

Dairy
Australia
Your Levy
at Work



Production System Performance and Risk:

Insights from the TasMilk-60 project (over three very different years)

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Grains2Milk program leader for Dairy Australia





Key messages

- **Profit varies widely within and between all grain/conc. feeding levels (Low/Mod./High) in any given year, and between years**
- **Pasture utilisation, core costs per cow and pasture quality are key profit drivers on all Tas. dairy farms within the farmer's control**
- **Feed conversion efficiency (FCE) is a key outcome of farm management which can't be ignored**
- **High feed intake/cow is a major contributor to high FCE. However, other management factors are also important**
- **Changes to production systems involve adjustments (cows, people, infrastructure) before full benefits are realised**





TasMilk-60 project



A study of 60 farms over 3 consecutive years (06/07, 07/08, 08/09)

Herd size: av. 381 cows

Milking area: av. 153 ha

Calving system: 77% seasonal, 22% split, 1% year round

Breed: 59% Holstein-Friesian, 26% Cross-breds, 9% Jerseys, 6% Other

Feeding category:

Distribution of study farms by grain/conc. feeding rate and year				
Category	Year			Total
	06/07	07/08	08/09	
< 1tn	21	18	17	56
1 to <2tn	26	26	22	74
>=2tn	21	22	18	61
Total	68	66	57	191

Data collected:

Physical features, financial inputs, profit, attitudinal info.

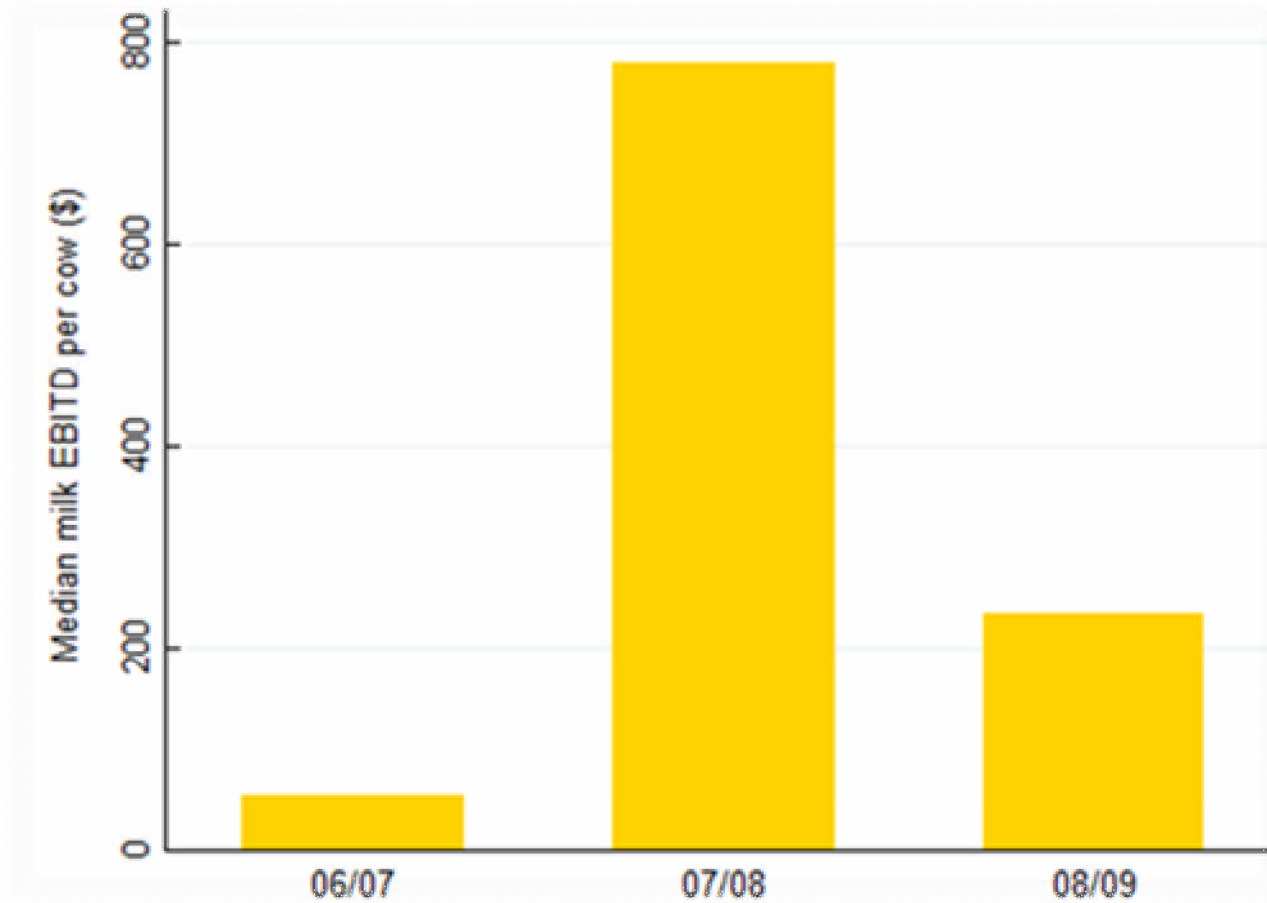




TasMilk-60 project

06/07, 07/08, 08/09: Three very different years

\$:
Milk EBITD
per cow
(56 farms)

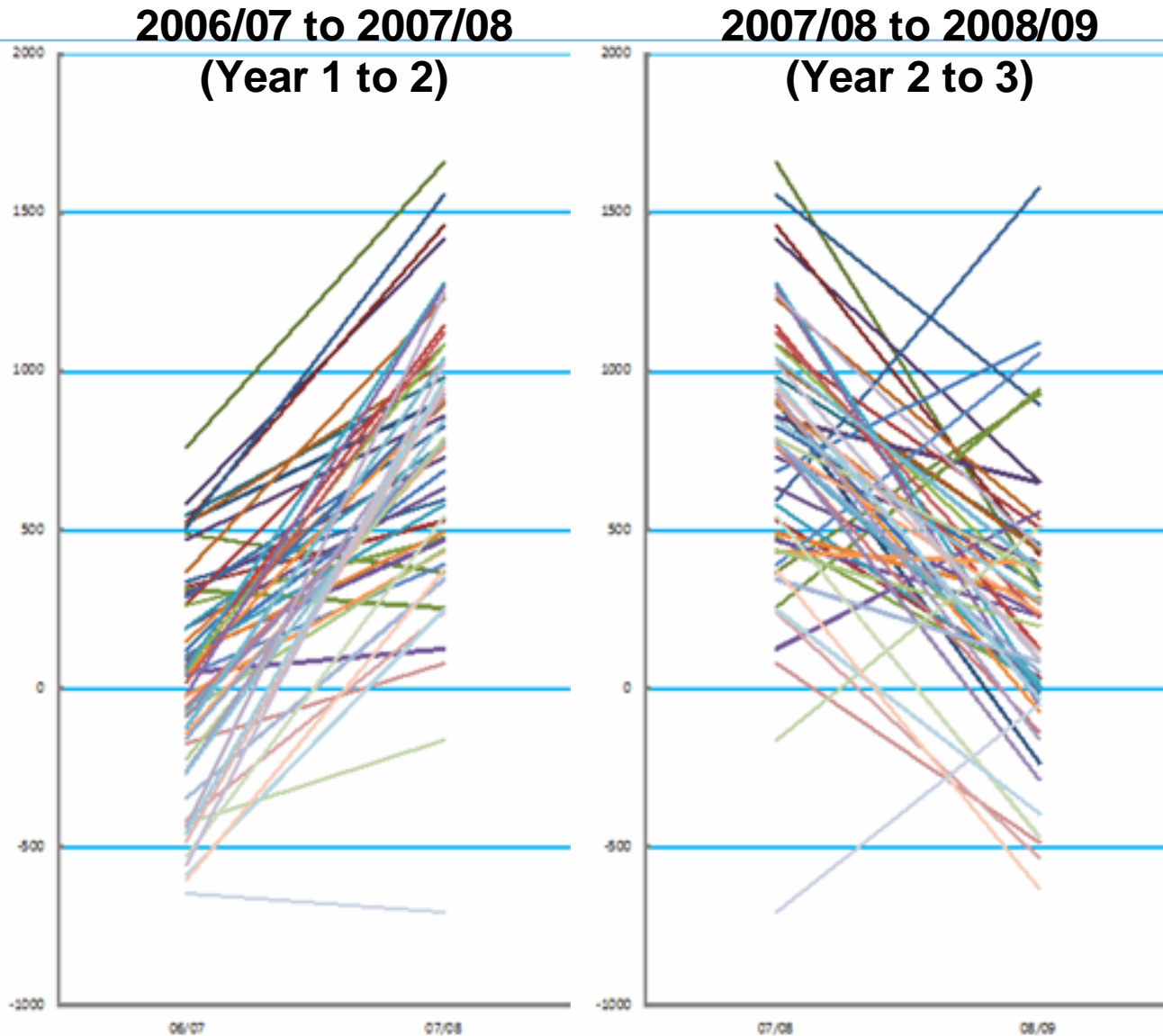




TasMilk-60 project

Consistency of milk profit over 3 years

\$:
Milk EBITD
per cow
(56 farms)





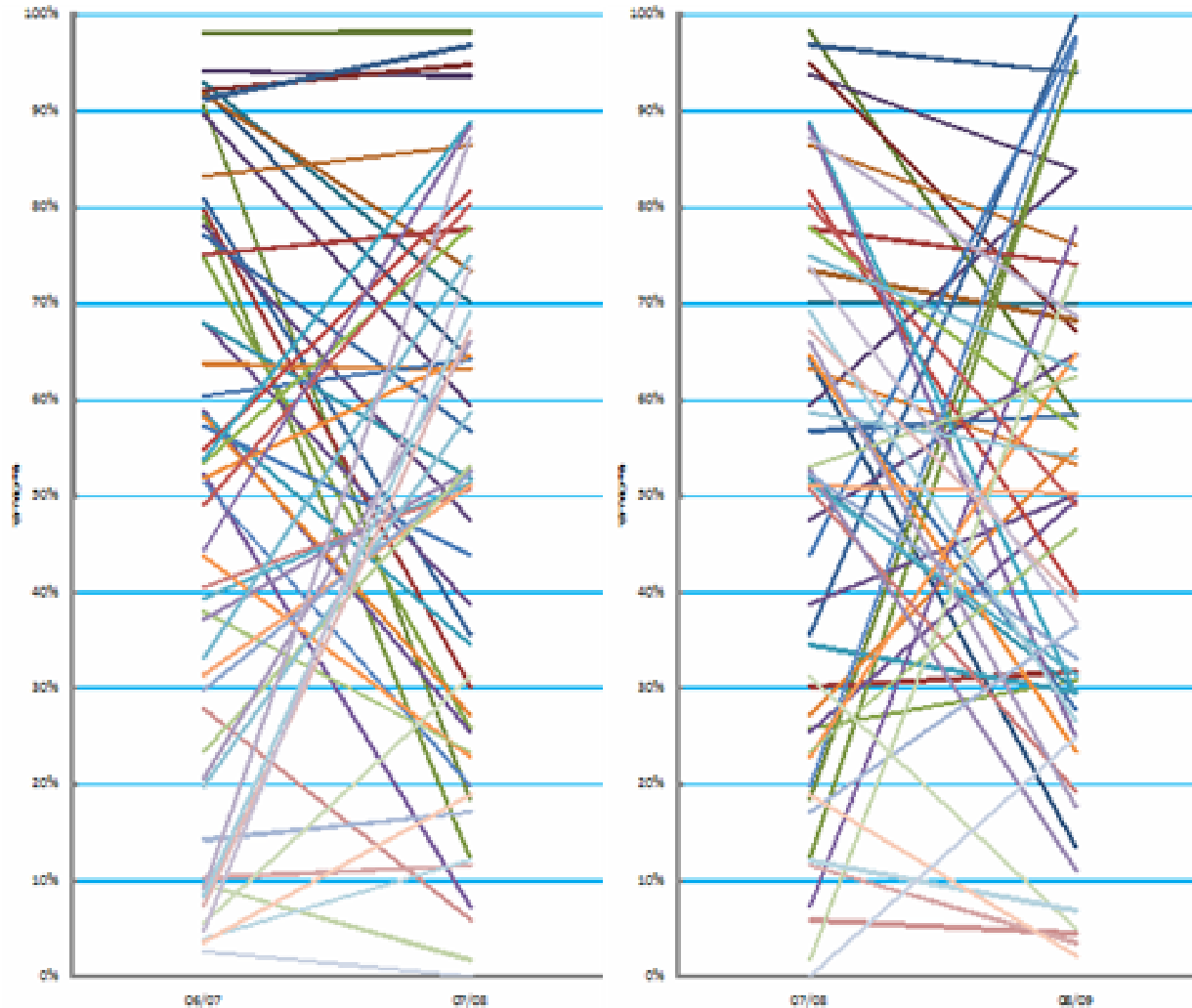
TasMilk-60 project

Consistency of milk profit over 3 years

2006/07 to 2007/08
(Year 1 to 2)

2007/08 to 2008/09
(Year 2 to 3)

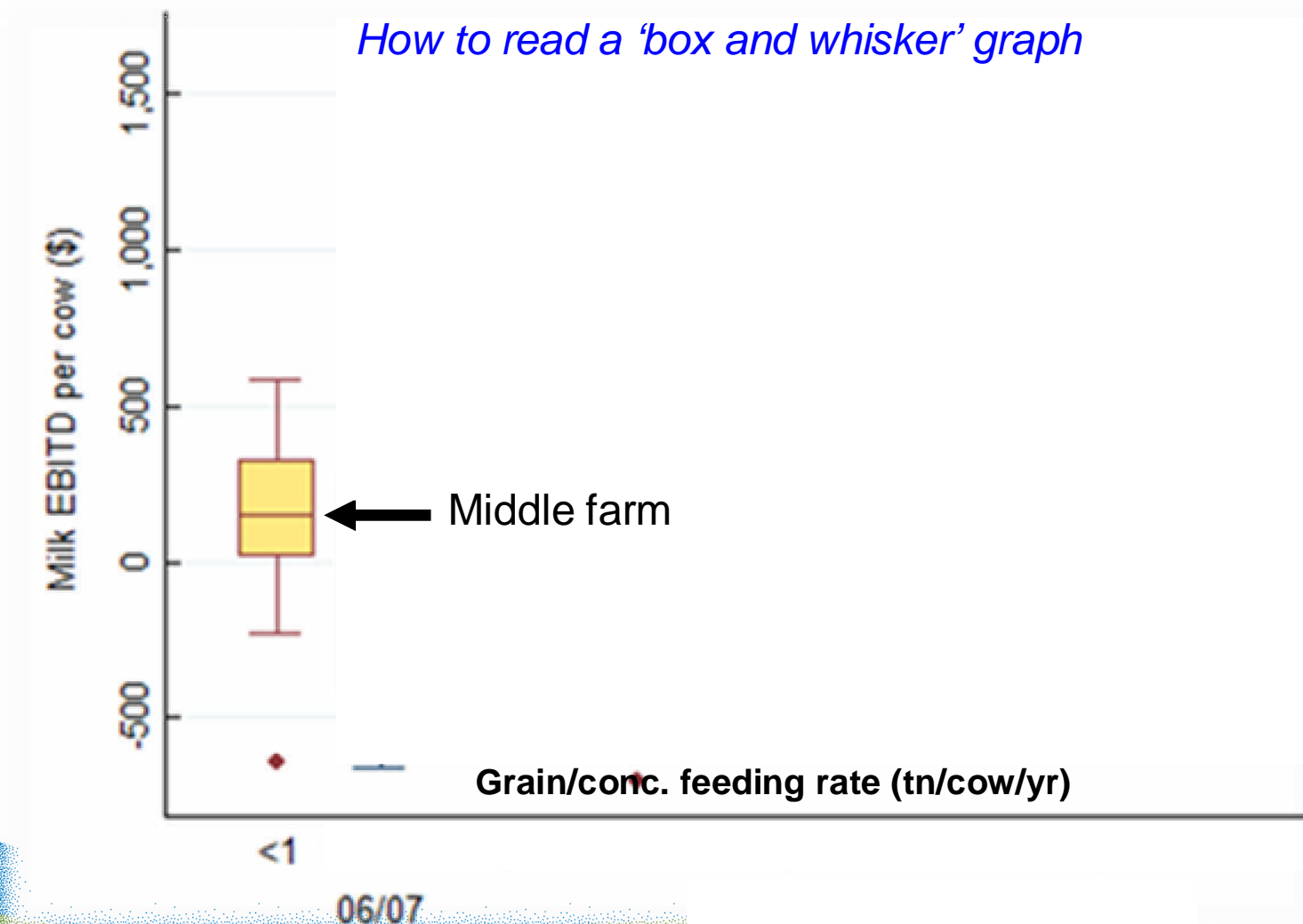
Ranking:
Milk EBITD
per cow
(56 farms)





TasMilk-60 project

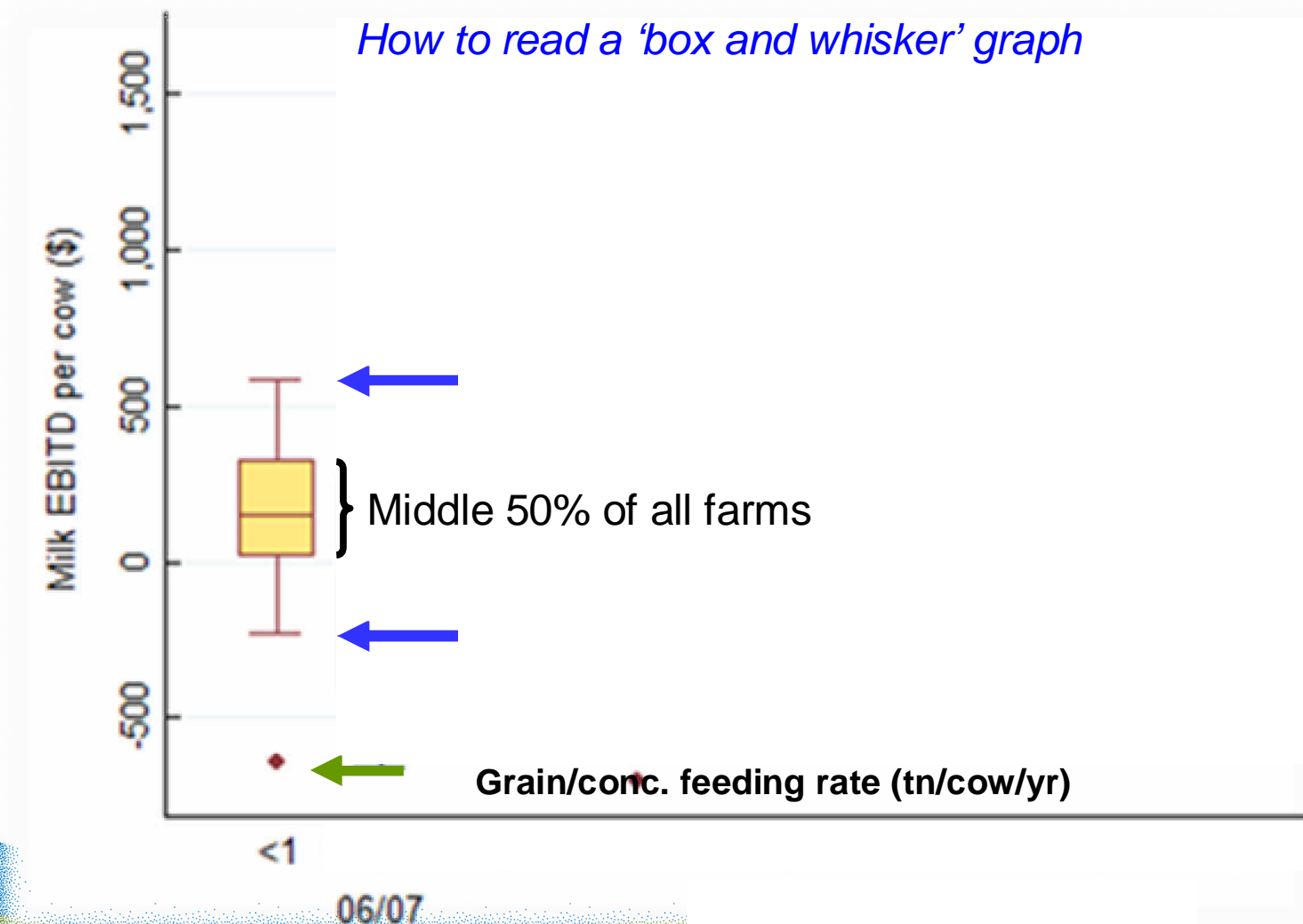
Milk profit by grain/conc. feeding level over 3 years





TasMilk-60 project

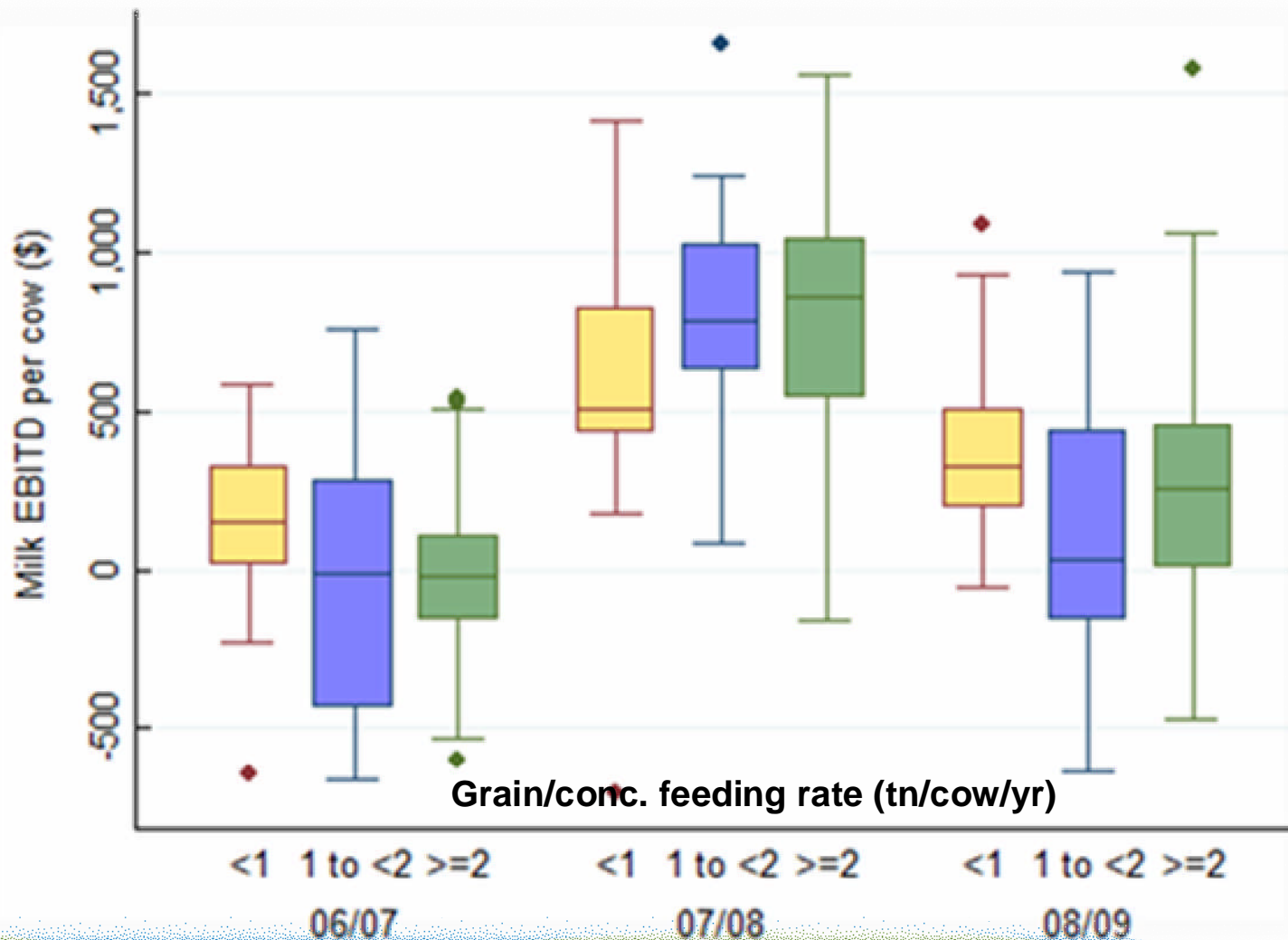
Milk profit by grain/conc. feeding level over 3 years





TasMilk-60 project

Milk profit by grain/conc. feeding level over 3 years





Feed Conversion Efficiency targets

Annual Milker FCE:

		grams MS / kg feed DM	
Feeding system		^ Achievable target	*Take action if less than
1	Pasture + forages + Low grain in bail	75	68
2	Pasture + forages + Mod-High grain in bail	90	83
3	Pasture + PMR +/- grain in bail	100	92
4	Hybrid system	105	98
5	Total Mixed Ration (Zero grazing)	120	109

^ Achievable in well managed systems – min. wastage, good quality feed, min. feed gaps, good rumen function

* Trigger level for action. If your herd's FC is less than this figure, further investigation is warranted.





Feed Conversion Efficiency targets

Annual Milker FCE:

		kgs milk / kg feed DM	
Feeding system		^ Achievable target	* Take action if less than
1	Pasture + forages + Low grain in bail	1.0	0.9
2	Pasture + forages + Mod-High grain in bail	1.2	1.1
3	Pasture + PMR +/- grain in bail	1.3	1.2
4	Hybrid system	1.4	1.3
5	Total Mixed Ration (Zero grazing)	1.6	1.45

^ Achievable in well managed systems – min. wastage, good quality feed, min. feed gaps, good rumen function

* Trigger level for action. If your herd's FC is less than this figure, further investigation is warranted.



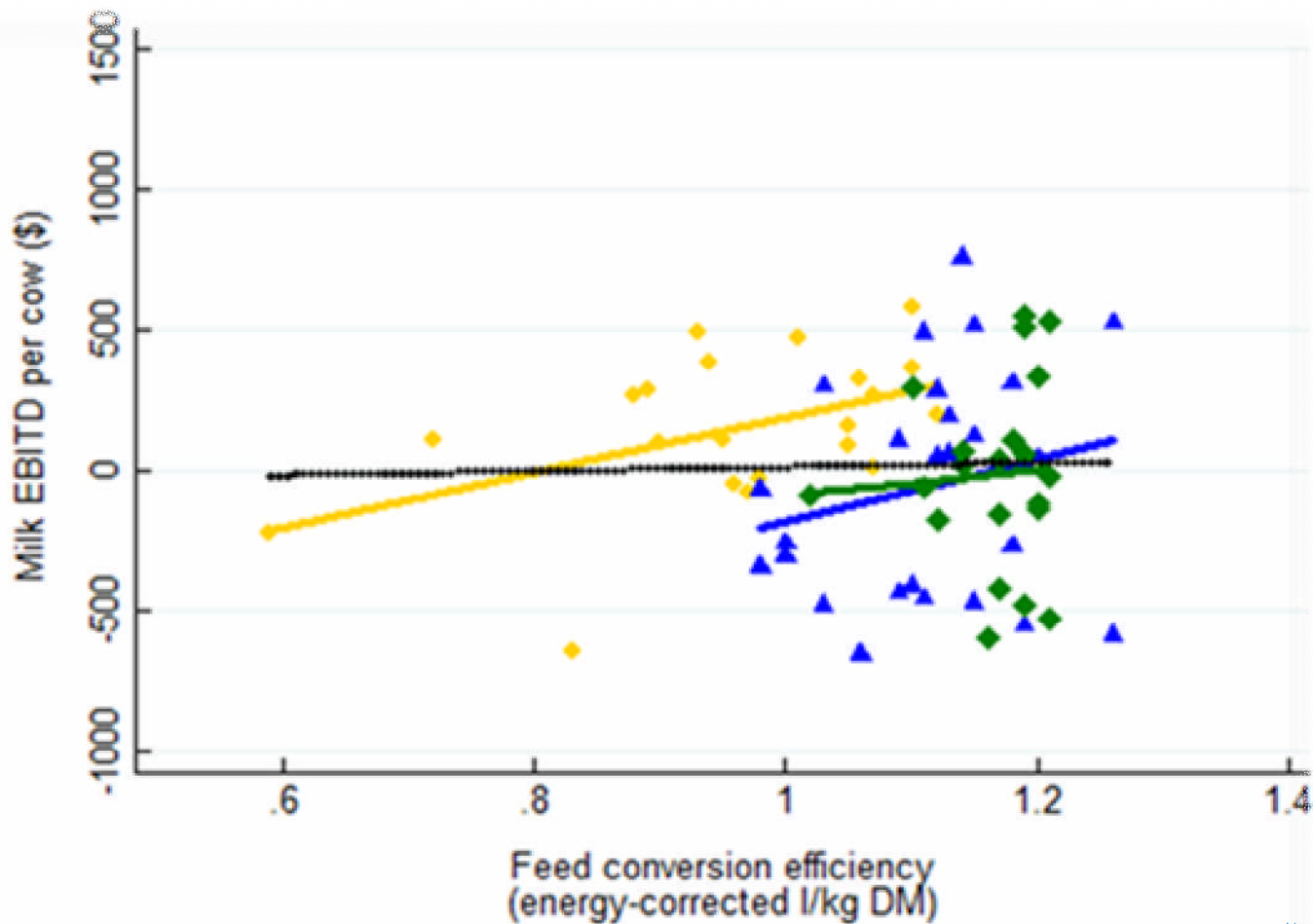


TasMilk-60 project

Feed Conversion Efficiency and Milk Profit

Grain/conc. feeding rate:

● : < 1tn/cow/yr; ▲ : 1 to <2tn/cow/yr; ◆ : >=2tn/cow/yr



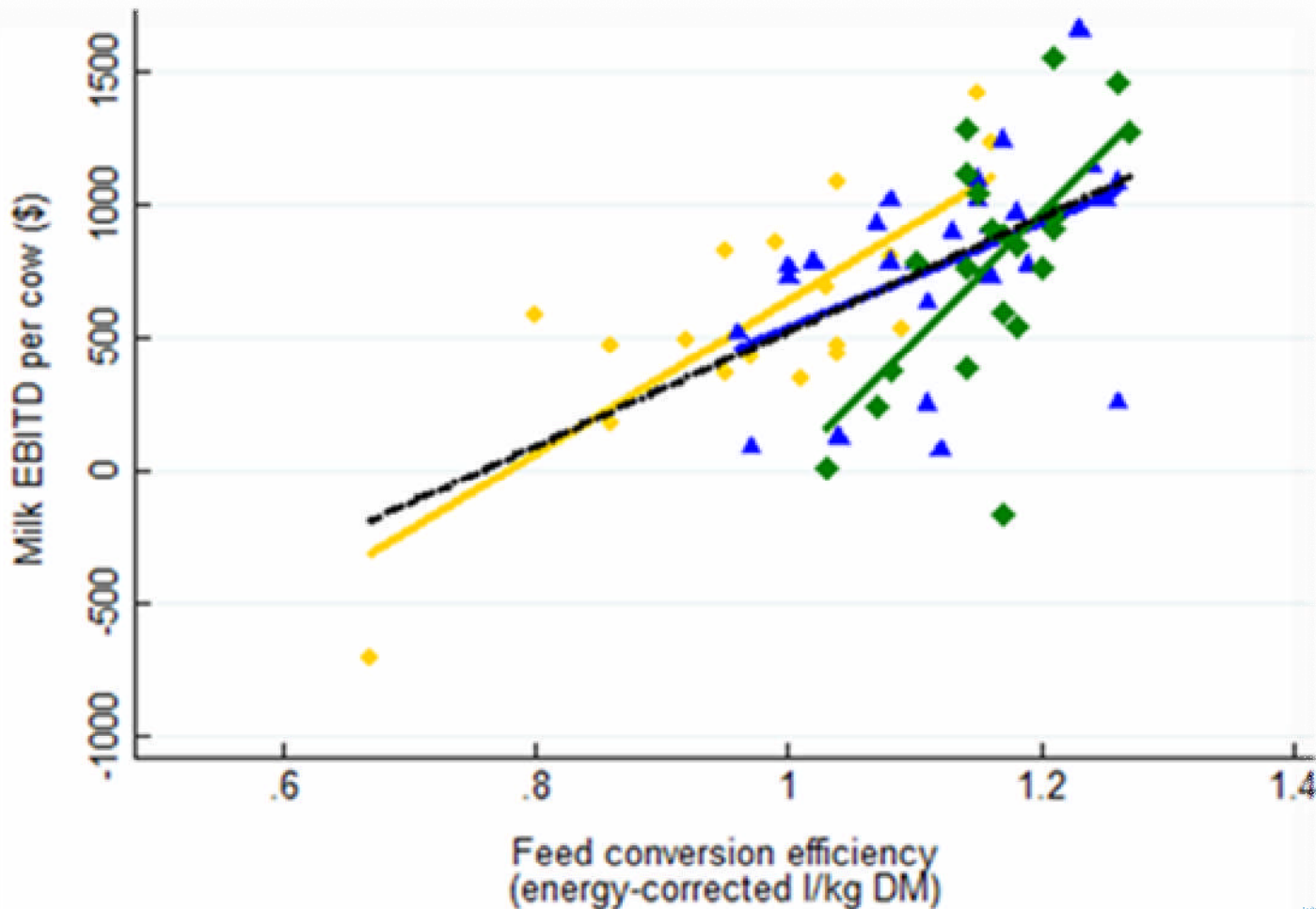


TasMilk-60 project

Feed Conversion Efficiency and Milk Profit

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2007/08
(Year 2)

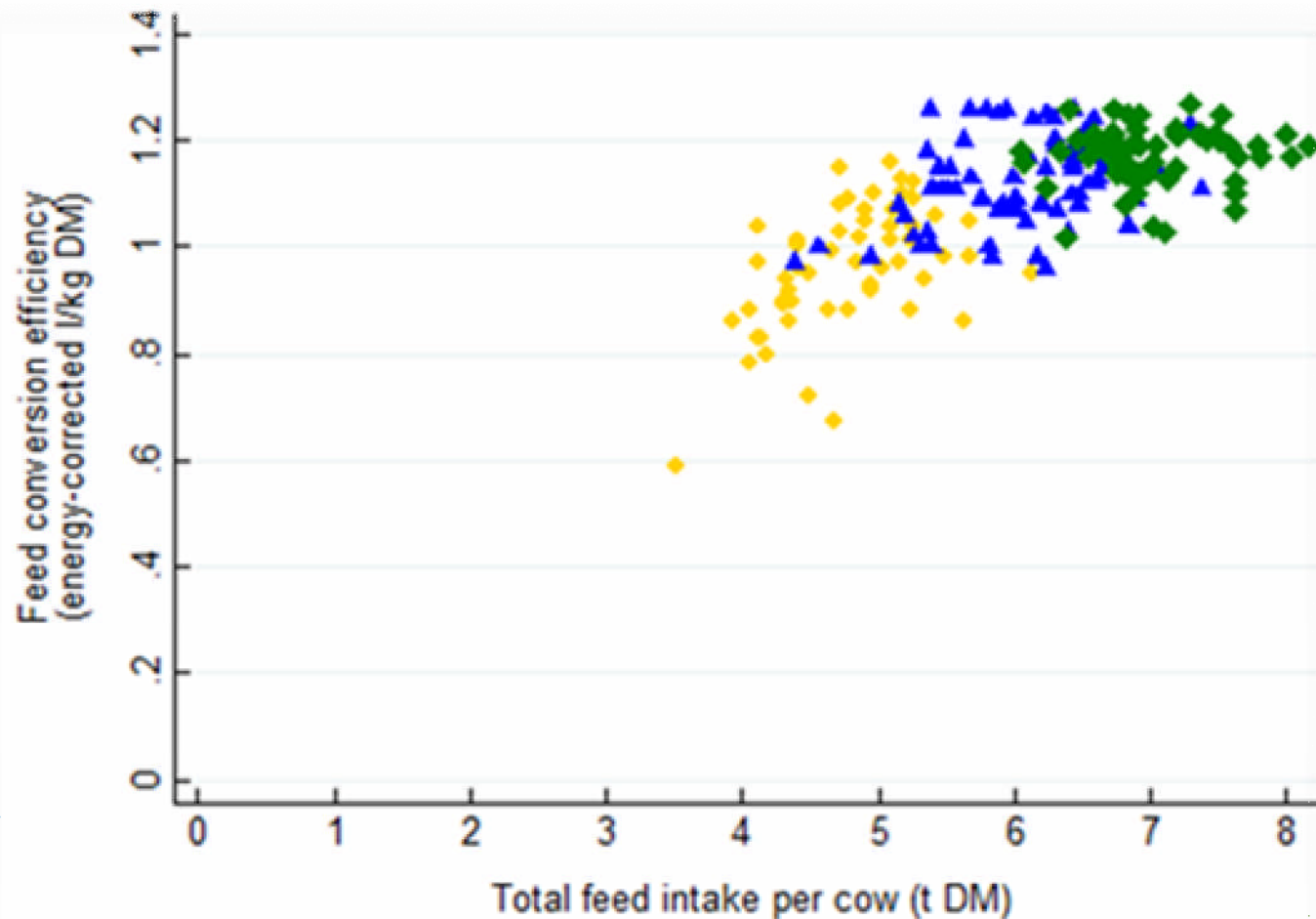


TasMilk-60 project

Feed Intake and Feed Conversion Efficiency

Grain/conc. feeding rate:

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Strategies to optimise FCE

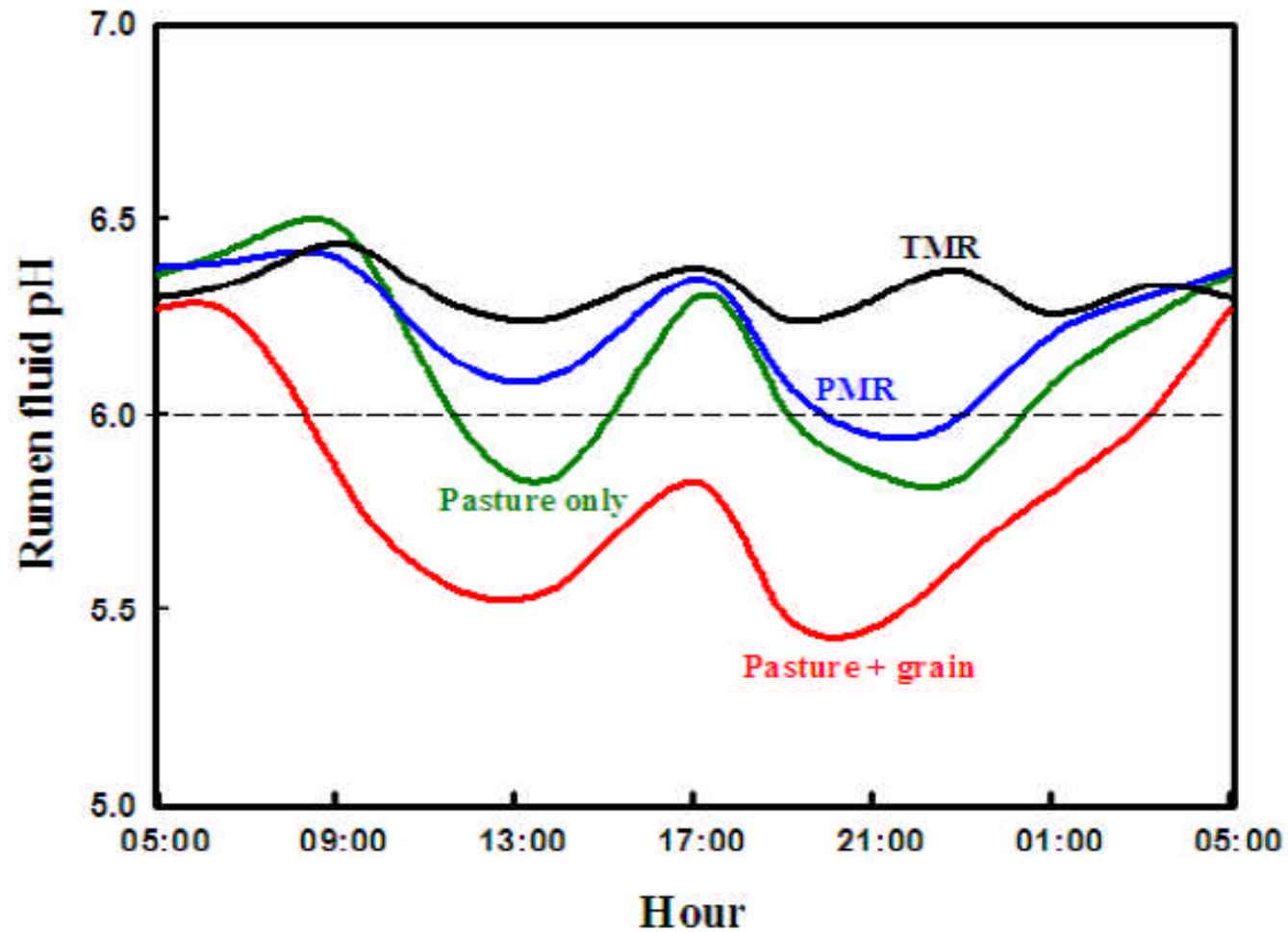
General aims across all 5 feeding systems:

- **Optimise total daily feed intake**
- **Maintain high feed quality**
- **Maintain good rumen function**
- **Minimise feed gaps throughout the year**
- **Minimise feed wastage**
- **Minimise energy losses**





Changes in rumen pH over 24 hour period



(Heard & Wales, DPIV 2009)



Strategies to optimise FCE

System 1:
Pasture + fodder +
Low bail feeding

- Pasture growth
- Stocking rate
- Pasture intakes
- Feed gaps
- Lactation length
- Fibre and saliva
- Energy losses
- Heat stress

+

System 2:
Pasture + fodder +
Mod-high bail feeding

- NDF / starch
- Gradual changes
- Feed additives
- Protein, minerals
- Transition cow mgt.
- Feed wastage
- Corn, 3X milking?

+

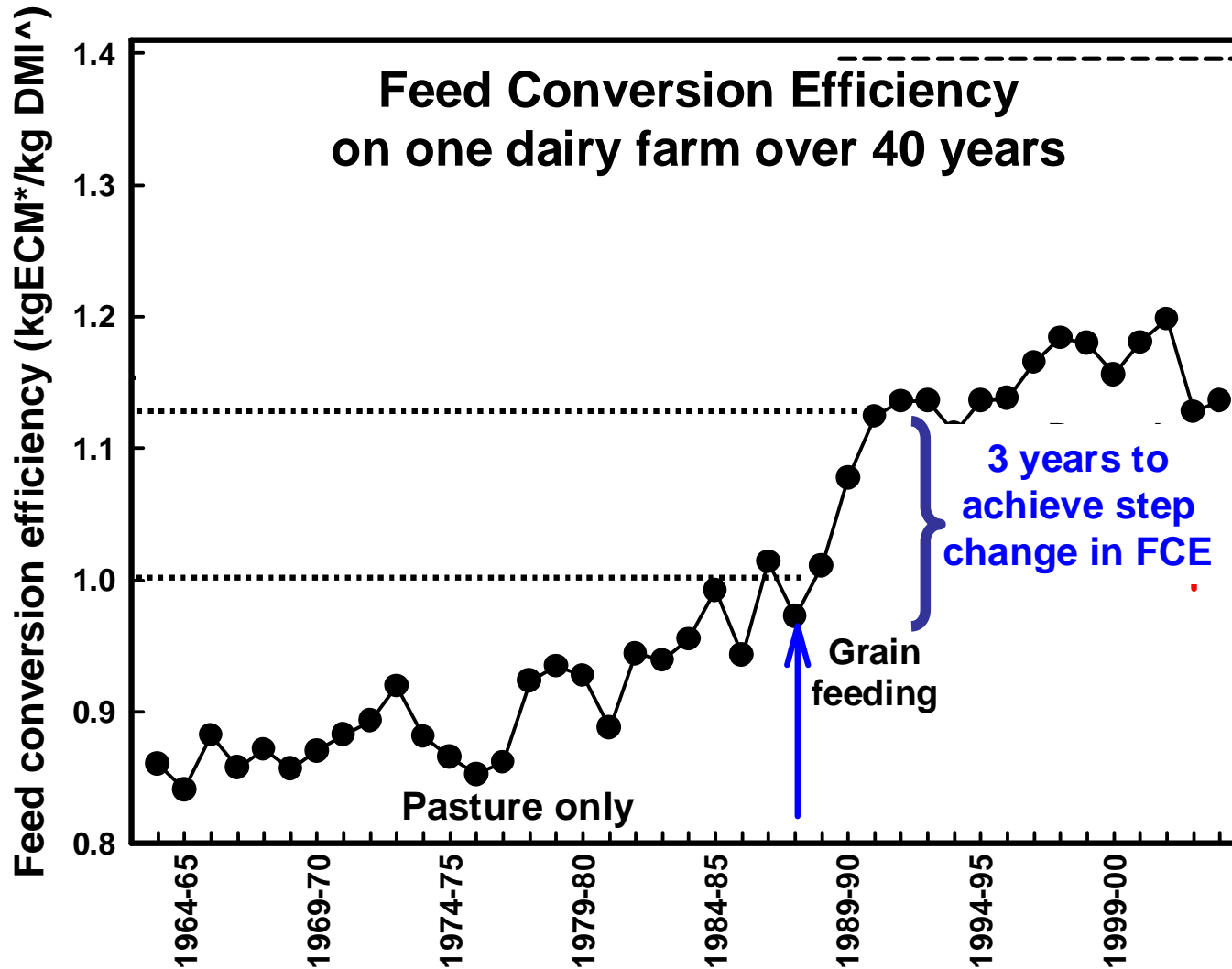
System 3:
Pasture +PMR

- Feed quality
- Diet formulation
- Feed mixing
- Feed pad mgt.
- Timing of feeds





Changing feeding system involves adjustment



* ECM - Energy Corrected Milk

[^] DMI - Annual Dry Matter Intake for milking herd including non-lactating period

(Ho & Wales, DPIV)



Measuring FCE on your farm

PASTURE CONSUMPTION AND FEED CONVERSION EFFICIENCY CALCULATOR

FUTURE FARMING PASTURE CONSUMPTION AND FEED CONVERSION EFFICIENCY CALCULATOR

Home

This spreadsheet has been designed to calculate **annual PASTURE REMOVAL** (t DM/ha) from the milking area of dairy farms, defined as 'pasture consumed by grazing cows plus removal of pasture for hay and silage production'. It also uses a back calculation approach to estimate the **annual FEED CONVERSION EFFICIENCY** of the milking herd. This is defined as either the kilograms of energy-corrected milk or grams of fat plus protein produced per kilogram of dry matter intake over a year. Calculations are based on the Australian Feeding Standards (CSIRO, 2007) and use measured on-farm production parameters.

To use this spreadsheet :

- Click on buttons to navigate around the spreadsheet
- Enter details for the herd in the 'Livestock and Milk' sheet
- Enter details of the herd's diet in the 'Feeds' sheet
- Inputs required are indicated by yellow cells
- Estimated Pasture Removal (t DM/ha) and Feed Conversion Efficiency (FCE) for the farm is provided on the 'Output' sheet
- A 'Summary' page provides a summary of herd and feed inputs and outputs. The summary page can be printed and saved as a stand-alone file (smaller file size)
- Helpful comments are indicated by a red triangle in the top right corner of the cell. Roll the mouse over these areas to read these comments.
- Help files are indicated by the symbol:

**only change data in yellow cells.
the grey buttons can be used to navigate between sheets

VERSION 2.1
Further information on this model can be found in:
Herd et al. (2008). Improved milked cow milk production systems achieved by grazing dairy cows. *Report to Dairy Australia*, November 2008.

DISCLAIMER
This program was produced with the best available information available at the time of its development and with the best intentions of assisting dairy farmers to use pasture and supplements efficiently. However, the state of Victoria and its employees do not guarantee that this program is without flaws or is ideally appropriate for your particular program and therefore disclaims all liability for any errors, loss or other consequences which may arise from any reliance on any

WARNING: The included manual has the following associated ISBNs: ISBN 978-1-74217-547-8 (print) and ISBN 978-1-74217-548-5 (online).

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Online Help

Visit

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www.dairyaustralia.com.au

to download



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Grains2Milk's 3 underlying principles

- 1. Any feeding system can be profitable, given the correct mix of management, milk price and input costs**
- 2. To remain profitable, all systems which include pasture must optimise not only the amount of pasture grown but the amount that is consumed**
- 3. For all systems there is a mix of risk, performance and management principles whose understanding can improve the chances of success**





TasMilk-60 project

Grains2Milk's analysis is continuing

Grains2Milk wishes to thank:

- All the farmers who provided data for the TasMilk-60 project
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- Courtney Gronow (Agrilink Farm Stats. P/L)

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From grains to profit

