FARM MONITORING 2012

Ministry for Primary Industries
Manatū Ahu Matua

NORTHLAND DAIRY

Key results from the Ministry for Primary Industries 2012 dairy monitoring programme

KEY POINTS

- Total production in the Northland dairy model increased 12 percent to 88 500 kilograms of milksolids in 2011/12, mainly due to excellent summer rainfall that enabled cows to be fully fed on grass.
- Net cash income increased 4 percent to $642 000, compared with $619 900 in 2010/11. This was due to increased milksolids production, which compensated for the 20 percent decline in the payout to $6.05 per kilogram of milksolids.
- Total farm working expenses increased 11 percent to $343 800 but are expected to decrease in 2012/13 to $327 400, with tighter budgetary control in line with the lower early forecast payout.
- The model had a farm cash surplus in 2010/11 of $66 600, which declined to $40 300 in 2011/12. A significant deficit of $50 300 is forecast for 2012/13.
- Despite the decrease in milk price for 2011/12, good pasture growth in the late summer and autumn, and a record production season, buoyed farmer confidence. The budgeted deficit for 2012/13, however, has farmers concerned about the long-term viability of their industry.

Table 1: Key parameters, financial results and budget for the Northland dairy model

Year ended 30 June	2008/09	2009/10[1]	2010/11[2]	2011/12 actual	2012/13 budget
Effective area (ha)	121	121	121	121	121
Cows wintered (head)	275	287	288	293	295
Replacement heifers (head)	69	70	70	73	73
Cows milked 15th December (head)	274	280	282	285	290
Stocking rate (cows/ha)	2.3	2.3	2.3	2.4	2.4
Total milksolids (kg)	77 785	74 000	79 013	88 495	84 100
Milksolids per ha (kg/ha)	643	612	653	731	695
Milksolids per cow milked (kg/cow)	284	264	280	311	290
Milksolids advance to end June ($/kg)	4.05	5.15	6.20	5.20	4.40
Milksolids deferred payment ($/kg)	1.00	1.05	0.95	1.39	0.85
Net cash income ($)	423 000	499 815	619 852	641 952	513 615
Farm working expenses ($)	282 600	291 852	311 057	343 845	327 425
Farm profit before tax ($)	22 800	64 811	188 534	183 355	70 052
Farm surplus for reinvestment[3] ($)	–12 800	20 566	120 840	88 827	9 748

Notes

1 The sample of farms used to compile this model changed between 2008/09 and 2009/10. Caution is advised if comparing data between these two years.

2 The model parameters have been updated as from 2010/11 using the latest dairy statistics. Caution should be used in comparing with earlier published material.

3 Farm surplus for reinvestment is the cash available from the farm business, after meeting living costs, which is available for investment on the farm or for principal repayments. It is calculated as farm profit after tax plus depreciation plus stock adjustments less drawings.

Table 2: Northland dairy model budget

	2011/12			2012/13 budget		
	Whole farm ($)	Per cow ($)	Per kg of milksolids ($)	Whole farm ($)	Per cow ($)	Per kg of milksolids ($)
Revenue						
Milksolids	570 002	2 000	6.44	445 261	1 535	5.29
Dividend on wet shares	23 660	83	0.27	28 219	97	0.34
Cattle	47 305	166	0.53	38 350	132	0.46
Other farm income	6 585	23	0.07	6 585	23	0.08
Less:						
Cattle purchases	5 600	20	0.06	4 800	17	0.06
Net cash income	**641 952**	**2 252**	**7.25**	**513 615**	**1 771**	**6.11**
Farm working expenses	**343 845**	**1 206**	**3.89**	**327 425**	**1 129**	**3.89**
Cash operating surplus	**298 107**	**1 046**	**3.37**	**186 190**	**642**	**2.21**
Interest	100 425	352	1.13	96 096	331	1.14
Rent and/or leases	0	0	0.00	0	0	0.00
Stock value adjustment	4 310	15	0.05	0	0	0.00
Minus depreciation	18 638	65	0.21	20 042	69	0.24
Farm profit before tax	**183 355**	**643**	**2.07**	**70 052**	**242**	**0.83**
Income equalisation	0	0	0.00	0	0	0.00
Taxation	49 055	172	0.55	22 346	77	0.27
Farm profit after tax	**134 300**	**471**	**1.52**	**47 706**	**165**	**0.57**
Allocation of funds						
Add back depreciation	18 638	65	0.21	20 042	69	0.24
Reverse stock value adjustment	–4 310	–15	–0.05	0	0	0.00
Drawings	59 800	210	0.68	58 000	200	0.69
Farm surplus for reinvestment[1]	**88 827**	**312**	**1.00**	**9 748**	**34**	**0.12**
Reinvestment						
Net capital purchases	28 000	98	0.32	43 397	150	0.52
Development	5 700	20	0.06	0	0	0.00
Principal repayments	14 803	52	0.17	16 616	57	0.20
Farm cash surplus/deficit	**40 324**	**141**	**0.46**	**–50 266**	**–173**	**–0.60**
Other cash sources						
Dividend on dry shares	0	0	0.00	0	0	0.00
Introduced funds	0	0	0.00	0	0	0.00
New borrowings	0	0	0.00	0	0	0.00
Off-farm income	17 000	60	0.19	17 000	59	0.20
Net cash position	**57 324**	**201**	**0.65**	**–33 266**	**–115**	**–0.40**
Assets and Liabilities						
Farm, forest and building (opening)	1 720 000	6 035	19.44	1 720 000	5 931	20.45
Plant and machinery (opening)	124 250	436	1.40	133 613	461	1.59
Stock valuation (opening)	697 765	2 448	7.88	702 075	2 421	8.35
Dairy company shares	361 600	1 269	4.09	399 997	1 379	4.76
Other farm-related investments (opening)	0	0	0.00	0	0	0.00
Total farm assets	**2 903 615**	**10 188**	**32.81**	**2 955 685**	**10 192**	**35.14**
Total liabilities (opening)	1 581 525	5 549	17.87	1 556 722	5 368	18.51
Total equity (assets-liabilities)	**1 322 090**	**4 639**	**14.94**	**1 398 963**	**4 824**	**16.63**

Notes
1 Farm surplus for reinvestment is the cash available from the farm business, after meeting living costs, which is available for investment on the farm or for principal repayments. It is calculated as farm profit after tax plus depreciation plus stock adjustments less drawings.

Table 3: Northland dairy model expenditure

	2011/12			2012/13 budget		
	Whole farm ($)	Per cow ($)	Per kg of milksolids ($)	Whole farm ($)	Per cow ($)	Per kg of milksolids ($)
Farm working expenses						
Permanent wages	42 000	147	0.47	42 000	145	0.50
Casual wages	0	0	0.00	0	0	0.00
ACC	843	3	0.01	1 268	4	0.02
Total labour expenses	**42 843**	**150**	**0.48**	**43 268**	**149**	**0.51**
Animal health	20 805	73	0.24	22 040	76	0.26
Breeding	11 400	40	0.13	12 180	42	0.14
Dairy shed expenses	8 550	30	0.10	8 990	31	0.11
Electricity	11 400	40	0.13	11 890	41	0.14
Feed (hay and silage)	5 700	20	0.06	4 000	14	0.05
Feed (feed crops)	5 700	20	0.06	6 000	21	0.07
Feed (grazing)	35 480	124	0.40	37 480	129	0.45
Feed (other)	37 200	131	0.42	31 200	108	0.37
Fertiliser	49 622	174	0.56	47 040	162	0.56
Lime	5 100	18	0.06	5 100	18	0.06
Freight (not elsewhere deducted)	2 280	8	0.03	2 320	8	0.03
Regrassing costs	5 130	18	0.06	5 800	20	0.07
Weed and pest control	4 845	17	0.05	4 060	14	0.05
Fuel	13 395	47	0.15	13 340	46	0.16
Vehicle costs (excluding fuel)	13 395	47	0.15	13 630	47	0.16
Repairs and maintenance	37 050	130	0.42	21 750	75	0.26
Total other working expenses	**267 052**	**937**	**3.02**	**246 820**	**851**	**2.93**
Communication costs (phone and mail)	2 708	10	0.03	2 900	10	0.03
Accountancy	4 560	16	0.05	4 930	17	0.06
Legal and consultancy	2 280	8	0.03	2 320	8	0.03
Other administration	1 425	5	0.02	1 450	5	0.02
Water charges (irrigation)	0	0	0.00	0	0	0.00
Rates	7 695	27	0.09	10 150	35	0.12
Insurance	7 410	26	0.08	7 540	26	0.09
ACC employer	4 686	16	0.05	5 019	17	0.06
Other expenditure[1]	3 186	11	0.04	3 028	10	0.04
Total overhead expenses	**33 950**	**119**	**0.38**	**37 337**	**129**	**0.44**
Total farm working expenses	**343 845**	**1 206**	**3.89**	**327 425**	**1 129**	**3.89**
Calculated ratios						
Economic farm surplus (EFS[2])	216 744	761	2.45	98 591	340	1.17
Farm working expenses/NCI[3]	54%			64%		
EFS/total farm assets	7.5%			3.3%		
EFS less interest and lease/equity	8.8%			0.2%		
Interest+rent+lease/NCI	15.6%			18.7%		
EFS/NCI	33.8%			19.2%		
Wages of management	67 036	235	0.76	67 557	233	0.80

Notes
1 Includes DairyNZ levy.
2 EFS is calculated as follows: net cash income plus change in livestock values less farm working expenses less depreciation less wages of management (WOM). WOM is calculated as follows: $38 000 allowance for labour input plus 1 percent of opening total farm assets to a maximum of $85 000.
3 Net cash income.

FINANCIAL PERFORMANCE OF THE NORTHLAND DAIRY MODEL FARM IN 2011/12

The 12 percent increase in production more than compensated for the decline in payout. Net cash income, including revenue from cattle, increased $22 100, up 4 percent. Farm working expenses increased by $32 800, up 11 percent compared with 2010/11. Overall, the cash operating surplus was down 3 percent in 2011/12 compared with 2010/11.

A GOOD SEASON SEES A LIFT IN PRODUCTION

An average of 9.6 tonnes of pasture and crop dry matter per hectare were harvested on monitored farms in 2011/12, up 26 percent on 2010/11. This created a net increase in feed inventory on many farms, with surplus pasture being conserved as silage and carried over into the 2012/13 season. Farms also purchased supplementary feed, importing 932 kilograms of dry matter per hectare in 2011/12, 6 percent down on 2010/11.

May and June were generally warm and wet, but most farms were well set up by 1 June. Average pasture cover was typically 2200 kilograms of dry matter per hectare, 10 to 20 percent higher than average. July was wetter than usual, leading to a relatively rapid drop in pasture growth around the start of calving. Early August brought some relief, with drier weather, but a severe cold spell mid-August brought snow to elevated parts of Northland. A series of frosts on seven to eight consecutive days followed the southerly storm, resulting in a rapid drop in pasture cover.

September was settled and farmers took the opportunity to sow crops early. Difficult wet conditions in October delayed the establishment of summer forage and maize crops into late October and early November. November was dry, particularly in eastern areas where Whangarei and Kerikeri recorded only two days with more than 1 millimetre of rain. This dry spell delayed the emergence of forage crops and put farms under extra pressure. Many farms initiated feeding palm kernel expeller (PKE) to help buffer the impact of dry weather. Despite farmer concerns about a repeat of the dry spring in 2010, widespread rain in early December brought relief and exceptional pasture growth across the region.

Regular rain over summer was reflected in strong milk production through the period. Forage crops were generally grazed later than planned, with farmers grazing crops despite having surplus pasture. Crop yields were 6 to 8 tonnes of dry matter per hectare but with weeds dominating some paddocks.

Kikuyu growth was later than usual due to persistent growth of temperate grasses as a result of the wet weather. Despite warm, moist conditions, reports of facial eczema due to the abundance of feed and relatively high post-grazing residuals were few.

Strong pasture growth continued into the autumn, with regular rain falling throughout the area. A heavy rain event on 19 March resulted in flooding across low-lying parts of Northland and disrupted tanker collection. This rain fuelled pasture growth rates on most farms, creating issues with maintaining control of kikuyu. Exceptional clover growth in many areas was a feature of the autumn. Clover had been largely absent for the past five to eight years following clover root weevil damage and dry spells. Wet weather in April delayed harvest of maize silage and the establishment of new grass, which will put farms under pressure in the winter.

The falling milk price, combined with good pasture growth and cow condition, encouraged farmers to milk longer than usual. This contributed to a relatively rapid drop in pasture cover on some farms as pasture growth rates slowed faster than farmers expected.

Most pasture silage was made late and the quality lower compared with spring pasture silage. The abundance of silage made during the season meant balage was traded at a reasonably low cost of $65 to $70 per bale, 20 percent lower than previous years.

Because of the slow start to the season and low sunshine hours which delayed maturity, maize silage yields were generally average or below average at 16 to 18 tonnes of dry matter per hectare.

PKE fluctuated in price, but was typically around $290 to $310 per tonne landed on-farm. Farmers believe PKE use continues to be profitable, but some are looking to reduce its use given the lower forecast milk price.

EXPENDITURE INCREASED, DESPITE DROP IN PAYOUT

Total farm working expenses for the model increased 11 percent in 2011/12 to $3.89 per kilogram of milksolids. For the monitored farms, working expenses ranged from $2.45 to $5.20. The increase in expenses of $32 800 is mostly due to the decision to employ full-time labour for the 2011/12 season compared with part-time labour last season. This added $20 000 to the expenses and is 60 percent of the overall increase.

Spending on purchased feed declined $10 000 (21 percent) due to good grass growth over the summer, meaning less supplement was purchased. As the stocking rate has increased, the number of cows grazed off for 2011/12 was 100 head compared with 50 head the previous winter. Total feed costs were $295 per cow compared with $330 per cow last season, a decline of 11 percent. Feed costs are now 24 percent of total farm working expenses and the biggest single cost in the model.

Spending increased 17 percent on animal health and 11 percent on animal breeding as farmers invested more money into cows to improve health and reproductive ability.

Fertiliser, lime and nitrogen expenditure increased by $8300, a 13 percent increase on the previous year to $192 per cow. Urea use equated to 84 kilograms of nitrogen per hectare, half the rate usually used, due to feeding of PKE in the spring. Use of PKE means the amount of feed can be changed depending on the amount of grass present. Previously, when the decision was made to use nitrogen, the farmer had to anticipate what might be needed and could use too much or not enough. With PKE, the farm model can immediately adjust the amount used, depending on spring pasture growth.

Fertiliser use equated to 500 kilograms per hectare of 20 percent potassic superphosphate. With the model producing over 700 kilograms of milksolids per hectare, the rate of fertiliser used was below maintenance level. Below maintenance application can be done while soil fertility levels are high but is not sustainable long-term. For most Northland dairy farmers, a return to full maintenance rates will be needed within the next five years.

Farmers are also becoming aware of the nutrient value of effluent, particularly with imported supplement making up an increasing proportion of dairy cows' diet. Many farmers have spent money upgrading effluent systems in recent years. This has involved expanding storage, extending effluent application areas or moving from travelling irrigators to pods to improve effluent applications. Increased use of nutrient budgets and nutrient management plans will help encourage farmers to moderate their fertiliser use if soil fertility is already high.

Repairs and maintenance increased 22 percent from $30 400 to $37 100, which is $130 per cow. The extra spending on repairs and maintenance partly related to making improvements to effluent disposal systems.

Combined the big three items of feed, fertiliser and repairs total $617 per cow – over 50 percent of total farm working expenses. All other farm working expenses were similar to the previous year apart from small increases due to inflation. The exceptions are rates, which were up 8 percent, and insurance up 5 percent.

NET RESULT IS LOWER BUT STILL GOOD

The farm cash surplus for 2011/12 is $40 300, compared with last season of $66 600, a drop of 39 percent. Capital spending of $28 000 was on upgrading of vehicles, and $5700 spent on development was to complete improvements to the effluent disposal system.

Principal repayments have declined to $14 800 compared with $23 800 in the 2010/11 season. Of the total farm debt, 60 percent was on an interest and principal repayment basis. This has been restructured for the current season to 30 percent of the debt on an interest and principal basis, which is more in line with the annual reviews that trading banks carry out with their clients.

There was off-farm income of $17 000, with off-farm income still a feature of many farms in Northland. Drawings increased 10 percent, and off-farm income is used to enable the farm model family to maintain its standard of living.

The net cash position for 2011/12 is $57 300 compared with $85 200 last season, a decline of 33 percent.

BUDGET FINANCIAL PERFORMANCE OF THE NORTHLAND DAIRY MODEL FARM IN 2012/13

The cash operating surplus is budgeted to decrease 38 percent in 2012/13. This is due to both an expected drop in production and the expected lower payout.

Lower production despite a good start to the season

Pasture covers and cow condition were good going into the 2012 winter due to excellent pasture growth during summer and autumn. Feed stocks on hand at the start of the season were 20 percent higher than average, with an extra 200 kilograms of pasture cover and another 200 kilograms per hectare equivalent of extra hay or silage. After two years of low conception rates and a spread-out calving pattern, calving rates are expected to be better this coming spring. Feed budgets for the winter and spring indicate a 10 percent increase in cow milking days by the end of September. This could mean an increase in early spring production, provided the extra cows in milk can be fed well.

The forecast production level for the model is expected to be 84 100 kilograms of milksolids, compared with 88 500 kilograms in 2011/12, a decline of 4400 kilograms or 5 percent. The estimate of 84 100 is based on 290 cows milked at 290 kilograms of milksolids per cow, which is the average per cow production for the past three seasons.

Farmers have been enthusiastic about incorporating PKE into their farm systems, fuelled by difficult seasons and high milk prices. For 2012/13, farmers are expecting to reduce imported supplement use in response to falling milk prices and will be careful about when and how much they feed. Despite these intentions, it is clear that higher levels of imported feed are here to stay and may substitute for summer cropping on some farms. Farmers on the one hand were expecting similar production levels for 2012/13 yet on the other were budgeting to use less supplement.

Farmers' expectations were for the milk price to be $5.85 per kilogram of milksolids, with the dividend income of $0.43 bringing this to a total of $6.28 per kilogram of milksolids. This data was gathered before Fonterra announced its predicted milk price for 2011/12 and 2012/13.

MASSIVE DECLINE IN REVENUE

A major decline of $124 700 in revenue from milksolids is expected as a result of the reduction in milk production and milk payout. In 2011/12, revenue from milksolids, including income for wet shares, was $593 700 compared with $473 500 expected for 2012/13.

Net cattle revenue is also expected to decline from $41 700 last season to $33 600 for 2012/13, a drop of 20 percent. This is based on an expected drop in the price for cull cows from $600 per head in 2011/12 to $450 per head in 2012/13.

It will be interesting to observe the impacts of the decline in revenue on dairy farm systems in Northland. There is a view at present that farm systems are changing from a relatively consistent, predominantly grass-based farming system into two divergent systems, largely in response to climatic and financial volatility. Some farmers are opting for a low cost, low input farming system, often using part or full season once-a-day (OAD) milking to buffer seasonal variation in pasture growth. Other farmers are moving to high intensity, high input farming systems, characterised by reasonably large investments in infrastructure like wintering facilities or feed pads. Both farm systems require quite different skills to manage them effectively.

There is renewed interest in Northland in OAD milking, particularly with the predicted drop in milk price. OAD milking is believed to provide non-feed buffers to seasonal production as cows are less sensitive to underfeeding. Reproduction is consistently better than on twice-a-day milking and there are fewer requirements for bought-in feed. Some farmers are opting for part season OAD milking – either in early lactation for reproduction gains or in late lactation to retain body condition score. Offsetting these advantages, OAD milking reduces production in the first two to three years but, after that transition period, per cow production often increases back to the previous level.

EXPENDITURE DECREASES WITH DROP IN PAYOUT

Farm working expenses are budgeted to decrease $16 400, a drop of 5 percent. Most of this is expected to be from repairs and maintenance, reducing from $37 000 in 2011/12 to $21 700 in 2012/13, a drop of 41 percent. Farm working expenses, however, are expected to stay at $3.89 per kilogram of milksolids, with the reduction in cost balanced by a reduction in production.

Fertiliser spending is budgeted to decline by 5 percent. More nitrogen is expected to be used, however, and the price for potassic superphosphate is expected to increase. Lime use is expected to be the same as last year. The net effect is that fertiliser use is expected to drop from 500 kilograms per hectare in the 2011/12 season to 400 kilograms per hectare in 2012/13. If the expectation is for milksolids production of nearly 700 kilograms per hectare then more than 400 kilograms will be needed to maintain the soil levels.

Changes have been budgeted for in the feeding programme with more spend on grazing. It is expected an extra 20 percent of cows will be grazed off-farm during the winter period. Total feed costs are expected to drop by $5400, with the savings made from purchasing less hay and silage due to the increased stocks on hand. It is also expected that 16 percent less PKE will be used in 2012/13. However, total feed costs, at $0.94 per kilogram of milksolids, will be virtually the same as the 2011/12 season at $0.95 per kilogram of milksolids.

All other items of spending are expected to increase in line with inflation. While many farmers are reporting improved reproductive performance, with empty rates down three percentage points, Northland veterinarians are still reporting empty rates of up to 12 to 15 percent. To reflect this, the farm model expenditure on breeding is budgeted to increase 7 percent, with the extra money to be spent on mating management.

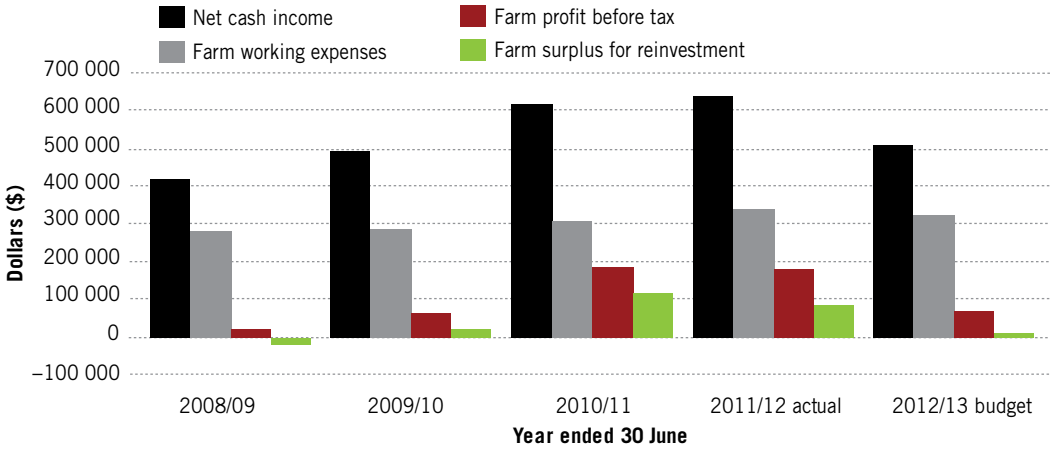
Rates are expected to increase 32 percent, from $7700 to $10 200, for the 2012/13 season. This follows from the differential rating system proposed by the Far North and Kaipara district councils, which targets higher rates for dairy farmers and forestry owners to compensate for trucks impacting on roads.

CASH FARM DEFICIT

A farm cash deficit of $50 300 is budgeted for 2012/13, which is a difference of $90 600 compared with 2011/12. This is due to the projected decline in milk revenue of $124 700. The off-farm income of $17 000 will result in a net cash position of minus $33 300. To break even, the farm model would need to reduce spending further on repairs and have all debt servicing on an interest-only basis.

Capital spending is budgeted to increase 55 percent to $43 400 in 2012/13 because of the need to spend $38 400 to purchase extra Fonterra shares.

Figure 1: Northland dairy model profitability trends



INFORMATION ABOUT THE MODEL

The Northland dairy model represents nearly 1100 spring calving dairy herds north of Auckland city. The remaining suppliers are either split calving or 100 percent autumn calving.

The farm system is classified as a two farm on the DairyNZ production system basis, with moderate feed inputs brought into the farm in response to a feed deficit and young stock grazed off and returned as two-year-olds just before calving. In addition, around 35–40 percent of the cows are grazed off for six to eight weeks during June and July.

For further information on the model contact: **jude.addenbrooke@mpi.govt.nz**

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