

* As per short DCAD equation: (Na⁺ + K⁺) – (Cl⁻ + S²⁻)

Table 7: Conversion factors from per cent dry matter to mEq/kg DM.

Element	To convert % DM to mEq/kg DM: multiply by
Sodium	434.98
Potassium	255.74
Chloride	282.06
Sulphur	623.75

Table 8: Mineral composition and DCAD of feeds commonly used in pre-calving transition diets.

Feed*	Ca %	Mg %	Cl %	S %	Na %	K %	DCAD (mEq/kg DM)*	
							Typical	Range
Rye / clover pasture	0.63	0.23	2.0	0.28	0.53	3.4	+390	+10 to +750
Kikuyu pasture	0.34	0.37	4.5	.10	.33	1.96	+680	+10 to +750
Lucerne	1.53	0.31	0.61	0.30	0.14	2.57	+360	+10 to +750
Oat Hay	0.35	0.16	1.02	0.14	0.42	1.87	+280	0 to +750
Pasture Hay	0.47	0.18	0.66	0.17	0.02	2.00	+230	+10 to +750
Wheat Hay	0.35	0.16	0.53	0.16	0.08	1.77	+240	0 to +750
Grass Silage	0.57	0.22	0.76	0.20	0.05	2.78	+390	+10 to +750
Maize Silage	0.31	0.22	0.32	0.12	0.01	1.22	+150	+5 to +300
Sorghum Silage	0.49	0.28	0.60	0.12	0.02	1.72	+200	+10 to +750
Trit Silage	0.52	0.17	0.75	0.20	0.08	2.90	+440	+10 to +750
Wheat	0.05	0.16	0.09	0.17	0.02	0.41	-20	0 to +50
Barley	0.05	0.14	0.08	0.13	0.01	0.52	+40	0 to +50
Almond Hulls	0.27	0.11	0.04	0.03	0.02	2.65	+660	
Molasses	1.00	0.42	0.75	0.47	0.22	4.01	+620	-10 to 700
Bread	0.20	0.08	1.11	0.16	0.64	0.34	-50	
Brewers Grain	1.32	0.35	0.16	0.09	0.02	0.64	+70	
Canola	0.75	0.51	0.03	0.63	0.09	1.31	-30	0 to +50
Whole Cottonseed	0.18	0.36	0.08	0.25	0.03	1.19	+140	0 to +50
Palm kernel meal								0 to +240

* Chemical composition expressed on a dry matter basis.
Note that mineral composition of feeds may vary widely depending on source / fertiliser history / season etc. and so too their DCAD value. Feeds should therefore be analysed using wet chemistry rather than relying on 'book values'.

Table 9: Risk level of feeds commonly used in pre-calving transition diets for milk fever.

Low	Moderate	High
Low potassium molasses	Maize silage	High potassium molasses
Grains	Cereal hays (these can still be high)	Pasture treated with effluent
Most grain-based byproducts	Whole cotton seed	Legume pastures
Protein meals		Sodium bicarbonate
Brewers grains		


Common transition feeding approaches

Approach:	Pasture / hay only	Pasture / hay + anionic salts in fodder or water	Pasture / hay + grain / concentrate	Pasture / hay + grain / concentrate + DIY anionic salts	Pasture / hay + commercial transition supplement (lead feed)*	Fully integrated transition diet fed as PMR or TMR
Effective in terms of ...						
Rumen adaptation	-	-	✓✓✓✓	✓✓✓✓-	✓✓✓✓✓	✓✓✓✓✓
Positive Metab. Energy balance	-	-	✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓✓
Positive Metab. Protein balance	-	-	✓	✓✓	✓✓✓-✓✓✓✓	✓✓✓✓✓
Milk fever control	-	✓-✓✓	-	✓✓✓	✓✓✓✓✓	✓✓✓✓✓
Other metabolic disease control	-	-	✓✓	✓✓✓✓	✓✓✓✓✓	✓✓✓✓✓
Improved animal health	-	✓✓	✓✓	✓✓✓	✓✓✓-✓✓✓✓	✓✓✓✓✓
Improved milk production	-	✓	✓✓	✓✓✓	✓✓✓-✓✓✓✓	✓✓✓✓✓
Improved fertility	-	✓	✓✓	✓✓	✓✓✓-✓✓✓✓	✓✓✓✓✓
Overall effectiveness	-	✓✓	✓✓	✓✓-✓✓✓	✓✓✓-✓✓✓✓	✓✓✓✓✓
Comments	Does not address any needs of the transition cow.	Does not address rumen adaptation to grain / conc.	Does not address control of macromineral disorders.	Possible palatability problems. Can be difficult to control macro mineral disorders.	Can be a highly effective strategy if diet is fully integrated.	Highly effective strategy.
<i>* May or not include all the nutritional components necessary to provide a fully integrated transition diet</i>						

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Other transition feeding approaches

- Energy intake restriction
- Vitamin D
- Hydrochloric acid
- Calcium drenches at calving



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Session 4: Making it work on farm

Monitoring your TCM program's performance

Group activity:

Setting up a good transition program on farm.

What needs to be considered?

Animals	Feed

Infrastructure	People

Monitoring TCM program's performance

How would you know if a farm's transition program is being well managed?

- What would you look for?
- What would you measure?

Putting Transition Cow Management Programs into Practice

Case study farm:

Trevor and Yvonne's 2011 transition diet


Things were changed- what happened???

What health problems did they have?

Why?

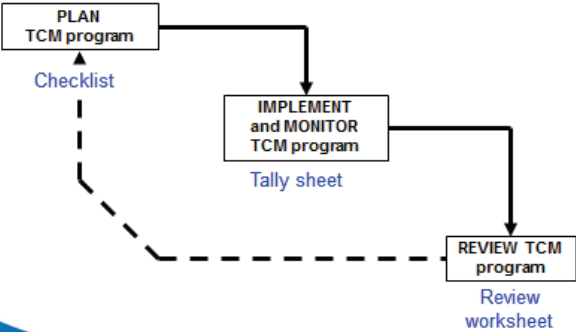
What else do you need to know?

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TCM Plan-Do+Monitor-Review process



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Session 5: Your TCM action plan Summary. Where to from here?

Individual activity:

Your TCM action plan

Consider:

- What have you done in the past?
- Where do the risks and opportunities lie?
- What could you do differently from now on?
- Who would be good to talk to and involve and when?

Write down 5 key points from today's workshop:

1. _____

2. _____

3. _____

4. _____

5. _____

Transition Cow Management Action Plan

Date created:/...../.....
 Name:
 Address:
 Phone:

What would be good to do	Who needs to be involved	By when	Done ✓
1.			
2.			
3.			
4.			
5.			

Other comments

For more information about transition cow management, visit www.dairyaustralia.com.au
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Putting Transition Cow Management into practice

Meet Trevor and Yvonne- a case study

Background:

Trevor and Yvonne have been farming in SW Victoria for 5 years, having shifted there from Nth Victoria during the drought.

Seasonal calving farm of 400 cows in SW Victoria, calving from 1st May.
325 cows and 75 heifers.

Two years of records were accessible- 2010 and 2011.

Been 'transition' feeding in different ways for years.

Fed a transition ration mix of grass, silage and pellets in 2010.

Cow health problems experienced in 2010 from calving through to dry off
(records from on-farm dairy software program):

Disease/health problem	2010	Tick if linked to transition period	Are these levels too high?
Milk fever	60 cases		
RFM's *	28 cases		
Mastitis	68 cases		
Eye cancers	6 cases		
Metritis **	60 cases		
Photosensitization	10 cases		
Assisted calvings	20 cases		
Acetonaemia/ketosis	8 cases		

- * RFM's treated and recorded
- **Metritis level from whole herd metricheck examination

Assess which diseases or health problems you think are linked to the transition period management.

Are these too high? What are acceptable levels?

Putting Transition Cow Management into practice

Trevor and Yvonne case study session 2

Transition diet 2010

Trevor and Yvonne were feeding:

3kg DM ryegrass/clover pasture

+

5kgs DM ryegrass silage

+

2.7kgs 'Acme' 15% milker ration

They had heard that feeding some grain or milkers feed before calving was a good idea and that the silage they had harvested was a good nutritional source of energy and protein for a springers ration.

Diet analysis done for silage- see lab report for specifications.

Comment on whether the silage will meet dietary recommendations. What is outside the recommended range?

Is there enough information to properly assess nutrient requirements and milk fever risk?

Feed Analysis Report

Trevor and Yvonne
Bloggs Rd
Bourketown South

Date received: 28/7/10
Date reported: 3/8/10

Submitted by: Client

Lab. no.	Your sample ID	Collected	By
01-048	Ryegrass silage	3/8/10	

Results of Analysis:

<u>Test</u>	<u>Method</u>	<u>Units</u>	<u>01/048</u>
Moisture	Wet	%	45.8
Dry matter	Wet	%	54.2
Crude protein	NIR	% DM	14.3
Acid Detergent Fibre	NIR	% DM	32.1
Neutral Detergent Fibre	NIR	% DM	52.3
Metabolisable Energy	Calculated	MJ/kg DM	9.8
Calcium	Calculated	% DM	0.57
Phosphorus	Calculated	% DM	0.39
Magnesium	Calculated	% DM	0.25
Sodium	Calculated	% DM	0.16
Potassium	Calculated	% DM	2.75
Chloride	Calculated	% DM	0.20
DCAD	Calculated	mEq/kg DM	414

Comments:

*** AFIA FODDER GRADE = A2*** (Category: Pasture hay and silage)

Dietary Cation Anion Difference (DCAD) has been calculated using the following equation:

$$\text{DCAD} = (\text{Na} + \text{K}) - (\text{Cl} + \text{S})$$

Putting Transition Cow Management into practice

Trevor and Yvonne case study

2011 transition diet

In 2011 Trevor and Yvonne changed their transition ration to:

6kgs pasture hay

+

3kgs ryegrass/clover pasture

+

2.7kgs "Acme" lead feed pellet

Approx feed times on lead in ration was 14 days.

They still had issues with milk fever in 2011.

See lab results.

See Tally sheets, Review sheets and Checklist for Trevor and Yvonne.

Diet A

Transition diet: (Kgs Dry Matter / cow / day):

7 kg Wheaten hay (see feed lab report)

+

3 kg Wheat

+

0.9 kg 'Acme' Lead Feed Concentrate (see product bag tag)

Feed Analysis Report

A & B Smith
Back of Bourke Rd
Jonestown

Date received: 28/1/11
Date reported: 3/2/11

Submitted by: Client

Lab. no.	Your sample ID	Collected	By
01-034	Wheaten hay	3/2/11	

Results of Analysis:

<u>Test</u>	<u>Method</u>	<u>Units</u>	<u>01/034</u>
Moisture	Wet	%	12.1
Dry matter	Wet	%	87.9
Crude protein	NIR	% DM	10.9
Acid Detergent Fibre	NIR	% DM	36.9
Neutral Detergent Fibre	NIR	% DM	58.1
Metabolisable Energy	Calculated	MJ/kg DM	9.4
Calcium	Calculated	% DM	0.29
Phosphorus	Calculated	% DM	0.32
Magnesium	Calculated	% DM	0.16
Sodium	Calculated	% DM	0.10
Potassium	Calculated	% DM	2.45
Chloride	Calculated	% DM	0.92
Sulphur	Calculated	% DM	0.09
DCAD	Calculated	mEq/kg DM	354

Comments:

*** AFIA FODDER GRADE = B1*** (Category: Cereal hay and silage)

Dietary Cation Anion Difference (DCAD) has been calculated using the following equation:

$$\text{DCAD} = (\text{Na} + \text{K}) - (\text{Cl} + \text{S})$$

ACME Stockfeed Company

ACME Lead Feed Concentrate

An anionic salt concentrate to be fed at 1kg per cow per day to dairy cows in the last 3 weeks before calving.

INGREDIENTS USED

Barley, wheat, canola meal, lupins, canola oil, calcium sulphate, calcium chloride, magnesium sulphate, magnesium chloride, sodium chloride, trace mineral and vitamin premix, Rumensin, flavour.

ANALYSIS

Dry matter	90.0% min.
Crude Protein	12.0% min.
Ruminant ME	11.5 MJ/kg DM
Crude Fibre	8% DM max.
Salt	0.2% DM max.
Urea	0%
Monensin	250mg/kg DM
Calcium	5% DM
Phosphorus	2% DM
Magnesium	3% DM
DCAD	-280 mEq/kg DM

Manufactured by
ACME Stockfeed Company
12 Victoria St, Woodside, Vic. 3333
Ph. (03) 1234 5678

Date of manufacture: 12/1/11
Batch No. 1234

NET WEIGHT 25 kg

**MEDICATED FOODSTUFF
CONTAINS MONENSIN SODIUM
MUST NOT BE FED TO HORSES**

**THIS PRODUCT DOES NOT CONTAIN
RESTRICTED ANIMAL MATERIAL**

Diet B

Transition diet: (Kgs Dry Matter / cow / day):

3 kg Ryegrass/clover pasture

+

5 kg Ryegrass silage (see feed lab report)

+

2.7 kg 'Acme' 15% Milker ration

Feed Analysis Report

F Dagg
Bloggs Rd
Bourketown South

Date received: 28/1/11
Date reported: 3/2/11

Submitted by: Client

Lab. no.	Your sample ID	Collected	By
01-048	Ryegrass silage	3/2/11	

Results of Analysis:

<u>Test</u>	<u>Method</u>	<u>Units</u>	<u>01/048</u>
Moisture	Wet	%	45.8
Dry matter	Wet	%	54.2
Crude protein	NIR	% DM	14.3
Acid Detergent Fibre	NIR	% DM	32.1
Neutral Detergent Fibre	NIR	% DM	52.3
Metabolisable Energy	Calculated	MJ/kg DM	9.8
Calcium	Calculated	% DM	0.57
Phosphorus	Calculated	% DM	0.39
Magnesium	Calculated	% DM	0.25
Sodium	Calculated	% DM	0.16
Potassium	Calculated	% DM	2.75
Chloride	Calculated	% DM	0.83
Sulphur	Calculated	% DM	0.20
DCAD	Calculated	mEq/kg DM	414

Comments:

*** AFIA FODDER GRADE = A2*** (Category: Pasture hay and silage)

Dietary Cation Anion Difference (DCAD) has been calculated using the following equation:

$$\text{DCAD} = (\text{Na} + \text{K}) - (\text{Cl} + \text{S})$$

Diet C

Transition diet: (Kgs DM / cow / day)

4 kg Pasture hay

+

4 kg Maize silage (see feed lab report)

2.7 kg 'Acme' Complete Lead Feed supplement (see product bag tag)

Feed Analysis Report

C & D Bloggs
Jones Rd
Bourketown

Date received: 28/1/11
Date reported: 3/2/11

Submitted by: Client

Lab. no. Your sample ID Collected By
01-048 **Maize silage** 3/2/11

Results of Analysis:

<u>Test</u>	<u>Method</u>	<u>Units</u>	<u>01/048</u>
Moisture	Wet	%	64.8
Dry matter	Wet	%	35.2
Crude protein	NIR	% DM	8.6
Acid Detergent Fibre	NIR	% DM	32.9
Neutral Detergent Fibre	NIR	% DM	47.4
Metabolisable Energy	Calculated	MJ/kg DM	10.5
Calcium	Calculated	% DM	0.28
Phosphorus	Calculated	% DM	0.54
Magnesium	Calculated	% DM	0.26
Sodium	Calculated	% DM	0.02
Potassium	Calculated	% DM	1.37
Chloride	Calculated	% DM	0.35
Sulphur	Calculated	% DM	0.13
DCAD	Calculated	mEq/kg DM	179

Comments:

*** AFIA FODDER GRADE = A2*** (Category: Cereal hay and silage)

Dietary Cation Anion Difference (DCAD) has been calculated using the following equation:

$$\text{DCAD} = (\text{Na} + \text{K}) - (\text{Cl} + \text{S})$$

ACME Stockfeed Company

ACME Complete Lead Feed supplement

An anionic salt concentrate to be fed at 3kg per cow per day to dairy cows in the last 3 weeks before calving.

INGREDIENTS USED

Barley, wheat, canola meal, lupins, canola oil, calcium sulphate, calcium chloride, magnesium sulphate, magnesium chloride, sodium chloride, trace mineral and vitamin premix, Rumensin 10%, flavour.

ANALYSIS

Dry matter	90.0% min.
Crude Protein	20.0% min.
Ruminant ME	12.5 MJ/kg DM
Crude Fibre	10% DM max.
Salt	0.2% DM max.
Urea	0%
Monensin	83mg/kg DM
Calcium	1% DM
Phosphorus	0.2% DM
Magnesium	2% DM
DCAD	-600 mEq/kg DM

Manufactured by
ACME Stockfeed Company
12 Victoria St, Woodside, Vic. 3333
Ph. (03) 1234 5678

Date of manufacture: 12/1/11
Batch No. 1234

NET WEIGHT 25 kg

**MEDICATED FOODSTUFF
CONTAINS MONENSIN SODIUM
MUST NOT BE FED TO HORSES**

**THIS PRODUCT DOES NOT CONTAIN
RESTRICTED ANIMAL MATERIAL**

Group activity:
What is the risk level of this transition diet for milk fever:
Low, Moderate or High?

Diet A

Transition diet: (Kgs Dry Matter / cow / day):

7 kg Wheaten hay

+

3 kg Wheat

+

0.9 kg 'Acme' Lead Feed Concentrate

Total DCAD: 200 mEq/kg

Calcium: 0.61%

Phosphorus: 0.48%

Magnesium: 0.39%

Overall risk: LOW / MODERATE / HIGH

Diet B

Transition diet: (Kgs Dry Matter / cow / day):

3 kg Ryegrass/clover pasture

+

5 kg Ryegrass silage

+

2.7 kg 'Acme' 15% Milker ration

Total DCAD: 440 mEq/kg

Calcium: 0.78%

Phosphorus: 0.43%

Magnesium: 0.26%

Overall risk: LOW / MODERATE / HIGH

Diet C

Transition diet: (Kgs DM / cow / day)

4 kg Pasture hay

+

4 kg Maize silage

2.7 kg 'Acme' Complete Lead Feed supplement

Total DCAD: 0 mEq/kg

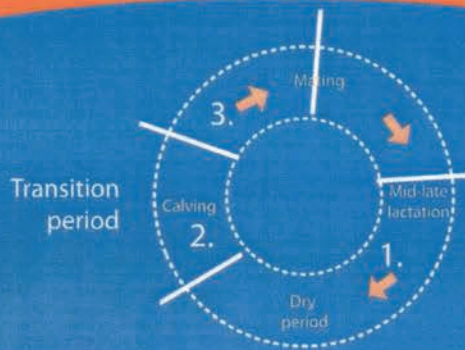
Calcium: 0.53%

Phosphorus: 0.36%

Magnesium: 0.67%

Overall risk: LOW / MODERATE / HIGH

Checklist for transition cow management



Are all the boxes ticked on this farm?

1. Mid-lactation to early dry period: Up to 3-4 weeks before calving

*Trent + Yvonne
2011*

Animals	Feed
<p>Length of time cows are dry:</p> <p><input type="checkbox"/> Cows are dried off so as to have a minimum 6-week dry period (8 weeks preferred)</p> <p><input checked="" type="checkbox"/> Early pregnancy test for accurate dry off dates</p> <p><input checked="" type="checkbox"/> Cows to be induced are identified and dried off at least 5 weeks before induction commences</p> <p>Mastitis risk management:</p> <p><input checked="" type="checkbox"/> Cows are given appropriate dry cow treatment at dry-off, including teat sealant after seeking vet advice</p> <p><input checked="" type="checkbox"/> Heifers are given teat sealant 3 weeks before expected calving date if more than 5 cases of mastitis per 100 heifers in the first month in previous years</p> <p>Monitoring dry cows' body condition:</p> <p><input checked="" type="checkbox"/> Cows' body condition score is monitored during dry period</p> <ul style="list-style-type: none"> • Body condition score cows at dry-off (and again when enter transition program) 	<p>Managing dry cows' body condition:</p> <p><input checked="" type="checkbox"/> Cows are fed to maintain or gain body condition during dry period</p> <ul style="list-style-type: none"> • Test supplementary feeds for nutritional value • If high-quality forages (>9MJ ME/kg DM) are in limited supply or too expensive, consider feeding grain / concentrates to dry cows, ensuring all cows have equal access • Aim for a total of 100-120 MJ intake per cow per day • Manage cows so they don't calve in BCS >5.5 • Consider separating thin cows (<BCS 4.5) at dry off and feeding them preferentially
Infrastructure	People
<p>Feeding infrastructure:</p> <p><input checked="" type="checkbox"/> Troughs / self feeders are available for feeding far-off dry cows grain / concentrates if necessary</p>	<p>Roles and responsibilities / work routines / training:</p> <p><input checked="" type="checkbox"/> Written standard operating procedures have been prepared for farm team and are being complied with</p> <ul style="list-style-type: none"> • Remember the 'keep it simple' rule <p><input checked="" type="checkbox"/> Farm team members who have new roles, responsibilities and work routines have had the necessary training</p> <ul style="list-style-type: none"> • Consider an in-house training activity

2. Transition period: Last 3-4 weeks pre-calving

Animals	Feed		
<p>Length of time on transition diet:</p> <p><input checked="" type="checkbox"/> Cows (including those to be induced) and heifers are fed transition diet for 21 days</p> <ul style="list-style-type: none"> • Early pregnancy test for accurate due calving dates <p><i>7-14 days</i></p>	<p>Sourcing transition feed ingredients:</p> <p><input checked="" type="checkbox"/> All forages are suitable for transition diet</p> <ul style="list-style-type: none"> • Test for DM, ME, CP, NDF, DCAD, Ca, Mg and P before buying, ensuring wet chemistry method is used for mineral analysis, not NIR <p><input checked="" type="checkbox"/> Fodder purchases are planned in advance</p> <ul style="list-style-type: none"> • Buy a single consignment of suitable hay / silage from one source and dedicate it to transition cows 		
<p>Heifers:</p> <p><input checked="" type="checkbox"/> Heifers are put in with the transition cows for 21-28 days to help them adapt their rumens, get extra minerals and socialise with older animals</p> <p><i>Too short time</i></p> <ul style="list-style-type: none"> • If springers are fed in the dairy, also run the heifers through the dairy. This gets them used to the dairy and helps harden their feet <p><input checked="" type="checkbox"/> Heifers are early pregnancy tested to get accurate due calving dates</p>	<p>Diet formulation:</p> <p><input checked="" type="checkbox"/> Diet includes all nutritional components required for a well integrated transition diet, but is not over-complicated</p> <table border="0"> <tr> <td> <ul style="list-style-type: none"> • 100-120 MJ ME (approx. 11 MJ ME/Kg DM) ✓ • >36% NDF DM ✓ • 14-16% crude protein DM ✓ • DCAD <80 (ideally zero) ✓ • Ca <0.6% DM, P <0.4% DM ✓ </td> <td> <ul style="list-style-type: none"> • Mg >0.45% DM ✓ • Micro minerals – as reco'd ✓ • Rumen modifier – use same as in milker diet ✓ • Low DCAD buffers only (do not use sodium bicarbonate) ✓ </td> </tr> </table>	<ul style="list-style-type: none"> • 100-120 MJ ME (approx. 11 MJ ME/Kg DM) ✓ • >36% NDF DM ✓ • 14-16% crude protein DM ✓ • DCAD <80 (ideally zero) ✓ • Ca <0.6% DM, P <0.4% DM ✓ 	<ul style="list-style-type: none"> • Mg >0.45% DM ✓ • Micro minerals – as reco'd ✓ • Rumen modifier – use same as in milker diet ✓ • Low DCAD buffers only (do not use sodium bicarbonate) ✓
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<p>Group size:</p> <p><input checked="" type="checkbox"/> Cows are grouped to control dominant behaviour and help ensure all cows have access to enough feed</p>	<p><input checked="" type="checkbox"/> Lead feed product used is nutritionally sound and used as intended</p> <ul style="list-style-type: none"> • Consider if use professional formulation or DIY • Consider whether use lead feed pellet, grain mix, loose mix or liquid supplement. Use same form before and after calving, e.g. grain mix, pellets • Check that DCAD potency is appropriate for reco. per cow feeding rate <p>Feeding out times:</p> <p><input checked="" type="checkbox"/> Timing of feeding each day is regular and cows have 8 hours access per day</p> <ul style="list-style-type: none"> • If you lead feed in late afternoon, cows are more likely to calve in daytime 		
<p>Mastitis risk management:</p> <p><i>N/A</i></p> <p><input type="checkbox"/> Teats are sprayed if feeding in the dairy</p> <p><input checked="" type="checkbox"/> Any cows or heifers that develop marked udder oedema or begin dripping milk are milked</p> <ul style="list-style-type: none"> • Calves from these cows need to receive colostrum from another cow or stored colostrums 	<p>Access to pasture:</p> <p><input checked="" type="checkbox"/> Cows' access to pasture is carefully restricted to less than 2 kg dry matter per day to minimise milk fever risk</p> <p><i>~3kg</i></p> <ul style="list-style-type: none"> • Ensure pasture cover in springer paddock is enough to assist hygiene but not too much. Strip graze as necessary • Do not graze effluent or potassium supplemented pastures <p>Water:</p> <p><input checked="" type="checkbox"/> Stock water supply is cool and fresh, with pH close to neutral</p> <p><i>Raw water</i></p> <ul style="list-style-type: none"> • If considering using bore water, check for pH and total dissolved salts • If supplying Mg Cl in water, use dispenser to control dilution and check daily cow consumption 		

Transition period: Last 3-4 weeks pre-calving (continued)

Infrastructure	People																																	
<p>Springer paddock / feedpad:</p> <p><input checked="" type="checkbox"/> Springer paddock / feedpad configuration</p> <ul style="list-style-type: none"> • Consider whether to use a springer paddock which includes hay feeders +/- lead feed troughs, or a separate springer paddock with a simple feedpad adjacent to it • Ensure springer paddock / feedpad are an adequate size for number of cows using them at peak times • If lead feeding in dairy, ensure springer paddock / feedpad is close by <p>Mastitis risk management:</p> <p><input checked="" type="checkbox"/> Springer paddock / feedpad are clean and dry</p> <ul style="list-style-type: none"> • ANY reduction in exposure to fresh cow pats reduces mastitis risk • Prepare well compacted and sloped surfaces for feeding area / feedpad • Scrape manure with blade regularly • Set up 2-3 springer paddocks that you can rotate regularly <p>Feeding infrastructure and equipment:</p> <p><input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Cows have equal and free access to transition diet</p> <p>If lead feeding in dairy:</p> <ul style="list-style-type: none"> • Ensure feeding system is well calibrated and delivering a consistent quantity of grain / lead feed per bail • If using a herringbone, check that an even quantity of feed is dropped along all bails on each side (individual bales are preferred to a continuous trough) <p>If lead feeding in springer paddock:</p> <ul style="list-style-type: none"> • Do not feed lead feed on ground, use troughs. Consider second hand troughs or tractor tyres • Provide >0.75 metre trough space per cow • If using hay feeders, ensure they are adequate for the number of cows and low waste <p><input type="checkbox"/> Feeding infrastructure and equipment saves labour</p> <ul style="list-style-type: none"> • Buy, store and handle lead feed in bulk versus bags • If lead feeding in the dairy, consider installing an extra feeding system (if herringbone dairy) or feed head (if rotary dairy) • If feeding in the paddock, use a FEL, a feed hopper with auger on a trailer, or a mixer wagon to put out lead feed / PMR in troughs • Use troughs which are easy to clean • Consider a dedicated lead feed silo 	<p>Roles and responsibilities / work routines / training:</p> <ul style="list-style-type: none"> • <input checked="" type="checkbox"/> Written standard operating procedures have been prepared and are being complied with by farm team <ul style="list-style-type: none"> • Remember the 'keep it simple' rule • <input checked="" type="checkbox"/> Farm team members who have new roles, responsibilities and work routines understand the benefits of good transition management and have the necessary training <ul style="list-style-type: none"> • Consider a training course <p>Safety:</p> <ul style="list-style-type: none"> • <input checked="" type="checkbox"/> Staff have identified and minimised the risks to cows and people • <input checked="" type="checkbox"/> Staff know what to do if something goes wrong <p>Monitoring:</p> <ul style="list-style-type: none"> • <input checked="" type="checkbox"/> Record cows' body condition score as they enter the transition program • <input checked="" type="checkbox"/> The transition program is regularly monitored for effectiveness and efficiency <ul style="list-style-type: none"> • Ensure each individual cow is receiving and consuming its transition diet • Record all cow health problem events and treatments around calving <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #f4a460;"> <th>Health problem</th> <th>Target</th> <th>Seek help if</th> </tr> </thead> <tbody> <tr> <td>Milk fever</td> <td>1% (old cows >8yrs: 2%)</td> <td>>3%</td> </tr> <tr> <td>Clinical ketosis</td> <td><1%</td> <td>>2%</td> </tr> <tr> <td>Abomasal displacements</td> <td><1%</td> <td>>2%</td> </tr> <tr> <td>Mastitis</td> <td><5 cases / 100 cows / first 30 days</td> <td>>5 cases / 100 cows / first 30 days</td> </tr> <tr> <td>Lameness</td> <td><2% with > Score 2 out of 5</td> <td>>4% with > Score 2 out of 5</td> </tr> <tr> <td>Grass Tetany</td> <td>0%</td> <td>1 case</td> </tr> <tr> <td>RFM (>24 hrs after calving)</td> <td><4%</td> <td>>6%</td> </tr> <tr> <td>Vaginal discharge after 14 days</td> <td><3%</td> <td>>10%</td> </tr> <tr> <td>Assisted calving</td> <td><2%</td> <td>>3%</td> </tr> <tr> <td>Lactic acidosis</td> <td>0%</td> <td>1%</td> </tr> </tbody> </table> <p><small>* Based on the following data sets: Morton, Curtis, Beckett, Moss, Stevenson.</small></p>	Health problem	Target	Seek help if	Milk fever	1% (old cows >8yrs: 2%)	>3%	Clinical ketosis	<1%	>2%	Abomasal displacements	<1%	>2%	Mastitis	<5 cases / 100 cows / first 30 days	>5 cases / 100 cows / first 30 days	Lameness	<2% with > Score 2 out of 5	>4% with > Score 2 out of 5	Grass Tetany	0%	1 case	RFM (>24 hrs after calving)	<4%	>6%	Vaginal discharge after 14 days	<3%	>10%	Assisted calving	<2%	>3%	Lactic acidosis	0%	1%
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3. Calving and early lactation

Animals	Feed
<p>Fresh cow management:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Fresh cows are given special attention <input checked="" type="checkbox"/> • Consider the feasibility of running a separate fresh cow herd for cows up to 4 weeks post-calving 	<p>Sourcing milker feed ingredients:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Forage used is high quality with adequate NDF and physically effective fibre
<p>Monitoring cows' nutritional status:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Quick checks are used to identify any nutritional problems which may lead to too much body condition loss between calving and joining <input checked="" type="checkbox"/> • Check grain / concentrate left in bails <input checked="" type="checkbox"/> • Check milk composition (protein and fat percentages) <input checked="" type="checkbox"/> • Check pasture residuals, rumen fill, cud chewing, lameness, manure consistency 	<p>Diet formulation:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Diet for fresh cows (first 4 weeks post-calving) includes all nutritional components required by fresh cows <ul style="list-style-type: none"> • 160 MJ ME (approx. 11.5-12 MJ ME/Kg DM) • >32% NDF DM • 16-19% crude protein DM • DCAD >250 • Ca: 0.8-1.0% DM, P: 0.4% DM, Mg: 0.3% DM • Micro minerals • Rumen modifier – use same as in pre-calving transition diet
<p>Mastitis risk management:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Fresh cows are handled quietly and not rushed during moving and milking <input checked="" type="checkbox"/> All quarters are milked out for the first 8 milkings, using good technique and a consistent routine 	<p>Grain feeding rate:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Grain feeding rate of each freshly calved cow is ramped up gradually over first 5-7 days post calving <i>5-7 days</i> <ul style="list-style-type: none"> • Consider installing an individual cow ID feeding system
Infrastructure	People
<p>Mastitis risk management:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Calving area / facilities are clean and dry <ul style="list-style-type: none"> • Consider a separate 'close-up springer paddock' (possibly with shelter from wind and rain) for cows in last 4-5 days before calving 	<p>Roles and responsibilities / work routines / training:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Written standard operating procedures have been prepared for farm team and are being complied with <ul style="list-style-type: none"> • Remember the 'keep it simple' rule <input checked="" type="checkbox"/> Farm team members who have new roles, responsibilities and work routines have had the necessary training <ul style="list-style-type: none"> • Consider a training course <p>Monitoring:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> The calving / fresh cow program is regularly monitored for effectiveness and efficiency <input checked="" type="checkbox"/> Records all cow health problem events and treatments around calving (see previous page)

For more feeding recommendations, go to the Grains2Milk resources at www.dairyaustralia.com.au

For more about controlling mastitis, go to the Countdown Farm Guidelines at www.dairyaustralia.com.au

For more about clarifying job tasks, go to The People in Dairy website www.thepeopleindairy.org.au

Cow health problems at calving

Tally sheet

Farm ID Traver + Yvonne

Total number of cows ~ 400

Calving period: Start date 1/5/11

End date: 17/11

Notes

Some calving induction done - see calving spikes
in weeks 7, 8, 9.

Mastitis in fresh cows mostly under 1 week.

More RFM's associated with inductions.

lots of milk fever ~ 10%

RFM's ~ 5%

assisted calvings ~ 4%

For more feeding recommendations, go to the Grains2Milk resources at www.dairyaustralia.com.au

For more about controlling mastitis, go to the Countdown Farm Guidelines at www.dairyaustralia.com.au

For more about clarifying job tasks, go to The People in Dairy website www.thepeopleindairy.org.au

Treyed + Yvonne 2011

Number of cows	Week 1 Commencing 15/11	Wkly Total	Week 2 Commencing 8/11	Wkly Total	Week 3 Commencing 15/11	Wkly Total	Week 4 Commencing 22/11	Wkly Total
Calved		71		41		40		27
Milk fever	✓✓✓✓✓	6	✓✓✓✓.	4	✓✓✓	3	✓✓✓	3
RFMs	✓✓✓	3	✓✓	2	✓	1	✓	1
Assisted calvings	✓✓✓✓	4	✓✓	2	-	0	-	0
Mastitis	✓✓✓✓✓	7	✓✓✓✓✓	6	✓✓✓✓	4	✓.	1
Ketosis	N/R							
Grass tetany	N/R							
Vaginal discharge	Hard ex-run wk 10							
Lameness	✓✓	2	✓✓✓	3	-	0	-	0
Lactic acidosis	-	0	✓✓	2	-	0	-	0
Displaced abomasums	-		-		-		-	
Culled or died in first 60 days of lactation								
Milk fat %	4-10 %		4-11		4-13		4-12	
Milk protein %	3-41		3-43		3-41		3-41	
Fat:Protein ratio %	1-20		ok		ok		ok	
Average BMCC	313,000		325,000		310,000		295,000	

Tomas + Yvonne 2011

Number of cows	Week 5 Commencing 29/5/11	Wkly Total	Week 6 Commencing 5/6/11	Wkly Total	Week 7 Commencing 12/6/11	Wkly Total	Week 8 Commencing 19/6/11	Wkly Total
Calved		21		20		41		39
Milk fever	✓	2	✓✓✓	3	✓	1	✓✓✓	4
RFMs	✓	1	✓	1	✓	1	—	0
Assisted calvings	✓	1	✓	1	—	0	—	0
Mastitis	✓✓✓✓	4	✓✓✓✓	4	—	0	✓	1
Ketosis	N/R							
Grass tetany	N/R							
Vaginal discharge								
Lameness	✓	1	✓	1	—	0	✓✓✓	3
Lactic acidosis	—	0	—	0	—	0	—	0
Displaced abomasums	—		—		—		—	
Culled or died in first 60 days of lactation								
Milk fat %	4.09		4.10		4.08		4.08	
Milk protein %	3.40		3.39		3.37		3.37	
Fat:Protein ratio %	1.20		ok		ok		ok	
Average BMCC	298,000		288,000		295,000		301,000	

Texas + Yenne 2011

Number of cows	Week 9 Commencing 26/6/11	Wkly Total	Week 10 Commencing 3/7/11	Wkly Total	Week 11 Commencing 10/7/11	Wkly Total	Week 12 Commencing 17/7/11	Wkly Total	Total
Calved		60		18		14		8	400
Milk fever	JJJJJJ	7	JJJ	3	JJJJ	4	-	0	40
RFMs	JJJJJJ	6	JJJJ	4	-	0	-	0	20
Assisted calvings	JJJJJJ	5	JJ	2	J	1	-	0	16
Mastitis	JJJJJ	5	JJJ	3	JJJJ	4	J	1	40
Ketosis									
Grass tetany									
Vaginal discharge			Hard exent	50					
Lameness	JJJ	3	JJJJ	4	JJJJJ	5	JJJJ	4	25
Lactic acidosis	-	0	J	1	JJ	2	-	0	5
Displaced abomasums	-	0	J	1	J	1	-	0	2
Culled or died in first 60 days of lactation									
Milk fat %	4.13		4.14		4.09		4.10		
Milk protein %	3.39		3.39		3.37		3.35		
Fat:Protein ratio %	1.22		ok		ok		ok		
Average BMCC	325,000		328,000		305,000		275,000		

Transition Program Review

Work sheet

Date: 12/10/11

Farm name: Trevor + Yvonne

Client ID:

How well has the transition program implemented on this farm performed? What changes need to be made?

Enter the result achieved for each of the key parameters below and compare it to the target.

1. Pre-calving transition diet fed

	Aim for	Result	Comments
Av. days cows fed diet	21 days	~ 14 days	} Should be longer - early PT recommended
Av. days heifers fed diet	21 days	~ 7 days	
Daily DM intake per cow	10-12 kg/day	11kg	
Diet specifications:			
Metabolisable Energy	>11 MJ ME/kg DM 100-120 MJ ME/day	110MS	ok
Crude protein	14 to 16% DM	~ 15%	ok
NDF	>36%	40%	ok
Calcium	<0.6% DM	0.43%	good
Phosphorus	<0.4% DM	0.67%	But high
Magnesium	>0.45% DM	0.34%	But low
DCAD	<80 mEq/kg DM	-35	Good

Doesn't explain MF issues

2. Fresh cow health problems

	Aim for	Result	Comments
Milk fever	1%	10%	} Too high - feed level risk low. Consumption? problem
RFM's	<4%	5%	
Assisted calvings	<2%	4%	
Displaced Abomasums	<1%	-	
Ketosis	<1%	-	
Mastitis	<5 cases / 100 cows in first 30 days	10 cases/100 cows 1st 30d	Review DCT - few mm. Test seal outs @ dry off.
Grass tetany	0	0	
Lameness	<2% with greater than Score 2	? Wet winter	
Lactic acidosis	<1%	<1%	
% culls (inc. deaths) in first 60 days of lactation	<5%		

3. Milk production, milk quality, herd reproductive performance and body condition

	Aim for	Result	Comments	
Av. litres per cow at first herd test	> last year	✓	ok	
Av. fat % at first herd test	> last year	✓		
Av. protein % at first herd test	> last year	✓		
% of first test cows with a Fat : Protein Ratio >1.4	<40%	25%		
% of first test cows with a Fat : Protein Ratio <1.0	<10%	low		
Body Condition				
Av. Body Condition Score - late lactation/dry off	4.5-5.5	5.3	ok	
Av. Body Condition Score - calving	4.5-5.5	5.2	ok	
Av. Body Condition loss between calving and mating	<0.6 BCS unit	not assessed	Do next season	
Seasonal/split calving herd:				
6-week in-calf rate	>71%	55%	Work to do on improving submission rates + fertility - get transition right + mating programs into place	
3-week submission rate	>86%	80%		
Year-round calving herd:				
100-day in-calf rate	>58%	/		
80-day submission rate	>73%	/		

What happened and what you learnt

What you planned to do	What happened	What you will do differently from now on
1. Feed all cows in transition for adequate time	Cows - 14d Heifers - 7d	Preg test heifers + cows earlier to determine accurate calving date.
2.		Enrol for <u>21 days</u>
3. " "	Some cows didn't get access to feed.	Buy troughs for paddocks
4. Control mastitis with blanket DC7	Strut got lots new cases around calving	Use teal sealant @ dry off.
5. " "		Keep extra paddocks for calving down - hygiened!

Notes



Dairy Australia

Your Levy at Work

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