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## Designing dairying to be profitable with low milk prices

### Summary

Current dairy design is unsuited for conditions with low and variable milk prices.

This paper provides a dairy design, based on research, that ensures that low risk, profitable dairying is possible in most seasons.

The research presented shows that a profitable design requires predominantly home grown, grass based feed with robust, moderate milk production cows. Majority of research shows that lowering stocking rates increases profit and lowers risk.

Contemporary grazing management that increases landscape function (increasing perennial grass density and basal area with decomposing litter in the inter-tussock space) increases nutrient cycling lowering the need for high levels of inputs.

### Feeding

#### Key points

- High feeding levels (less than 40% directly grazed pasture) are not profitable with low operating margins.
- With low milk prices only feeding on the shoulders of the season are profitable

*“What this data shows is that capital return on farms with highly intensive feed systems is extremely sensitive to milk price and feed price. This is a consequence of their very low operating margins. When milk prices high and feed price low, these farms can generate a very good capital return. In an Australian context, the historical average milk price has been too low to support this type of farm”<sup>1</sup>.*

The research is clear, feeding only makes significant margin when carried out to extend lactation's, supplementing on the shoulders of the season<sup>8</sup>.

*“Shoulder season feeding of supplement offers a better opportunity to achieve a profitable response from feeding supplements as shoulder season feeding extends lactation. As there are no additional overhead costs, the returns from shoulder season feeding do not incur any hidden costs<sup>8</sup>”.*

The reliance on external feed increases and exposes the dairy business to higher risk<sup>1</sup>.

The following statements are based on research from Australia and New Zealand. All statements can be supported by references



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- Dairy stocking rates far exceed the optimum for low risk, profitability
- Quantities of bought in feed far exceed the optimum for profitability
- Overheads associated with this bought in feed compounds costs
- Cows bred on a single trait focus of milk production has produced animals that are unable to maintain themselves without large amounts of feed especially when dry.
- Moderate production cows are the most profitable
- Pasture recovery periods are too short to allow perennial grasses to regenerate their root reserves while at the same time providing excess non-protein nitrogen placing cows in energy deficit and lowering fertility

## Stocking rates

One of the largest blockages towards low-risk, profitability appears to be the consequence of stocking rates being too high.

Research by DPI in south-west Victoria concluded, in part, that “irrespective of the direction of change in herd size, the most profitable options involved reducing stocking rate per hectare and reducing purchased supplementary feed compared with the status quo”<sup>3</sup>.

Research by Paul Bethune in his Nuffield scholarship showed that as we intensify dairying other costs rise significantly. *Other costs refer to operating and capital costs like labour, silage pits, electricity, repairs and maintenance. These costs are often not budgeted for accurately in the planning phase. The further you intensify, the higher the cost of production. This trend is dubbed the fixed cost creep*”.<sup>4</sup>

Modelling research and a trial on Lincoln University Dairy Farm, New Zealand<sup>6</sup> has shown that the de-intensification will lead to increased profitability as costs will fall faster than revenue. This work is one of the few times that models and theories have been confirmed in practice which should be the gold standard for dairy economic research. Although the Lincoln University dairy farm was in top 2 to 5% of New Zealand dairy farms for operating surplus per hectare the theoretical changes driven by:

1. reducing cow numbers
2. increasing milk solids per cow

Leading to increased profitability by 15% and to the surprise of the researchers, total milk production increased demonstrating that overstocking was holding back the business.

*“The most profitable, least risky regimen was matching feed demand (herd number) with feed supply to improve production per cow through efficient use of pasture.... It showed improving technical and economic efficiency”*.<sup>5</sup>

The push by dairy factories to increase their plant utilisation and even out supply has resulted in further exacerbating the focus on bought in feed. Intensification of stocking rates has resulted in increased risk increased exposure to feed prices



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increase damage to pastures increased costs increased animal health problems et cetera

Research using dynamic budgeting clearly shows that as dairy farms intensify profitability goes down costs go up and risk increases. For low risk profitability, dairy farms, must de-intensify.

## Cows

Another large blockage to progress towards low-risk, profitability is the consequence of selecting cows for high milk production. The following summary from research by DairyNZ<sup>2</sup> is clear and unambiguous.

### Summary

- *Genetic selection has resulted in bigger cows that produce more milk.*
- *The increase in milk production is through a combination of greater body condition score loss and less energy partitioning to body condition score gain, and lower substitution rate of supplements for pasture.*
- *Supplements will not improve reproduction unless cows have restricted access to pasture (i.e. pasture residuals are less than 1,500-1,600 kg DM/ha).*

The increase in milk production is provided by the animals by sacrificing body condition score. This needs to be paid back when these cows are dry and by having shorter lactations to increase body condition score to get them back in calf.

Paul Bethune's Nuffield paper contains research showing that the most profitable cows are moderate producers not high producers.

## Grazing management

The above topics are fully researched and readily available for anyone looking to design a profitable, low-cost, low-risk dairy business.

Less well studied is the impact of current grazing management. Current dairy grazing management which can be summarised as grazing perennial ryegrass early at 2.5 to 3 leaves, re-sowing every five years (20% of milking area per annum), high phosphorus and nitrogen inputs, herbicides and insecticides with very low landscape function. The consequences of this type of management are poorly understood but recent research<sup>9</sup> has shown that using contemporary grazing management principles will increase nutrient cycling, water infiltration and soil stability.

These changes can reduce fertiliser costs, eliminate herbicides and insecticides as well as re-sowing.

A summary of this grazing management is that perennial ryegrass should not be grazed until at least the four-leaf stage to produce litter that if managed well increases nutrient cycling and water infiltration.



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## Changing Grazing Management

### Steps

1. Decide level of landscape function required to reduce risk and lower costs
2. Use small safe to fail trials to determine recovery, plant utilisation, and animal impact required to produce this level of landscape function
3. Manage grazing using the observations from the practice areas
4. Monitor animal performance and landscape function
5. Replan based on monitoring

### References:

1. Victorian dairy industry milk supply trends - Analysis of the drivers of farm profit
2. Feeding the modern dairy cow - is pasture still enough, John Roche and Jane Kay, DairyNZ, Hamilton, NZ
3. The impact of system changes to a dairy farm in south-west Victoria: risk and increasing profitability, (Heard et al, 2012)
4. Patterns of profit in the Australian dairy industry, Paul Bethune, 2005, Nuffield scholarship.
5. Milk, money, muck and metrics: inefficient resource allocation by New Zealand dairy farmers, Ridler et al, 2010
6. The intensification of the New Zealand dairy industry – Ferrari cows being run on 2 stroke fuel on a road to nowhere? Fraser, Ridler & Anderson
7. DairyNZ FeedRight – Busting the myths on cow nutrition, Jane Kay et al, 2015
8. Benchmarking-Key Drivers for Successful Dairy Businesses, Newman et al., 2009?
9. Communities in Landscape's project Benchmark Study of Innovators, Ampt et al., 2011