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A SUBMISSION TO THE ACCC INQUIRY

into

THE AUSTRALIAN DAIRY INDUSTRY

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CONTENTS

1. MILK PRICING - A BRIEF HISTORY

Milk pricing has been a contentious and confusing issue for dairy farmers for quite a long time.

In more recent times (e.g. the past decade), the pricing history for dairy companies operating in south-west Victoria has been as follows :-

Fonterra

In 2006/07, Fonterra offered its suppliers in SW Victoria no less than 6 pricing options, under the title(s) of :-

i) spring price (flat price throughout)
ii) 7/5 December
iii) 7/5 March
iv) 7/5 April
v) Traditional Seasonal price
vi) Fonterra Milk Australia (FMA) for ex Nestlés suppliers

and that situation continued through until the end of 2008/09.

In 2009/10, the number of pricing options was reduced to 4, under the titles of :-

i) 7/5 December
ii) 7/5 April
iii) Seasonal
iv) FMA for ex Nestlés suppliers

and that situation continued through until the end of 2013/14.

For 2014/15 and subsequently, Fonterra offers one pricing option - but that option pays a much lower price for "spring" production (August to December production), and higher prices for "out of season" production (January to July) - in 2014/15, up to 28% higher, in 2015/16, up to 29% higher, and in 2016/17, up to 36% higher.

That pricing policy sends a clear signal to producers that the company wants them to produce "out of season" milk.

In addition to base monthly milk prices, the company pays monthly and annual quality incentives, and production incentive payments calculated on a sliding scale.

The company's literature clearly states that the 2016/17 pricing model "……. rewards your efforts to produce milk out of season".

Murray Goulburn

In contrast to Fonterra, over the period 2006/07 to 2009/10, MG offered its suppliers one milk pricing option. In each year, the pricing option paid a higher price for "out of season" milk - in 2006/07 up to 32% higher, in 2007/08 up to 24% higher, in 2008/09 up to 35% higher, and in 2009/10 up to 58% higher.

In 2010/11, MG introduced three (3) pricing options, titled :

i) Traditional
ii) Seasonal
iii) Domestic

and those options continued through until the end of 2012/13.

In 2013/14, MG reverted to a single pricing option and has maintained that policy until the present time. However, that single pricing option still pays a much lower price for "spring" milk and a higher price for "out of season" milk - in 2013/14 up to 19% higher; in 2014/15 up to 17.5% higher; in 2015/16 up to 29% higher; and in the current season up to 23.5% higher.

The quoted base monthly milk prices assume the supply of premium quality milk. Monetary penalties then apply (i.e. a price reduction) for milk that fails to meet premium quality requirements.

In addition to base monthly milk prices, MG pays a productivity incentive calculated on a sliding scale (the higher the production, the higher the production incentive payment), and also offers, in addition, a Flat Milk Incentive payment for suppliers who produce a sufficient proportion of their total milk (in excess of 40%) in "out of season" months. As well, MG also offers a Milk Growth Incentive as an encouragement to suppliers to increase their total production.

Warrnambool Cheese & Butter Factory (WCBF)

From 2006/07 until 2010/11, WCBF offered its suppliers just one pricing option. But within that option, prices paid for "out of season" milk relative to "spring" production were from 35% to 53% higher, depending on the particular year.

In 2011/12, WCBF introduced two (2) pricing options, titled :

i) Seasonal
ii) Flat

But, in the opening price letter, the company clearly stated that "…….Regardless of the payment structure elected for payments during the year, all suppliers will be paid at year end under the system that provides the highest total income for the year".

Both pricing systems pay a higher price for "out of season" milk (January to July) than for "spring" milk. For example :-

2011/12 - up to	26.7% higher
2012/13	30% "
2013/14	23.3% "
2014/15	N/A
2015/16	24% "
2016/17	29% "

As for MG, the quoted base monthly milk prices **include** a monthly milk quality payment and an annual milk quality payment.

WCBF also pay a productivity incentive, calculated on a sliding scale, a MILK Growth Incentive, and a Flat Milk Supply incentive for suppliers who produce a sufficient proportion of their total production (in excess of 39%) in "out of season" months (July, February, March, April, May, June).

Bega Cheese

Bega Cheese commenced collecting milk from dairy farmers in SW Victoria from mid-2010.

Bega offered two (2) pricing options, titled :

i) Traditional
ii) Seasonal

For seasons 2010/11 to 2012/13, the Traditional pricing system offered **higher** prices for butterfat in the spring months and lower prices for butterfat in "off season" months - but that was offset to a degree by **lower** prices for protein in the spring months and higher prices for protein in the "off season" months.

The Seasonal pricing option was along similar lines to other companies - lower in spring for both butterfat and protein, and higher in "off-season" months, with a difference between lowest price months and highest price months of approximately 32% for 2010/11 and 2011/12, and approximately 38%-40% in season 2012/13.

In 2013/14, the two (2) pricing options were re-named Milk Payment System 1 (MPS1) and Milk Payment System 2 (MPS2), but, in essence, the two "new" pricing systems were similar to the old pricing systems except for the fact that the order was reversed :

Traditional became MPS2
Seasonal became MPS1

For the new pricing system MPS1 (previously Seasonal), the difference between lower spring prices and the highest price month was :

2013/14	approximately 31%
2014/15	" 29%
2015/16	" 27%
2016/17	" 27%

Bega also offers a Productivity Incentive payment calculated on a sliding scale, and a Milk Growth Incentive scheme.

Australian Consolidated Milk (ACM)

In about mid-2014, ACM began sourcing milk in SW Victoria.

ACM offers one pricing system, and whilst prices for spring production (September to December) are lower than for other months, the difference between spring prices and "out of season" prices is not as great as for the other companies. For example, the difference between the lower spring price and the highest price month was :-

2014/15	approximately	15%
2015/16	"	18%
2016/17	"	19%

As far as I'm aware, ACM do not pay production incentive payments on milk growth incentives, but may pay step-ups during the season.

Australian Dairy Farmers Co-op (Bulla)

ADFC (Bulla) commenced sourcing milk in SW Victoria in mid-2014.

This company pays a flat price throughout the year.

	$/kg fat	$/kg protein	$/kg ms (approx.)
2014/15	4.52	9.04	6.53
2015/16	4.06	8.12	5.87
2016/17	3.39	6.79	4.90

ADFC do not pay a production incentive or a milk growth incentive, but may pay step-ups during the season.

* * * * * *

Opening milk prices are generally announced in late June each year. Prices quoted are **gross** prices, before deductions for volume charges, stop charges and levies - deductions that vary from company to company. For example :

	Stop charge	Volume Charge
FONTERRA	-	2.5¢/litre
MG	$7.50	2.5¢/litre
WCBF	-	2.1¢/litre
BEGA	$8.00	2.6¢/litre
ACM	-	2.0¢/litre
ADFMC (Bulla)	-	-

The above charges, plus compulsory levies, must then be deducted from the gross prices as announced, to arrive at a **net** price - the price the dairy farmer actually receives.

In all the pricing systems over all the dairy companies except ADFMC (Bulla), there has been an emphasis, to a greater or lesser degree, on higher prices for "out of season" production, and lowest prices for spring (September to December) production.

2. 2016/17 OPENING MILK PRICES

The table below summarises the opening milk prices as announced by each of the 6 dairy companies operating in SW Victoria. The prices detailed in the table are inclusive of any milk quality bonuses and assume the supply of premium quality milk throughout the year.

2016/17	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June
Bega	3.44	3.44	2.77	2.77	2.77	2.77	2.91	2.99	2.99	3.19	3.19	3.52
(MPSI)	8.62	8.62	6.93	6.93	6.93	6.93	7.28	7.48	7.48	7.98	7.98	8.82
ACM	3.58	3.46	3.00	3.00	3.00	3.00	3.13	3.23	3.23	3.46	3.46	3.54
	8.95	8.65	7.50	7.50	7.50	7.50	7.83	8.08	8.08	8.65	8.65	8.85
MG	3.21	2.84	2.72	2.72	2.72	2.72	2.92	3.02	3.06	3.21	3.29	3.36
	6.42	5.68	5.44	5.44	5.44	5.44	5.84	6.04	6.12	6.42	6.58	6.72
FONT	3.08	2.48	2.48	2.48	2.48	2.48	2.86	2.86	3.08	3.19	3.26	3.37
	7.71	6.21	6.21	6.21	6.21	6.21	7.16	7.16	7.71	7.99	8.16	8.44
ADFC	3.39	3.39	3.39	3.39	3.39	3.39	3.39	3.39	3.39	3.39	3.39	3.39
(Bulla)	6.79	6.79	6.79	6.79	6.79	6.79	6.79	6.79	6.79	6.79	6.79	6.79
WCBF	3.02	2.82	2.42	2.42	2.42	2.82	3.02	3.12	3.12	3.12	3.12	3.02
	7.55	7.05	6.05	6.05	6.05	7.05	7.55	7.80	7.80	7.80	7.80	7.55

3. 2016/17 MILK PRICES AND PRODUCTION SYSTEMS

This section of the submission compares the base milk price paid **before deductions** for the production pattern for 22 farms, and 6 different production systems. This is not a comparison between milk companies - rather it is a comparison between **production systems**, had all 22 farms supplied the same company.

Protein/fat ration has some influence on milk price - in general, the higher the protein/fat ratio, the higher the average milk price (though that is not always the case).

Generally speaking, when you compare herds of similar protein/fat ratio, **there is very little difference in the average base price received, regardless of the production system**, and that begs the obvious question : *If there is little or no significant price advantage, why should the dairy farmer react to pricing signals that offer more for out of season milk, particularly when that milk is much more expensive to produce?*

Final prices for the year are usually higher than the base price, due to :

(i) Step-ups during the year

It is customary for milk companies to pay step-ups during the year, as market conditions become clearer. Step-ups are usually paid on all of a particular year's production, such that the comparability of milk prices vis-à-vis production systems remains the same, i.e. there is very little difference in the average price received (base price + step-ups) regardless of the production system.

(ii) Production incentive payments

Four companies offer production incentive payments based on the volume of production, and calculated on a sliding scale - as production increases, the incentive payments for fat and protein progressively increase.

As an example, let's assume a seasonal-calving enterprise of 240 cows produces 91,000 kgs milk solids in total :-

51,000 kgs butterfat
40,000 kgs protein

91,000 kgs milk solids

Using the WCBF Productivity Incentive schedule as an example, the above enterprise would be entitled to a production incentive payment over and above the base price of $7,550 calculated as follows :-

51,000 kgs fat	x 5.0¢/kg	$2,550
40,000 kgs protein	x 12.5¢/kg	$5,000

		$7,550

= 8.3¢/kg milk solids

Another seasonal-calving but larger herd (480 cows) with exactly the same pattern of production in all respects may produce 182,000 kgs milk solids, and is therefore entitled to a production incentive payment, over and above the base price, of $30,200, calculated as follows :-

102,000 kgs fat	x 10.0¢/kg	$10,200
80,000 kgs protein	x 25.0¢/kg	$20,000

		$30,200

= 16.6¢/kg milk solids

(iii) Flat Milk Incentive

Two companies (WCBF and MG) offer a Flat Milk Supply Incentive (WCBF) or Domestic Incentive (MG), in addition to the base monthly price, step-ups and production incentive payments.

In order to qualify for the Flat Milk Incentive, suppliers must produce approximately 40% or more of their total production in "off season" months. For example, in the case of WCBF, if milk supplied in the months of July, February, March, April, May and June exceeds 39% of total annual production, then suppliers are paid an incentive on that eligible production on a sliding scale.

Bank	¢/kg butterfat	¢/kg protein
39.0%-39.99%	8.0	20.0
40.0%-40.99%	16.0	40.0
41.0%/41.99%	24.0	60.0
41.0%-42.99%	32.0	80.0
43.0%-44.99%	40.0	100.0
45.0% plus	50.0	125.0

(iv) Milk Growth Incentive

Several companies also pay an incentive for any increased production, in total, over the average of the previous 2 years.

* * * * * *

Apart from ADFMC (Bulla) who pay a flat monthly milk price year round, it is clear that milk companies have structured their pricing schedules to encourage :

i) out of season production
ii) increased production (e.g. production incentive payments, milk growth incentives).

It is also clear that higher payments for "out of season" milk are **subsidised** through lower prices paid to cost-efficient, seasonal producers in the spring months (September to December, and to a lesser extent in August and January).

Out-of-season milk is much more costly to produce. In many instances, extra production is also much more costly to produce such that, in many instances, additional production generates negative marginal returns.

Current pricing models lead suppliers to believe (or at least those who react to the current pricing signals) that they are gaining some sort of price or income advantage over their peers. The **facts** clearly suggest otherwise. In fact, suppliers who **do** react to the pricing signals to produce "out of season" milk or "flat supply" milk are significantly disadvantaged because they incur much higher costs in pursuit of higher-priced out-of-season production - costs that are significantly disproportionate to the magnitude of any gain in price per kilogram of milk solids, or the value of any additional production generated. Their enterprises are significantly less profitable as a direct consequence of misleading milk pricing signals.

And further, because these prices for out of season production are subsidised by lower prices paid through August to January, **all suppliers are being made less profitable.**

BEGA

	Base Milk Price before deductions $/kg Milk Solids	P/F ratio %
All-year-round production	5.011	84.6
	5.047	80.5
	5.107	88.4
Seasonal Calving (M/J/J) - dry land	4.962	76.9
	5.012	76.0
	5.025	77.0
	5.069	79.9
	5.071	78.5
	5.074	78.7
	5.076	80.3
	5.099	78.7
	5.119	83.7
	5.253	85.5
Seasonal calving (A/S/O) - irrigation	4.837	77.3
Seasonal calving (M/A/M) - "marginal" dry land	5.037	77.9
	5.128	79.0
Split calving - irrigation	4.907	74.2
	4.967	82.3
Split Calving - dry land	4.988	75.9
	5.076	81.7
	5.098	81.7
	5.189	84.9

ACM

	Base Milk Price before deductions $/kg Milk Solids	P/F ratio %
All-year-round production	5.355	84.6
	5.366	80.5
	5.437	88.4
Seasonal Calving (M/J/J) - dry land	5.291	76.9
	5.299	76.0
	5.312	77.0
	5.334	79.9
	5.347	78.5
	5.351	78.7
	5.363	80.3
	5.376	78.7
	5.41	83.7
	5.553	85.5
Seasonal calving (A/S/O) - irrigation	5.225	77.3
Seasonal calving (M/A/M) - "marginal" dry land	5.334	77.9
	5.412	79.0
Split calving - irrigation	5.251	74.2
	5.335	82.3
Split Calving - dry land	5.313	75.9
	5.337	81.7
	5.414	81.7
	5.510	84.9

MG

	Base Milk Price before deductions $/kg Milk Solids	P/F ratio %
All-year-round production	4.215	84.6
	4.231	80.5
	4.258	88.4
Seasonal Calving (M/J/J) - dry land	4.145	76.9
	4.159	79.9
	4.161	77.0
	4.164	76.0
	4.17	78.5
	4.178	78.7
	4.192	80.3
	4.206	78.7
	4.226	83.7
	4.327	85.5
Seasonal calving (A/S/O) - irrigation	4.188	77.3
Seasonal calving (M/A/M) - "marginal" dry land	4.193	77.9
	4.247	79.0
Split calving - irrigation	4.024	74.2
	4.238	82.3
Split Calving - dry land	4.222	75.9
	4.245	81.7
	4.255	81.7
	4.354	84.9

FONTERRA

	Base Milk Price before deductions $/kg Milk Solids	P/F ratio %
All-year-round production	4.581	84.6
	4.608	80.5
	4.637	88.4
Seasonal Calving (M/J/J) - dry land	4.456	79.9
	4.464	76.9
	4.477	78.5
	4.480	77.0
	4.488	76.0
	4.491	78.7
	4.517	80.3
	4.534	78.7
	4.567	83.7
	4.642	85.5
Seasonal calving (A/S/O) - irrigation	4.598	77.3
Seasonal calving (M/A/M) - "marginal" dry land	4.530	77.9
	4.603	79.0
Split calving - irrigation	4.601	74.2
	4.650	82.3
Split Calving - dry land	4.609	75.9
	4.625	81.7
	4.686	81.7
	4.802	84.9

ADFMC (BULLA)

	Base Milk Price before deductions $/kg Milk Solids	P/F ratio %
All-year-round production	4.906	80.5
	4.984	84.6
	4.985	88.4
Seasonal Calving (M/J/J) - dry land	4.858	76.0
	4.868	76.9
	4.869	77.0
	4.886	78.5
	4.887	78.7
	4.887	78.7
	4.90	79.9
	4.904	80.3
	4.939	83.7
	4.957	85.5
Seasonal calving (A/S/O) - irrigation	4.872	77.3
Seasonal calving (M/A/M) - "marginal" dry land	4.879	77.9
	4.891	79.0
Split calving - irrigation	4.838	74.2
	4.925	82.3
Split Calving - dry land	4.857	75.9
	4.908	81.7
	4.909	81.7
	4.951	84.9

WCBF

	Base Milk Price before deductions $/kg Milk Solids	P/F ratio %
All-year-round production	4.677	80.5
	4.678	84.6
	4.712	88.4
Seasonal Calving (M/J/J) - dry land	4.505	76.9
	4.536	79.9
	4.550	76.0
	4.551	78.5
	4.553	77.0
	4.561	78.7
	4.577	78.7
	4.592	80.3
	4.640	83.7
	4.749	85.5
Seasonal calving (A/S/O) - irrigation	4.709	77.3
Seasonal calving (M/A/M) - "marginal" dry land	4.545	77.9
	4.603	79.0
Split calving - irrigation	4.646	74.2
	4.734	82.3
Split Calving - dry land	4.641	75.9
	4.686	81.7
	4.735	81.7
	4.799	84.9

4. PRODUCTION SYSTEMS

There are a number of production systems in operation in SW Victoria (and West & South Gippsland) :-

Seasonal Calving - concentrated calving (M/J/J)

Out of Season Calving - calving J/F/M, usually in response to out of season milk prices (e.g. 45% of total production in best price months)

Split Calving - M/A/M 60%-65% /(S/O/N) 40%-35%
Ostensibly a response to milk pricing signals, but more likely a response to poor herd fertility

All-Year-Round - Cows calving in almost every month of the year

(a) Seasonal Calving - Cost-Efficient Model

In my experience (> 40 years), the **most profitable** production system is (and always has been) a modestly stocked, moderately productive seasonal-calving system where milk production is matched as closely as possible to the pasture production pattern. The significant features of such a system are :

- moderate stocking rates (1.4-1.5 cows per hectare)
- minimal dependence on grain supplements (0.45 to 0.65 t/cow)
- self sufficiency for conserved fodder requirements
- low risk
- low cost of production ($2.80-$3.00/kg ms net of leases and labour)
- moderate production
- high herd fertility.

EXAMPLE

The following example is extracted from actual client figures, both in terms of production and costs.

The enterprise is owner/operated, and has been operating at this level of production and costs for the past 6 or 7 years.

160 hectares 220 cows
60 heifers
60 heifer calves
7 bulls
= 1.79 cows/ha

But, 60 heifers + 3 bulls are agisted off year round @ $7/head/week, which reduces stocking rate on the dairy farm to 1.53 cow equivalents/ha.

Production : 375 kgs ms/cow = 82,500 kgs ms
Milk Price : $5.00/kg ms

Income				**$**
Milk - 82,500 kgs ms x $5/kg				412,500
Cattle sales -	33 cull cows	x $650	21,450	
	20 PTIC surplus cows	x $1,200	24,000	
	150 calves	x $20	3,000	
	3 bulls	x $800	2,400	
			---	50,850
Other - rebates, dividends, &c.				3,650
				$467,000

Expenditures		
Administration - rates		6,000
- registrations, insurances		8,000
- phone		1,500
- professional fees		6,500
- subscriptions, postage, papers		1,500
- bank fees		500
Repairs & Maintenance - Fixed Structures		15,000
Repairs & Maintenance - Vehicles & Plant		17,500
Fuel, power		17,600
Wages		3,000
Feed Costs - fertiliser	46,000	
- bought feed (0.6t/cow x $320/t)	42,240	
- hay/silage making (contract)	14,000	
- hay purchases	-	
- seeds, sprays	8,500	
- calf rearing (60)	7,500	
- lease, agistment	23,000	
	---	141,240
Husbandry Costs - $110/cow		24,200
Cartage, hardware, sundries		1,500
Stock Purchases (3 bulls)		3,600
		$247,640

Farm Trading Surplus = $219,360

Let's assume that this enterprise carries a debt of $1 million. The above Trading Surplus would then be distributed along the following lines :

	$
Principal	?
Interest - $1 million x 4.33%	43,300
Capital expenditure	21,500
Tax	11,000
Personal drawings (including superannuation $53,000)	133,000
	$208,800

Cost of Production : $2.96/kg ms

Comments

I believe this enterprise represents the appropriate balance between stocking rate, production and costs, and optimizes profit at a range of milk prices. Indeed, the enterprise could survive and meet its commitments at a milk price as low as $4/kg ms (no tax, limited capital expenditure, no contribution to superannuation) - **because it is low cost**.

At milk prices of around $6.70/kg ms (e.g. 2014/15), this model is very profitable - a Farm Trading Surplus of almost $360,000.

This model offers no incentive for the supplier to change his production system in response to milk pricing signals. To do so would require a **structural** change to the production system (e.g. to move the calving pattern earlier into the autumn - commence calving early- to-mid-March instead of early-to-mid-May, to capture the higher price months, April to August). Such a move effectively creates his own late autumn break every year, and because calving pattern is out of sync with the pasture production pattern, adds significantly to supplementary feed costs, is no more productive in total (and may be less productive), reduces overall pasture production, and adds to risk.

Out of season production may add about 5¢/kg ms to the overall milk price, but it also adds significantly to costs and to the overall cost of production, resulting in much lower profit.

(b) Autumn Calving Model

Let's assume the same farm, same herd size/composition, same total production (82,500 kgs milk solids), but a move to an earlier calving pattern in pursuit of out-of-season milk prices. Such a change may qualify this enterprise for Flat Milk Incentive prices, adding approximately 30¢/kg ms to the price received. The cash flow outcome would then be along the lines of :-

Income			**$**
Milk - 82,500 kgs ms x $5.30/kg			437,250
Cattle sales (as per example above)			50,850
Other - rebates, dividends, &c.			3,650
			$491,750
Expenditures			
Administration - rates			6,000
- registrations, insurances			8,000
- phone			1,500
- professional fees			6,500
- subscriptions, postage, papers			1,500
- bank fees			500
Repairs & Maintenance - Fixed Structures			15,000
Repairs & Maintenance - Vehicles & Plant			17,500
Fuel, power			17,600
Wages			3,000
Feed Costs - fertiliser	46,000		
- bought feed (1.5t/cow x $340/t) *	112,200		
- hay/silage making (contract)	14,000		
- hay purchases	12,000	⊙	
- seeds, sprays	8,500		
- calf rearing (60)	7,500		
- lease, agistment	23,000		
			219,200
Husbandry Costs - $125/cow *			27,500
Cartage, hardware, sundries			1,500
Stock Purchases (3 bulls)			3,600
			$328,900

Farm Trading Surplus = $162,850

* In my experience, there is an adverse relationship between increased grain inputs per cow and husbandry costs - higher grain inputs per cow inevitably result in higher husbandry costs per cow. As well, higher grain inputs per cow will add to the per tonne cost of grain (additives, buffers, &c.).

- ⊙ A change to an autumn calving (early-to-mid-March) will reduce total pasture production and make it more likely that less fodder will be conserved and more hay will need to be purchased. As well, a change to an autumn calving will increase the amount of conserved fodder required because supplementation will occur over a longer period.

Distribution of the above Farm Trading Surplus would then be along the following lines :

	$
Principal	-
Interest - $1 million x 4.33%	43,300
Capital expenditure	12,000
Tax	6,700
Personal drawings	80,000
Superannuation	-
	$142,000

Cost of Production : $3.94/kg ms

Comments

Pursuit of "out of season" milk prices leads to an increase in the cost of production of 98¢/kg ms, versus a gain in milk price of about 30¢/kg ms.

The "out of season" enterprise **needs** a milk price of $5/kg ms or higher, simply to survive. At a milk price of $5/kg ms, it offers little prospect of debt reduction/financial consolidation, or the capacity to build wealth off-farm, or a buffer against increases in interest rates or increases in commodity prices (grain, hay, fuel, power) and other cost increases (rates, insurances, &c.).

Its outcome is **milk price dependent rather than cost-driven**, and it is more exposed to risk (adverse seasonal conditions) which will drive up costs.

Typically, these systems generate about 45% of their total production in the highest price months (April to August), but that may add only 5¢/kg-10¢/kg ms to their overall net price for the year when compared to seasonal calving enterprises with a similar protein/fat ration, unless they opt for and qualify for a Flat Milk price incentive

The further the production system departs from the ideal seasonal calving model (e.g. split calving, or all-year-round calving), the more likely it is that costs will increase even further, without any significant changes to total production, or any significant improvement in overall average milk price relative to the autumn-calving model above.

(c) More Land/Higher Herd Size

Farmers aiming to increase production should also aim to achieve the appropriate balance between stocking rate, self-sufficiency for conserved fodder requirements, risk, dependency on grain supplements, and costs. In order to achieve that balance, **larger herd sizes require more land** - more or less in proportion to the "ideal" production model detailed in section 4(a) above, which is along the lines of :-

900 acres 500 cows, 135 heifers, 135 calves, 16 bulls

If replacement heifers plus 6 bulls are agisted off for the full year, then the stocking rate on the dairy farm is equivalent to 1.52 cows/hectare.

Production : 375 kgs ms/cow (= 187,500 kgs ms)
Milk Price : $5.10/kg ms (includes additional production incentive)

Income				**$**
Milk - 187,500 kgs ms x $5.10/kg				956,250
Cattle sales -	75 cull cows	x $650	48,750	
	45 PTIC surplus cows	x $1,200	54,000	
	350 calves	x $20	7,000	
	7 bulls	x $800	5,600	
			---	115,350
Other - rebates, dividends, &c.				8,400
				$1,080,000

Expenditures		
Administration - rates		13,500
- registrations, insurances		12,000
- phone		2,500
- professional fees		7,500
- subscriptions, postage, papers		2,000
- bank fees		500
Repairs & Maintenance - Fixed Structures		30,000
Repairs & Maintenance - Vehicles & Plant		27,500
Fuel, power		40,000
Wages		150,000
Feed Costs - fertiliser	105,000	
- bought feed (0.6t/cow x $320/t)	96,000	
- hay/silage making (contract)	30,000	
- hay purchases	-	
- seeds, sprays	15,000	
- calf rearing (135)	17,000	
- lease, agistment	51,300	
	---	314,300

Expenditures (continued)	**$**
Husbandry Costs - $110/cow	55,000
Cartage, hardware, sundries	2,000
Stock Purchases (7 bulls)	8,400
	$665,200

Farm Trading Surplus = $414,800

Cost of production, $3.50/kg ms ($2.70/kg net of labour)

If the farm debt is also in a similar proportion to the example under section 4(a) of this submission (say $5,000 per cow, or $2.5 million), then distribution of the Farm Trading Surplus would be along the following lines :-

	$
Principal	?
Interest - $2.5 million x 4.33%	108,250
Capital expenditure	30,000
Tax	45,000
Personal drawings (including superannuation $70K)	150,000
	$333,250

So, despite a reasonably substantial level of debt, and a significant tax liability, this enterprise has the capacity to :-

i) reduce debt by $80,000 per year
ii) build off-farm wealth through superannuation,

all at a pretty ordinary milk price.

This enterprise, as for the example under section 4(a) above, can survive at a milk price as low as $4/kg milk solids (no principal repayments, reduced capital expenditure, zero tax, no contribution to superannuation) - again, **because it is low cost**.

5. INCREASING PRODUCTION

All the evidence suggests that pursuit of "out of season" milk prices, through structural changes to the production system, away from the ideal seasonal calving model, **may** marginally improve the overall average milk price by 20¢/kg ms-30¢/kg ms, but will more likely increase costs by a much greater margin (by as much as $1/kg ms), and simply result in much lower profit - for enterprises operating at a similar production level and with similar protein/fat ratios - and only if those changes qualify for the Flat Milk incentive prices.

Over the past decade or more, dairy farmers have been encouraged to increase productivity, through a variety of sources - dairy companies, feed companies, nutritionists, veterinarians acting as consultants, banks, Dairy Australia, herd improvement organisations - with the emphasis on productivity as distinct from profitability.

That emphasis translates into :

i) increased production per cow
ii) increased total farm production through the combined effect of increased production per cow and increased stocking rates (i.e. increasing herd size on the same area).

(a) Increased Production per Cow

Assuming the ideal seasonal calving model detailed above, then increasing production per cow is a relatively simple equation of extra supplementary feed in versus extra milk out, and that supplementary feed is usually in the form of grain.

There have been many theoretical estimates of the responses that can be achieved from additional supplementary feed inputs (as much as 2 litres of milk per kg additional dry matter), but in my experience, the response function "on the ground" is around ½ litre of milk per kg additional dry matter, which equates to approximately 25-26 kgs supplement to produce an extra 1 kg milk solids (or at current grain and milk prices, an outlay of approximately $8.80 to return approximately $5.00).

Quite apart from that negative marginal return, any substantial increase in the level of supplementary feed inputs could have adverse outcomes on other crucial aspects of the overall production system (e.g. herd fertility, calving pattern, metabolic problems, herd wastage, &c.).

(b) Increased Total Farm Production

The approach that is more commonly adopted in pursuit of higher production is to increase stocking rate/herd size.

Let's assume that, for the "ideal" example described under section 4(a) above (a 160 hectare farm), the seasonal calving pattern is maintained, and herd size is increased to 300 cows, 85 heifers, 85 heifer calves, 12 bulls - an overall stocking rate of just on 2.5 cow equivalents per hectare (1 cow equivalent per acre). Such levels of stocking rate are practically possible, but economically imprudent, because some 60% of total annual feed requirements would need to be purchased.

As stocking rate increases beyond the optimum stocking rate level of around 1.4-1.5 cow equivalents per hectare, the amount of purchased feed per cow increases exponentially - and when that is multiplied by an increasing number of cows, the amount of purchased feed in total increases at quite an alarming rate.

Increasing the intensity of the operation has a raft of disadvantages :

- extra labour
- an exponential increase in the amount of supplementary feed required
- most (possibly all) hay needs to be purchased, which results in increased exposure to risk, and increased costs in dry years
- much higher grain inputs lead to higher per cow husbandry costs
- may compromise herd reproductive performance
- all replacement stock agisted off (85 heifers, 5 bulls) year round.

Production : 385 kgs ms/cow (= 115,500 kgs ms)
Milk price : $5.07/kg ms net (includes additional production incentive)

Income				**$**
Milk - 115,500 kgs ms x $5.07/kg net				585,585
Cattle sales -	48 cull cows	x $650	31,200	
	25 PTIC surplus cows	x $1,200	30,000	
	200 calves	x $20	4,000	
	5 bulls	x $800	4,000	
			---	69,200
Other - rebates, dividends, &c.				5,215
				$660,000

Expenditures			
Administration - rates			6,000
- registrations, insurances			8,000
- phone			1,500
- professional fees			6,500
- subscriptions, postage, papers			1,500
- bank fees			500
Repairs & Maintenance - Fixed Structures			22,500
Repairs & Maintenance - Vehicles & Plant			17,500
Fuel, power			24,000
Wages			55,000
Feed Costs - fertiliser	50,000		
- bought feed (2.2t/cow x $360/t)	237,600		
- hay/silage making (contract)	10,000		
- hay purchases (300t)	48,000	-	
- seeds, sprays	12,000		
- calf rearing (85)	10,625		
- lease, agistment	33,000		
	---		401,225
Husbandry Costs - $160/cow			48,000
Cartage, hardware, sundries			1,500
Stock Purchases (5 bulls)			6,000
			$599,725

Farm Trading Surplus = $60,275

Cost of Production = $5.14/kg ms

If the enterprise carries a $1 million debt, then the above Trading Surplus would be distributed as follows :-

	$
Principal	-
Interest	43,300
Capital expenditure	11,700
Tax	-
Personal drawings	80,000
	$135,000

leaving a deficit (an increase in overdraft or additional loan funds) of **-$74,725**.

NB. The above exercise is probably a conservative estimate - the Dairy Monitor Project indicated that, in 2015/16, the average cost of production for dairy farms in south-west Victoria was around $5.40/kg milk solids.

(c) Extreme Example

One of the most extreme situations I've encountered (in very recent times) was/is as follows :-

Milking area : 420 acres
Run-off support : 519 acres (419 owned, 100 acres leased)

Herd Size : 480 cows (320 A/M/J calvers; 160 SON calvers)
100 autumn-calving heifers
50 heifers to join (calving spring)
140 AD heifer calves
80 SD heifer calves
15 bulls

Production : 261,000 kgs ms 544 kgs ms/cow
1,535 kgs ms/hectare

Features : Very high stocking rate on the milking area (2.82 cows/ha)
Split calving
Very high production - per cow; per hectare
Debt level $2.3 million (< $5,000 per cow, which should be comfortably manageable)
Negative cash flow - very negative (approximately $200K/year)

$/kg ms

Past 4 years	Av. Price Received	Cost of Production	Production (kgs ms)
2012/13	$5.12	$5.86	198,500
2013/14	$6.63	$6.37	216,000
2014/15	$6.63	$6.85	255,000
2015/16	$5.87	$6.75	261,000

(**NB.** 2016/17 milk price is likely to be around $5.00/kg ms.)

This particular enterprise had been receiving "professional" advice over the past 5 or 6 years.

2015/16

Incomes		**$**
Milk - 261,000 kgs ms x $5.87/kg		1,532,000
Cattle sales		210,000
Other - rebates, dividends, &c.		23,000
		$1,765,000
Expenditures		
Administration - rates		17,200
- registrations, insurances		11,500
- phone		2,000
- professional fees		8,500
- subscriptions, postage, papers		3,000
- bank fees		850
Repairs & Maintenance - Fixed Structures		81,000
Repairs & Maintenance - Vehicles & Plant		70,000
Fuel, power		55,300
Wages		310,000
Feed Costs - fertiliser	79,500	
- bought feed (0.6t/cow x $320/t)	905,000	
- hay/silage making (contract)	61,000	
- hay purchases	-	
- seeds, sprays	14,500	
- calf rearing	-	
- lease, agistment	21,500	
		1,081,500
Husbandry Costs - $240/cow		115,200
Cartage, hardware, sundries		6,800
Stock Purchases		-
		$1,762,850

Farm Trading Surplus = **$2,150**

Stock purchases	$8,400
Principal	-
Interest, 5%	$115,000
Capital expenditure	?
Tax	-
Personal drawings	$80,000

6. FLAT MILK INCENTIVES

Enterprises that aim to qualify for Flat Milk price incentives need to make a radical move **away** from a seasonal calving production pattern to either an early autumn-calving, or to a split-calving system.

The foregoing comparisons, examples 4(a) and 4(b), indicate that, for enterprises of similar stocking rates and similar total production, such changes result in a substantial and disproportionate increase in the cost of production relative to any increase in milk price. Milk price may be increased by something like 20¢/kg ms to 30¢/kg ms, but cost of production is likely to increase by something like $1/kg ms or more, with the result that enterprises that react to such milk pricing signals tend to be significantly less profitable, more difficult to manage, and more exposed to risk (particularly adverse seasonal conditions).

It is also not uncommon for farmers to react to i) "out of season" milk prices and ii) lower average milk prices by increasing herd size/stocking rate, at the same time as radically altering their production pattern, to access flat milk price incentive prices and higher "out of season" milk prices.

The following comparison (actual production and cost figures) illustrates the folly of such a strategy, even though in some years, the more intensive, "out of season" milk may be more profitable.

Each farm is of similar size - 365 hectares (900 acres).

Farm A
Seasonal calving (M/J/J)
Peak herd size 500 cows
Replacements agisted off
Moderate production, low input

Farm B
Split calving (J/F/M 650; S/O/N 170)
Peak herd size 820 cows
All replacements agisted or contract-reared
High production, very high input

Productivity incentive payments added 10¢/kg milk solids to milk price for Farm B, compared to Farm A, and the Flat Milk incentive payment on 46% of total production added a further 39.6¢/kg ms to Farm B's milk price compared to Farm A.

Farm B's milk price was therefore 50¢/kg ms **better** than Farm A - but Farm B's cost of production was $2.11/kg ms higher than Farm A.

At current milk prices (approximately), Farm A will generate almost $250,000 more profit than Farm B - for much less work, less stress, much greater certainty and much less risk.

	FARM A	FARM B
	Seasonal Calving	Split Calving/Increased Herd Size
INCOME		
Milk	968,810	2,774,870
Cattle Sales	115,350	150,000
Other	8,400	10,000
	$1,092,560	**$2,934,870**
EXPENDITURES		
Administration - rates	13,500	22,000
- registrations, insurances	12,000	20,000
- phone	2,500	4,000
- professional fees	7,500	8,000
- subscriptions, postage, papers	2,000	5,000
- bank fees	500	600
Repairs & Maintenance - Fixed Structures	30,000	85,000
Repairs & Maintenance - Vehicles & Plant	27,500	45,000
Fuel, power	40,000	95,000
Wages	150,000	350,000
Feed Costs - Fertilisers	105,000	150,000
- bought feed	96,000	833,000
- hay/silage making	30,000	70,000
- hay purchases	-	512,000
- seeds, sprays	15,000	56,000
- calf rearing	17,000	30,000
- lease, agistment	51,300	280,000
Husbandry Costs	55,000	175.000
Cartage, hardware, sundries	2,000	6,500
Stock Purchases (bulls)	8,400	8,400
	$665,200	**$2,755,500**
Farm Trading Surplus	**$427,360**	**$179,370**
Production (kgs ms)	187,500	490,000
Cow Numbers	500	820
Average Price Received ($/kg ms)	$5.167	$5.663
Cost of Production ($/kg ms)	$3.50	$5.61
Base Price	$5.00	$5.00
Production Incentive	$0.167	$0.267
Flat Milk Incentive	-	$0.396
	$5.167	**$5.663**

Over the past 10 years, base milk prices received for Farm A (base price + step-ups + production incentive) have averaged $5.40/kg milk solids (with a range of $3.90 to $6.50).

Farm B's average price over that same period would have averaged $5.90/kg milk solids (base price + step-ups + production incentive + flat milk incentive), with a range of $4.40 to $7.00 per kg milk solids.

Over that same 10-year period, the pattern of milk prices has been :-

	Seasonal	**Split/Flat Milk**
5 years of average milk prices	$5.40	$5.90
3 years of high milk prices	$6.35	$6.85
2 years of low milk prices	$4.00	$4.50

If each farm maintained their production system over that 10-year period, and contained costs to the levels indicated above, the relative outcomes would have been of the order of :-

	Seasonal	**Split Calving (Flat Milk)**
At average milk prices ($/kg ms)	**$5.40**	**$5.90**
(5 years out of last 10)		
Income		
Milk	1,012,500	2,891,000
Cattle Sales	115,350	150,000
Other	8,400	10,000
	$1,136,250	**$3,051,000**
Costs	665,200	2,755,500
PROFIT	**$471,050**	**$295,500**
At high range milk prices	**$6.35**	**$6.85**
(3 years out of last 10)		
Income		
Milk	1,190,625	3,356,500
Cattle Sales	115,350	150,000
Other	8,400	10,000
	$1,314,375	**$3,516,500**
Costs	665,200	2,755,500
PROFIT	**$649,175**	**$761,000**
At low milk price	**$4.00**	**$4.50**
(2 years out of last 10)		
Income		
Milk	750,000	2,205,000
Cattle Sales	115,350	150,000
Other	8,400	10,000
	$873,750	**$2,365,000**
Costs	665,200	2,755,500
PROFIT/(LOSS)	**$208,550**	**$(390,500)**

Over the past 10 years, **aggregate** PROFIT for each production system would have been of the order of :-

Seasonal	**Split/Flat Milk**
$4,719,875	$2,979,500

and bear in mind that the current year is likely to be an "average" milk price year or below.

Farm B carries a debt of $4 million. If we assume that each enterprise carried a similar level of debt (Farm A - $8,000 per cow; Farm B - $4,880 per cow), then the distribution of the Farm Trading Surplus (or Loss) each year, in simple terms, would be along the lines of :-

	$
Principal	?
Interest - $4 million x 4.5%	180,000
Capital expenditure - say	40,000
Tax	?
Personal drawings (1 household)	80,000
	$300,000

Then, over that 10-year period and in simple terms, the **cash** surplus/(deficit) **in aggregate** would be of the order of :-

	Farm A	**Farm B**
5 years at average prices	855,250	(22,500)
3 years at high prices	1,047,525	1,383,000
2 years at low prices	(182,900)	(1,381,000)
	$1,719,875	**$(20,500)**

Comments

Farm B will have worked for 10 years in an extremely stressful environment, and made no financial progress at all - no reduction in debt, no possibility of building wealth off-farm - whereas Farm A will have been able to reduce debt (by almost half), or build wealth off-farm (via superannuation and/or other investments), or a bit of both, thereby providing the financial capacity to comfortably weather years of low milk prices.

The essential features of each system are :

Farm A
- makes a profit **every** year
- less stress
- less work
- less risk (interest rates, grain prices, adverse seasonal conditions)
- sustainable at a range of milk prices
- simple
- self-sufficient
- provides the opportunity to build wealth
- easier to control costs under a less stressful system of production.

Farm B
- only strongly profitable in years of high milk price
- milk price dependent
- very high risk
- much more complicated management
- may not be sustainable over an extended period
- heavily dependent on off-farm feed resources (grain, hay purchases, agistment/contract-rearing
- huge losses in years of low milk price
- herd fertility likely to be compromised.

7. SUMMARY

In my experience, stretching over the past 40-45 years, the most cost-efficient and most profitable dairy production systems have the following characteristics :

- a reasonably concentrated **seasonal** calving pattern (i.e. a calving pattern that matches the milk production pattern as closely as possible to the pattern of pasture production)
- moderate stocking rate (around 1.4-1.5 cows per hectare of milking area)
- a system where pasture is the primary feed resource, and
- minimal dependence on purchased supplements (grain) - 0.4 to 0.7 tonnes per cow
- modest levels of per cow production
- self-sufficiency for conserved fodder requirements
- a high level of herd fertility.

That combination of factors results in a production system that is modestly productive, relatively low cost and **low risk**.

These systems have proven to be the most profitable production systems over a long period of time, and over the whole range of milk prices, and seasonal conditions.

For an individual supplier, the main focus/objective should surely be to maximise PROFIT (as distinct from maximizing production), and to sustain that objective over an extended period of years and regardless of variations in seasonal conditions and fluctuations in milk price.

Profit is determined by 3 factors in combination :

i) how much you produce (Production)
ii) how much you spend in generating that production (Costs)
iii) milk price (Price).

A supplier has virtually no control over milk price. (In the past decade or so, milk price has ranged from a low of approximately $4.00/kg ms (2006/07) to a high of approximately $6.60/kg ms (2013/14) - a price variation of approximately 65%. The only things an individual supplier can control, with any degree of predictability, are :

How much he/she produces (Production)
How much he/she spends in generating that production (Costs)

Profit is determined by how much production at what cost, rather than trying to maximize production at any cost, or by chasing “out of season” milk prices.

The evidence suggests that current pricing systems make little or no difference to the overall average net base price received by suppliers, pretty much regardless of the type of production system they choose to implement, except where the production system qualifies the supplier to receive flat milk incentive payments over and above the base price, step-ups and productivity incentive payments.

In extreme cases, eligibility to receive flat milk incentive payments may increase the price received by approximately 30-40¢/kg milk solids, but access to flat milk incentive payments requires a radical change to the production system that drives costs up by anything from $1-$2/kg milk solids, which then makes such production systems highly dependent on milk price to ensure their financial viability - and extremely vulnerable, financially, in years of low milk prices.

In most instances, whether suppliers react to the pricing signals or not, they are not really advantaged or disadvantaged in terms of the overall average price received. That raises an obvious question : *If there is no real price advantage or income advantage to a supplier, regardless of the production system adopted, then why bother to put out confected pricing options that only serve to confuse suppliers, or worse, to mislead suppliers?*

The **facts** clearly indicate that suppliers who **do** react to current milk pricing signals to produce "out of season" milk are significantly disadvantaged because they incur substantially higher costs in pursuit of higher-priced-out-of-season production. In other words, their enterprises are less profitable as a direct consequence of misleading milk price signals.

The milk price pool - the funds available to distribute to suppliers - is a specified amount. As a consequence, higher payments for "out of season" milk are **subsidised** by paying lower prices to cost-efficient, seasonal producers in the spring months (September to December, and to a lesser extent August and January) such that, at the farm level, **all suppliers are being made less profitable** as a consequence of current pricing systems (with the exception of ADFC (Bulla)).

For many years now, and via many avenues, there has been an unhealthy emphasis (for the industry generally) on increasing **productivity**, and on the pursuit of "out of season" milk prices, rather than a focus on **profitability**, and both of those factors, either separately or in combination, have contributed to an industry where cost of production roughly equals or is greater than milk price in 7 years out of 10.

However, and despite those exhortations to produce more, and to produce out of season, I suspect there are plenty of dairy farmers who are operating profitably, by adopting simple cost-effective production systems. Regrettably, these systems receive little or no publicity because they are "spectacularly unspectacular". All they can boast about is that they are consistently profitable.

As far as milk pricing is concerned, the concept of a flat milk price year round (as per the example of ADFC (Bulla)) has considerable appeal. It would remove the "temptation" to produce costly "out-of-season" milk and, in time, would focus suppliers' attention on the most cost-efficient production system for their particular area, Suppliers would eschew production in the high-cost periods and less seasonally reliable periods of the year.

Eventually, all dairy farms would become more profitable and, over time, that would surely lead to a more vibrant and more profitable dairy industry, and a more attractive and more rewarding career path for young people entering the industry.