

# Making Money from Supplements in a Low Payout Environment. Getting Your System Running Better

Ian Williams, Pioneer Brand Products

A wise man once said “Don’t make major life changes when you are feeling on top of the world or at the bottom of your world as both states of mind tend to be fleeting”. The same can be said for farm systems. When we look at the data coming from the Economic Farm Survey, while there is some variation between systems (Table 1), there is greater room for improvement within a system (Figure 1).

Input system	Low	Medium	High
Profit/ha (\$)	1811	2004	2202
ROA (%)	6.34	6.31	7.02
Equity growth (%)	6.57	6.87	8.50
Closing term liabilities (\$/kgMS)	19.42	18.75	18.78

Table 1. Economic Farm Survey summary of data averages by input system (2005/6-2014/15).

This table shows that on average, over the last 10 years, higher input systems had higher profit/ha, more equity growth, slightly higher return on assets, and about the same level of financial risk as either the medium input on the low input group.

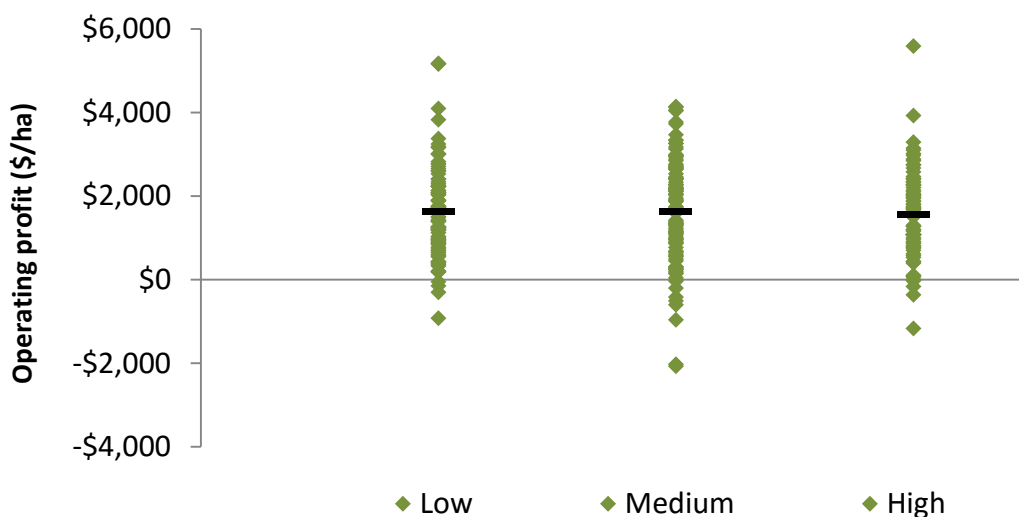


Figure 1. Variation in net profit/ha by input group for the 2014/15 season (Source: DairyNZ Economics Group).

However, while the data in Table 1 doesn’t lie, Figure 1 shows quite clearly that there is more room on most farms to improve the performance of their current system, as opposed to changing systems.

## Making money from supplements in a low payout environment

To make money through feeding supplements in a low payout environment, there are four questions that need to be asked. These are:

1. Is there a feed related problem in the first place?
2. If so, how much feed do I need to use to fix the problem?
3. What type of feed do I need?
4. Will it make me any money?

### Is there a feed-related problem in the first place?

Is the problem too much or too little feed, or is there enough feed but it's wrongly distributed throughout the year? DairyNZ's Facts and Figures for NZ Dairy Farmers booklet has a really helpful table which enables you to get some idea as to your ideal stocking rate for the level of feed you can produce on farm (see Table 2.).

Annual requirements tonnes DM/cow/year at 11.0 MJ ME/kg DM								
Breed	kg Lwt	Milk solids production (kg MS/cow/year)						
		250	300	350	400	450	500	550
Jersey	350	3.7	4.0	4.4	4.7	5.1		
Jersey	400	3.9	4.2	4.6	5.0	5.3	5.7	
J x F	450	4.2	4.5	4.9	5.3	5.6	6.0	6.4
Friesian	500	4.4	4.8	5.2	5.5	5.9	6.3	6.7
Friesian	550		5.0	5.4	5.8	6.1	6.5	6.9

*The annual requirements include walking 4 km/day on the flat for 270 days in milk per cow.*

Table 2. Annual feed requirements per year for pasture-based dairy cows (DairyNZ, 2012).

This means that if your 500 kg cow is producing 450 kg MS/year, that cow will need to be offered 5.9 t DM. If your 100 ha farm grows on average 15 t DM/ha/year (pasture and crop) then your stocking rate should be:

$$15 \text{ t DM/ha} \div 5.9 \text{ t DM/cow} = 2.5 \text{ cows/ha} \times 100 \text{ ha} = 250 \text{ cows.}$$

This is the 'ideal' stocking rate if the farm grew the same amount every year, but data shows that on-farm variation can be 4-8 t DM/ha/yr either side of the average.

Let's say that rather than running 250 cows, the farm has 300 cows (3 cows/ha), because you don't like making pasture silage and would rather harvest the grass with cows. If this was the case you would need to bring in the following amount of feed:

$$300 \text{ cows (actual SR)} - 250 \text{ cows (ideal SR)} = 50 \text{ cows} \times 5.9 \text{ t DM/cow} = 300 \text{ t DM bought in.}$$

### How much feed do I need to bring in?

In the above example, assuming 15 t DM/ha, you would need to bring in 300 t DM in an average year. Let's assume that the farm will grow 13 t DM/ha in a terrible year or 17 t DM/ha in a great year.

In a terrible year, the farm would need to bring in 500 t DM and in a great grass growing year the farm would need to bring in only 100 t DM.

## What feed should I use?

Most farms simply need more energy. Dr. Eric Kolver showed this quite clearly in Table 3.

Nutrients first limiting milk production on high quality pasture diets	
litres milk per cow per day	Nutrient first limiting production
20	Energy
25	Energy
30	Energy + protein
35	Protein

Table 3. Nutrient limiting milk production in a pasture based diet (Kolver, 2001).

The other question that needs to be asked, is what are you trying to achieve with the feed? Does it need to fill a feed gap in spring or autumn, does it need to fill a summer protein deficit or does it need to help prevent over grazing? Does it need to put weight on cows or extend round length? The answer to these questions will determine what will be the best supplement to feed.

### Is it profitable?

This is the \$60 million question. As a broad principle how much money you make is determined by what you paid for the supplement, how much milk you get when you feed the supplement and what you get paid for that milk.

Profitability will be optimised when the following conditions are met:

1. Pasture and crop eaten are optimised for the farm.
2. Target grazing residuals are being achieved (i.e. pasture isn't being wasted).
3. Key animal targets are being met (e.g. BCS 5 and 5.5 at calving).
4. Supplement feeding is strategic (i.e. feed deficits are being filled).
5. Supplements are bought and fed at the right price.

If we use the example of the 100 hectare farm milking 300 cows, we assume that we are not wasting feed and that we are filling feed gaps in late lactation, then we can expect to get a milk response somewhere between 80-100 g MS/kg DM. If the feed cost 26 c/kg DM (fed) and the payout is \$4.50/kg MS, then for every 1 kg DM fed the return will be between 10 – 19 c/kg DM fed. It is calculated like this:

Milk produced = 100 g/kg DM supplement fed

Milk price = \$4.50/kg MS

Milk return = 100 g/kg DM fed x \$4.50/kg MS = 45 c/kg DM fed

Feed cost = 26 c

Gross margin = 45 c – 26 c = 19 c

If the farmer was feeding 4 kg DM/cow/day, then every day the farm fed supplements it would be making:

300 cows X 4 kg DM X 19 c/kg = \$228/day

This is pretty rough and ready but DairyNZ has a feed price calculator on their website which is more in depth and you may find it helpful. The link is as follows:

<http://www.dairynz.co.nz/feed/feed-management-tools/supplement-price-calculator/>