Summary

This technical note examines the production efficiency of Queensland dairy farms by comparing production per cow and feed related costs on 54 Queensland dairy farms.

A graph comparing production per cow and feed related costs includes an upward trend line which gives an indication of an average production per cow that can be achieved as feed related costs per cow are increased.

The production per cow when feed related costs per cow are $1,405 (the south east coast grazing average) varies between 4,200 and 6,500 litres per cow or 320 to 470 kg of milk solids per cow.

There is a large potential benefit to farmers who are below the trend line if they were to improve their efficiency. This can be up to $120,615 in extra milk receipts.

Production efficiency can be improved by feeding a high quality balanced diet, culling cows that under perform or are difficult to get in calf, having heifers in good condition and attention to detail. Farmers who have high production efficiency pay attention to details such as cleaning out feed and water troughs regularly, having tidy and comfortable lane ways, adequate shade and good animal management.

Anyone can calculate the two numbers required to plot your own farm on the production efficiency graph. An easier way to do this is to contact Agri-Science Queensland and be involved in QDAS.

Production and feed costs

An interesting outcome of the Queensland Dairy Accounting Scheme (QDAS) 2009/10 was the examination of production efficiency by comparing production per cow with feed related costs per cow. Figure 1 from the 2009/10 QDAS report includes an upward trend line which gives an indication of an average production per cow that can be achieved as feed related costs per cow are increased.

Individual farms can then see if they fall below or above this trend line. QDAS 2009/10 reports that the average feed related costs per cow for the south east coastal grazing farms was $1,405 /cow. By examining this level of feed related costs per cow in Figure 1, the resulting production achieved by farmers varies from 4,200 to 6,500 litres per cow.

There is a large potential benefit to farmers who are below the trend line if they were to improve their efficiency. If a farmer could increase production over time by 1,000 litres per cow, this represents $120,615 in extra milk receipts assuming the QDAS average milk receipts of 56.1 c/L and 215 cows. Even at 45 c/L for milk receipts this represents an increase of $96,750.

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Figure 1. The relationship between feed related costs per cow with production per cow (litres).
Milk solids and feed costs

Figure 1 compares production per cow in litres with feed related costs per cow. Figure 2 repeats this analysis using production of milk solids per cow and shows a similar trend line. Farmers who are paid primarily on milk solids rather than litres should find their position on this figure.

The challenge for farmers who find themselves below either trend line is to increase production per cow by better utilising the money they are already spending on feed.

Feed - the biggest cost

The relevance of production efficiency to farm profitability can be shown by the percentage of total costs made up by feed related costs. Data from QDAS 2009/10 has been used to develop Figure 3. It shows that feed related costs make up 59% of all cash costs.

Feed related costs include purchased feeds and minerals plus the cost of making home grown feed, including fertiliser, fuel, oil, seed, irrigation costs, repairs and maintenance to machinery, contracting expenses and other sundry feed costs.

Room for improvement

The production per cow when feed related costs per cow are $1,405 (the south east coast grazing average) varies between 4,200 and 6,500 litres per cow or 320 to 470 kg of milk solids per cow. A similar variation in production per cow can be seen in the more intensive feeding systems costing $1,750 per cow. At this level, Figure 1 shows production per cow results between 4,900 and 7,900 litres per cow.

While it is unlikely that the farms at the bottom of these ranges could achieve the top production levels due to farm and geographic issues, there is still plenty of room for improvement. If farmers could increase their production efficiency and increase production per cow over several years, even by 500 litres, this would increase milk receipts by $60,308 assuming the QDAS average milk receipts of 56.1 c/L and 215 cows.
Improving production efficiency

Agri-Science Queensland has worked closely with farmers for many years to improve production efficiency, especially feed conversion efficiency. The following strategies to improve production efficiency and help farmers move above the trend line in Figure 1, are taken from several projects including Nutrition Plu$, Forage Plu$ and M5.

Production efficiency can be improved by feeding a high quality balanced diet, culling cows that under perform or who are difficult to get in calf, having heifers in good condition and attention to detail. Farmers who have high production efficiency pay attention to details such as cleaning feed and water troughs out regularly, having tidy and comfortable lane ways, adequate shade and good animal management.

Maximise pasture and forage intake

Home grown forage is the cheapest source of feed for milk production. Aim for maximum daily intake of good quality forage, supplemented and balanced with other feed sources. Allocate sufficient pasture or forage by assessing the dry matter ‘on offer’, and use strip grazing and suitable grazing rotations to manage intake and quality. Check and balance the total diet regularly to minimise daily variation in forage fed.

Conserved forages

The farmers above the trend line have well-made conserved forages that contribute energy, protein and fibre. They are especially good at growing, harvesting, wrapping/storing, and feeding out conserved forage. They also test the quality of conserved forages before feeding.

Promote healthy rumen

To promote healthy rumen function, cows need available water; effective fibre to stimulate cud-chewing and sufficient rumen mat (fibre); plus a consistent supply of balanced nutrients.

Managing concentrate prices

Management of concentrate price becomes more important as the level of feeding increases. Strategies such as forward contracting are used by many farmers above the trend line.

Optimising the use of irrigation

Maximising milk production from irrigation water with the appropriate choice of efficient irrigation systems, forage species, using best practise fertiliser and grazing management is essential.

Good reproduction management

Efficient farmers have good reproductive management so they get cows in calf promptly and avoid feeding late lactation cows at feed levels required by early lactation cows, which reduces production efficiency.

Good staff management

Different management skills are required as labour units are increased – including delegating responsibility, providing access to training and incentives based on productivity and performance. Efficient farmers have regular and open communication with staff. Regular time off for the owner-operator and family is important for a sustainable family enterprise.

Be realistic

Being realistic with the rate of expansion, and doing regular risk analyses, taking into account likely seasonal conditions is essential for efficient production and growth. Anyone who is below the trend line should fix their efficiency problems before they consider expansion or intensification of their business.
How efficient are you?

Anyone can calculate the two numbers required to plot a farm on the production efficiency graphs. Choose a 12 month period (QDAS uses financial year) and collect the following information.

Feed related costs include purchased feeds and minerals plus the cost of making home grown feed, including fertiliser, fuel, oil, seed, irrigation costs, repairs and maintenance to machinery, contracting expenses and other sundry feed costs.

Milk production is taken from a processor annual milk statement, either as litres or milk solids (kg of fat and protein).

Both of these figures are divided by the number of cows. This is the average number of milking plus dry cows on hand over the year.

An easier way to do this is to contact Agri-Science Queensland and be involved in QDAS. It is a simple and free financial analysis system. See the More Information section on this page for more details.

![Figure 4. Plotting the production efficiency of a farm using production per cow and feed related costs per cow](image)

Further information

Contact the DAFF Customer Service Centre by Phone 13 25 23, or Email callweb@daff.qld.gov.au

More technical notes can be found at: [www.dairyinfo.biz](http://www.dairyinfo.biz)

**QDAS**

The annual QDAS report provides an insight into physical and financial indicators for dairy production systems across Queensland. It examines the gross margins and indicator trends for regional production systems across Queensland. A copy of the report can be found at: [www.dairyinfo.biz](http://www.dairyinfo.biz)

**Nutrition Plu$**

Nutrition Plu$ information on how to improve feed conversion efficiency can also be found at: [www.dairyinfo.biz](http://www.dairyinfo.biz)

**M5**

The M5 project has a wealth of information on all dairy production systems in Queensland and can also be found at: [www.dairyinfo.biz](http://www.dairyinfo.biz)

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While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained in this report.

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