

CANTERBURY ARABLE CROPPING

THIS REPORT CONTAINS THE KEY RESULTS FROM THE MINISTRY OF AGRICULTURE AND FORESTRY'S 2009 ARABLE MONITORING PROGRAMME.

KEY POINTS

- Yields and quality were below average for Canterbury crops in 2008/09 after a season of unfavourable weather capped off by a wet harvest.
- Price expectations for cereals rose and then fell markedly during 2008/09, which altered the normal supply and demand patterns. Those most affected were growers with un-contracted cereal crops hoping to make gains trading on the spot market.
- Falling demand for grain saw an increased quantity of crop on hand at the end of 2008/09, resulting in a reduction in cash receipts for the year, and a cash deficit for the model of \$77 900. A cash surplus of \$106 800 is budgeted for 2009/10 as the carried-over cereal stocks are expected to be sold and farm working expenses are reduced by 7 percent.
- The cereal area grown on the farm model will be reduced in the 2009/10 season in favour of proprietary small seeds and process vegetable crops, due to firm prices expected for these products. While contract grain prices have fallen, they remain higher than in 2007/08.
- Despite a correction in land values, equity levels remain high on most arable farms. Investment in capital equipment is focused on efficient use of inputs.

»» TABLE 1: KEY PARAMETERS, FINANCIAL RESULTS AND BUDGET FOR THE CANTERBURY ARABLE CROPPING MODEL

YEAR ENDED 30 JUNE	2005/06	2006/07	2007/08	2008/09	2009/10 BUDGET
Total effective area (ha)	282	285	290	300	300
Effective cropping area (ha)	209	214	230	259	255
Total crop revenue (\$)	499 000	559 900	736 700	844 400	869 300
Sheep opening stock units	1 024	1 010	910	859	759
Lambing (%)	125	122	125	120	130
Gross farm revenue (\$)	653 800	695 600	903 000	1 012 000	1 033 400
Farm working expenses (\$)	393 800	420 600	490 700	597 400	554 800
Farm profit before tax (\$)	96 500	93 200	225 400	198 000	268 300
Farm surplus for reinvestment ¹ (\$)	28 200	54 400	81 500	48 200	208 200

Note

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 discretionary cash less off-farm income and drawings.

»» TABLE 2: CANTERBURY ARABLE MODEL CROP AREAS

YEAR ENDED 30 JUNE CROP	2007/08 (HA)	2008/09 (HA)	2009/10 BUDGET (HA)
Wheat	71	83	80
Barley	35	43	31
Other cereals	5	5	4
Grass seeds	45	48	52
Clover seeds	14	16	18
Vegetable/brassica seeds	15	15	17
Other seeds	7	4	3
Pulses	11	14	18
Silage crops	16	20	15
Process/fresh vegetable crops	11	11	16
Total crop area	230	259	254
Effective area	290	300	300
Percent of effective area in crop	79%	86%	85%



»» TABLE 3: CANTERBURY ARABLE CROPPING MODEL BUDGET



	2008/09		2009/10 BUDGET		CHANGE BETWEEN 2008/09 AND 2009/10 (%)
	WHOLE FARM (\$)	PER HA (\$)	WHOLE FARM (\$)	PER HA (\$)	
REVENUE					
Cereals	310 400	...	397 000	...	28
Small seeds	304 100	...	289 400	...	-4
Other crops	103 400	...	113 300	...	9
Process/fresh vegetables	29 500	...	54 200	...	84
Land leased for cropping	7 800	...	8 400	...	8
Change in value of crop on hand	89 200	...	7 000	...	-92
Total crop revenue	844 400	2 815	869 300	2 898	3
Sheep income (including wool)	232 700	776	228 000	760	-2
Grazing income	38 200	127	35 800	119	-6
Other farm income	50 400	168	51 900	173	3
LESS:					
Sheep purchases	143 800	479	151 600	505	5
Stock value adjustment	-9 900	-33	0	0	...
Gross farm revenue	1 012 000	3 373	1 033 400	3 445	2
Farm working expenses	597 400	1 991	554 800	1 849	-7
Cash operating surplus	414 600	1 382	478 600	1 595	15
Interest	146 100	487	136 700	456	-6
Rent and/or leases	0	0	0	0	...
Depreciation	70 500	235	73 600	245	4
Farm profit before tax	198 000	660	268 300	894	36
Tax	74 000	247	61 800	206	-16
Farm profit after tax	124 000	413	206 500	688	67
Add back depreciation	70 500	235	73 600	245	4
Reverse stock value adjustment	-79 300	-264	-7 000	-23	91
Off-farm income	3 000	10	3 000	10	0
Discretionary cash	118 200	394	276 100	920	134
APPLIED TO:					
Net capital purchases	91 000	303	59 300	198	-35
Development	42 100	140	33 800	113	-20
Drawings	67 000	223	64 900	216	-3
Principal repayments	84 000	280	36 300	121	-57
New borrowings	88 000	293	25 000	83	-72
Introduced funds	0	0	0	0	...
Cash surplus/deficit	-77 900	-260	106 800	356	237
Farm surplus for reinvestment¹	48 200	161	208 200	694	332
ASSETS AND LIABILITIES					
Farm, forest and building (opening)	8 100 000	27 000	7 290 000	24 300	-10
Plant and machinery (opening)	470 000	1 567	490 500	1 635	4
Stock valuation (opening)	97 900	326	88 000	293	-10
Crop valuation (opening)	536 100	1 787	625 300	2 084	17
Other farm related investments (opening)	0	0	0	0	...
Total farm assets (opening)	9 204 000	30 680	8 493 800	28 313	-8
Total liabilities (opening)	1 583 600	5 279	1 636 600	5 455	3
Total equity	7 620 400	25 401	6 857 200	22 857	-10

Symbol

... Not applicable.

Note

¹ Farm surplus for reinvestment is calculated as follows: discretionary cash less off-farm income and drawings.

»» TABLE 4: CANTERBURY ARABLE CROPPING MODEL EXPENDITURE

	2008/09		2009/10 BUDGET		CHANGE BETWEEN 2008/09 AND 2009/10 (%)
	WHOLE FARM (\$)	PER HA (\$)	WHOLE FARM (\$)	PER HA (\$)	
FARM WORKING EXPENSES					
Permanent wages	42 000	140	43 800	146	4
Casual wages	4 200	14	4 200	14	0
ACC – employees	1 100	4	1 300	4	18
Total labour expenses	47 300	158	49 300	164	4
Contracting (including harvesting/drying)	22 500	75	21 600	72	-4
Animal health	3 600	12	3 600	12	0
Breeding	0	0	0	0	...
Electricity	25 800	86	27 300	91	6
Feed (hay and silage)	5 700	19	5 100	17	-11
Feed (crops)	0	0	0	0	...
Feed (grazing)	1 500	5	1 200	4	-20
Feed (other)	1 500	5	1 500	5	0
Fertiliser	152 100	507	101 700	339	-33
Lime	2 300	8	2 400	8	4
Freight	16 500	55	20 400	68	24
Seed dressing	35 400	118	38 100	127	8
Seeds	32 700	109	33 300	111	2
Shearing costs	3 300	11	3 900	13	18
Weed and pest control	93 300	311	98 100	327	5
Fuel	32 700	109	30 300	101	-7
Vehicle costs (excluding fuel)	21 900	73	21 000	70	-4
Repairs and maintenance	34 200	114	30 300	101	-11
Total other working expenses	485 000	1 617	439 800	1 466	-9
Communications	3 900	13	3 900	13	0
Accountancy	4 800	16	5 400	18	13
Legal and consultancy	4 800	16	4 500	15	-6
Other administration	5 100	17	4 500	15	-12
Rates	11 100	37	11 700	39	5
Insurance	12 900	43	13 200	44	2
Water charges	2 400	8	3 900	13	63
Other expenditure (incl. ACC – owners)	20 100	67	18 600	62	-7
Total overhead expenses	65 100	217	65 700	219	1
Total farm working expenses	597 400	1 991	554 800	1 849	-7
Wages of management	75 000	250	75 000	250	0
Depreciation	70 500	235	73 500	245	4
Total farm operating expenses	742 900	2 476	703 300	2 344	-5
CALCULATED RATIOS					
Economic farm surplus (EFS) ¹	269 100	897	330 000	1 100	
Farm working expenses/GFR ²	59%		54%		
EFS/total farm assets	2.9%		3.9%		
EFS less interest and lease/equity	3.5%		4.8%		
Interest+rent+lease/GFR	14%		13%		
EFS/GFR	27%		32%		

Symbol

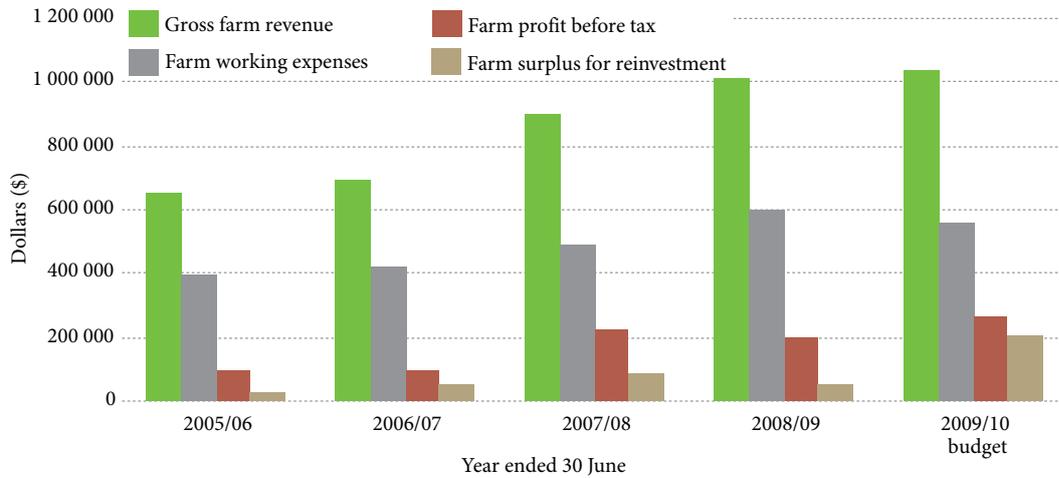
... Not applicable.

Notes

¹ EFS (or earnings before interest and tax) is calculated as follows: gross farm revenue less farm working expenses less depreciation less wages of management (WOM). WOM is calculated as follows: \$31 000 allowance for labour input plus 1 percent of opening total orchard assets to a maximum of \$75 000.

² Gross farm revenue.

»» FIGURE 1: CANTERBURY ARABLE CROPPING MODEL PROFITABILITY TRENDS



FINANCIAL PERFORMANCE OF THE CANTERBURY ARABLE CROPPING MODEL IN 2008/09

REVENUE UP

Gross farm revenue for the Canterbury arable cropping model increased 12 percent in 2008/09 compared with the previous season to \$1 012 000. Higher prices for cereals and small seed crops more than compensated for lower yields in these crops due to unfavourable weather conditions. The model farm's effective area increased 10 hectares to 300 hectares which also led to an increase in the area of crops grown.

PRICES OF CEREALS INCREASED

The cereal area in the model increased again in 2008/09, up 18 percent to 131 hectares in response to rising product prices. The average sale price for wheat in 2008/09 was \$371 per tonne, a 19 percent increase from \$313 in 2007/08. Barley prices increased to \$385 per tonne, up 32 percent compared with 2007/08.

YIELDS MORE VARIABLE THAN USUAL

The average wheat yield in the model decreased from 9.3 tonnes per hectare in 2007/08 to 8.5 tonnes per hectare for the 2008/09 harvest. Wheat yields on the monitored farms ranged from 5.8 to 11.8 tonnes per hectare and some growers outside of the monitored farms reported lower yields still. Some dryland farm yields were limited by poor soil moisture while yields on high performing irrigated farms were curtailed by heat stress.

Barley yields fell to 6.4 tonnes per hectare, down from 8.2 tonnes per hectare in the previous year. The dry November to December period, and heat stress during grainfill contributed to this result and hence most growers were not able to fully capitalise on the high barley prices. Autumn sown barley showed increased foliar disease due to the wet winter and many crops incurred frost damage at flowering. Other barley crops contended with late frosts, hail and a wet harvest, which led to a high incidence of sprouting. Some poorer barley crops were harvested for silage instead of being harvested for grain.

Grass seed yields were affected by heat stress in December, which resulted in disappointing yields, dropping 1.3 tonnes per hectare on average, down to 0.4 tonnes per hectare. However white clover seed crops performed well and yielded above expectations at 0.6 tonnes per hectare; this is higher than the previous two seasons. Although dryland clover crops responded to pre-Christmas rainfalls clover yields were variable, with the monitored farms reporting machine dressed yields of 0.2 to 1.0 tonnes per hectare.

Brassica seed crops, peas and beans (combinable and process), and maize silage generally all produced average yields resulting in improved gross margins due to an improvement in prices compared with 2007/08.



A wet harvest reduced cereal and ryegrass straw yield in some crops and quality was also affected. It is expected that all straws will be sold to dairy farms, even though demand has reduced.

MARKET TIMING AFFECTS PRICES

World and domestic grain prices peaked in early March 2008 before falling sharply. Despite this, New Zealand growers and merchants held onto high price expectations throughout the remainder of 2008. Demand decreased as buyers and sellers could not meet on price, and demand was further diminished as end users substituted locally produced grain for imported grain and other feed types. The domestic grain and seed trade hit a stalemate from June 2008 and at June 2009, demand was still slow.

Non-proprietary grass seed and clover cultivars increased in value through 2008 peaking in September. The Nui grass seed market has since crashed from a high of \$2.60 per kilogram down to \$1.35 per kilogram. This price drop is believed to be the result of very low international demand. Conversely, the price for Huia white clover peaked at \$6.25 per kilogram during the 2008/09 season and by June 2009 was still worth approximately \$5.85 per kilogram. These were record prices and outstripped previous highs of \$4.50 per kilogram seen two years ago.

While many maize silage supply contracts were negotiated down from highs of 30 cents per kilogram of dry matter, and demand decreased due to the falling dairy payout, the industry reported that no contracts were walked away from completely in the Canterbury region.

CROP ON HAND

The value of crop on hand increased by 17 percent during 2008/09 to \$89 200. This was mainly due to increased production in response to rising product prices. Further compounding this increase is that the domestic grain trade stalled in June 2008, meaning some growers were unable to sell harvested grain from both the 2008 and 2009 seasons. Even contracted 2009 harvested grain was slow to leave farm silos. This resulted in greater than usual quantities of stock on hand at balance date and the effect has been poor cash flow and increasing farm overdrafts.

LIVESTOCK CHEWING UP WORKING CAPITAL

Income from sheep and cattle net of purchases increased by 11 percent in 2008/09 compared with the previous year due to higher prices. With lamb schedule prices expected to reach \$5.75 per kilogram or above until December 2009, store lamb prices have risen. This means that the capital outlay required for trading stock was higher than usual with some farms investing over \$500 000 for store lambs, increasing their overdraft interest accordingly. The arable model farm spent \$143 800 on sheep purchases in 2008/09, up from \$81 700 the previous year.

The recent trend of decreasing ewe numbers on arable farms continues in 2008/09. As crop area has increased growers have favoured finishing stock or taking on grazing from off-farm in preference to capital stock. This has reduced the associated seasonal workload pressures involved with breeding ewes. The arable model farm has 859 sheep stock units on opening in 2008/09, a 6 percent decrease compared with the previous year.

FUEL AND FERTILISER DRIVE EXPENSE INCREASE

Farm working expenditure increased 18 percent to almost \$2000 per hectare, after a 15 percent increase the previous year. An increase in the unit costs of fertiliser was a major driver. World demand saw local prices for di-ammonium phosphate (DAP) increase 88 percent between February 2008 and September 2008, increasing from \$950 to \$1783 per tonne. Urea increased from \$699 to \$1111 per tonne in the same period. World demand meant that superphosphate based products were not available in autumn 2008 and growers were forced to use more expensive high-analysis products. Some growers purchased their spring fertiliser requirements in early winter after fertiliser companies broadcasted that price increases were imminent. Fertiliser expenditure within the model reached \$507 per hectare in 2008/09, up 56 percent compared with 2007/08.

INVESTMENT ON-FARM CONTINUING DESPITE CHALLENGES TO CASH FLOW

Growers again took the chance to upgrade plant and machinery during 2008/09, buoyed by expectations of high commodity prices. Net capital purchases for the model were \$91 000 in 2008/09, following expenditure of \$100 000 in

2007/08. This is a significant increase compared with previous years where net capital expenditure averaged \$60 000.

Development expenditure increased by 68 percent to \$42 100 in 2008/09 with the main items being irrigation development and silos.

Principal repayments increased 163 percent to \$84 000 as repayments were made for recent capital purchases. Some farms also managed to pay some principal on term debt with 14 out of the 20 monitored farms making principal repayments in 2008/09.

The farm model budget shows a cash deficit of \$77 900 in 2008/09, after attaining a small cash surplus in the previous year of \$27 500. Reduced cash receipts as a result of slower grain sales are a major determinant of this financial outcome.

Return on assets was a modest 2.9 percent, excluding capital gain. This farm class continues to show a low debt to equity ratio at 17 percent.

BUDGET FINANCIAL PERFORMANCE OF THE CANTERBURY ARABLE CROPPING MODEL IN 2009/10

With crop commodity prices coming off the record highs of late 2008 and banks being more selective with their lending, cash flow on most arable farms in 2009/10 is expected to be tight forcing growers to be more prudent with their financial monitoring. Lower fertiliser and fuel prices combined with lower interest rates will help ease some of the financial pressures.

REVENUE REMAINS INTACT BUT CASH FLOW MAY BE SLOW

Gross farm revenue in the model is expected to increase 2 percent to \$1 033 400 during 2009/10, driven by a sell-down of the high amount of crop on hand at the end of 2008/09.

Industry comments suggest that farmers' valuation of their crop on hand is possibly overestimated and therefore receipts may be lower than anticipated. Furthermore crop on hand is expected to be slow to move, which will stretch farm's cash flow.

SWING TO MILLING WHEAT

Feedback from industry suggests a likely swing from a typical 2 to 1 ratio of feed wheat to milling wheat area in the Canterbury region, to at least a 1 to 1 ratio for the 2009/10 season. An oversupply of feed grains in New Zealand (as at June 2009) is resulting in relatively poor contract prices for feed grain compared with milling wheat contract prices. After many growers missed the price highs on the free market in 2008, they are now prepared to lock into milling wheat contracts for the 2010 harvest.

HERBAGE SEED PRICES FIRM

While cereal prices have fallen, prices for proprietary grass and white clover seeds have remained strong. Prices for the non-proprietary clover cultivar Huia are also expected to remain firm. However Nui ryegrass demand (mainly from overseas) has diminished and grower contracts are reportedly scarce.

OTHER CROPS

Seed companies suggest that spring seed production contracts for vegetable and brassica seed crops will have similar grower prices and areas to last season (2008/09). Consequently the arable farm model expects to grow similar areas of vegetable and brassica seed in 2009/10.

Contract prices for both process and combinable peas and beans are budgeted to remain similar to the high prices achieved in 2008/09, prompting an increase of 20 percent (18 hectares) in the area grown in 2009/10 for the model. Some industry commentators believe that increasing interest in beans as a protein source for animal feeds may lead to a rise in the production of this crop in the medium-term.



As at June 2009 growers were unsure about the demand for supplementary feeds on dairy farms, and how the maize and grass silage prices might respond. Reflecting this uncertainty, the model will decrease its silage area down to 15 hectares in 2009/10, a 25 percent decrease compared with 2008/09.

Growers are encouraged that there will be spring crop options available, including seed crops and process and combinable pea and bean crops, especially as it is anticipated that many growers will find the contract price for spring feed barley unsatisfactory. In addition, malting barley contracts are expected to be more attractive for growers in 2009/10 following a poor malting barley growing season in Australia and New Zealand during 2008/09.

Many 2009 winter grazing contracts were in place before the reduced forecast dairy payout for 2009/10 was announced. However demand seems to have held even though prices are back for 2009/10 to \$18 to \$20 per head per week.

LIVESTOCK INCOME

Lamb shortages and firm prices in the main markets overseas suggest lamb trading could be profitable again in 2009/10 for arable farmers. As store lamb prices are again expected to be high in 2009/10, many arable growers are opting for weight gain contracts whereby merchants and processors own the stock. This means that arable growers can avoid committing working capital to purchase store stock.

Ewe numbers on the arable farm model are expected to stabilise at 300 ewes for 2009/10 in response to high lamb prices. Only 10 of the 20 monitored farms are expected to have ewes in 2009/10.

EXPENDITURE EXPECTED TO DECREASE

Farm working expenditure is expected to decrease by 7 percent in 2009/10, dropping \$142 per hectare to \$1849. Fertiliser and fuel expenditure is expected to fall by 33 and 7 percent respectively, mainly due to lower prices for these inputs. As at June 2009 the price for DAP has fallen to \$827 per tonne, and urea to \$650 per tonne, similar to 2007 prices. Growers expect some price increase in fuel in 2009/10 but not to the levels attained in mid-2008. Machinery upgrades over the last two years have given increased fuel efficiency on some farms.

Expenditure increases are expected for some inputs. Freight is expected to increase by 24 percent in the 2009/10 budget, driven by a swing to milling wheat, where the contracts stipulate delivery to the mill. Growers expect electricity charges to increase by 6 percent; however this includes some new irrigation development which requires electricity. Weed and pest control expenditure is anticipated to increase 5 percent, reflecting the increased area of small seeds and their higher input costs.

CASH SURPLUS EXPECTED

The model budget is expected to return a cash surplus of \$106 800 in 2009/10, a significant improvement on the cash deficit position in 2008/09. This outcome is driven by a sell-down of the high amount of crop on hand at the start of the 2009/10 year, as well as growers being cautious about capital purchases, development, principal repayments, and new borrowings.

The monitored growers and industry commentators believe that land values have decreased over 2008/09 and the model reflects a drop of 10 percent in the opening value for 2009/10 compared with 2008/09. This fall comes in response to cooling demand for land, reduced forecast dairy payouts affecting the wider agricultural industry, and banks being more stringent with their lending criteria.

Debt has increased 3 percent or by \$176 per hectare over the 2008/09 financial year, due to investment back into the business. With a reduction in land values, equity has fallen slightly from 83 to 81 percent.

At the time of writing, many mid Canterbury farms are expecting to commit funding to the pending Barhill Chertsey Irrigation scheme. Involvement in this scheme could cost approximately \$7500 per hectare including share capital contributions and on-farm infrastructure changes. Annual charges and debt servicing costs would be in addition.

INDUSTRY ISSUES AND DEVELOPMENTS

GROWER MORALE AND BUSINESS VIABILITY PLANS

Falling grain demand and reduced prices, leading to rising overdrafts, has impacted on grower morale. Growers with the lowest morale are those who purchased fertiliser and fuel at the price highs and have watched the value of their uncontracted feed grain slide from approximately \$450–500 per tonne to \$300 per tonne – which is the approximate cost of production. Even for those that did contract their crops, produce has been slow to move and therefore cash flow has been tight.

Many growers are dismayed that the expected “best ever year” in 2008/09, actually never eventuated for the farm. Grain prices did not reach the expected highs and difficult climatic conditions during the season capped off by a wet harvest impacted on yield and quality of grain crops. Fortunately growers have had reprieve from two of their largest expenses; fertiliser and fuel.

Some growers are consistently “in excess” of their overdraft limits. Banks are becoming less tolerant of this and as a result of reduced equity due to falling land values, are working closely with the more indebted farms to help manage cash flows.

GROWER RESPONSE TO INPUT PRICE CHANGES AND SHORTAGES

Many growers heeded fertiliser company statements of pending fertiliser price hikes and purchased fertiliser in autumn 2008 before the winter price increases. Although this increased overdrafts earlier than usual, significant savings were able to be made.

Some agrichemicals were also forward purchased in 2008 due to concerns that anticipated demand may push up prices.

ENVIRONMENTAL AND NATURAL RESOURCE MANAGEMENT

Growers are continually examining machinery efficiencies to see where fuel use can be reduced, while minimising the degree of soil disturbance required to establish crops. More cost effective GPS technologies mean that growers and contractors are continuing to avoid over-application of crop inputs by achieving more accurate placement.

Soil nitrogen testing services are becoming more accessible. Growers aim to reduce the amount of nitrogen fertiliser applied where possible. Nutrient budgeting by farmers and fertiliser company representatives continues to be an increasing trend.

Irrigation technologies continue to improve with growers continually researching how to make their water allocations go further.

Access to water for irrigation is foremost for many growers. The Central Plains Water project has been stalled much to the disappointment of affected growers who see water storage as the way forward for the wider Canterbury economy. Investment in the Barhill Chertsey Irrigation scheme has required a lot of thought and discussion by growers and advisors who are weighing up the benefits with the high cost of the scheme and the variable water reliability that the scheme offers.



INFORMATION ABOUT THE MODEL

Canterbury is the largest arable cropping area in New Zealand. The Canterbury arable cropping model represents approximately 500 properties larger than 100 hectares located throughout Canterbury, of which about half are in the mid Canterbury region.

The model is created from information drawn from 20 arable farms and a wide cross-section of agribusiness representatives. The aim of the model is to typify an average arable farm for Canterbury. Budget figures are averaged from the contributing properties and adjusted to represent a real arable farm. Income figures include income from crops and stock, off-farm income, new borrowing, and other cash income. Expenditure figures include costs of production, debt, leasing, drawings and development and capital purchases.

The monitored farms generate more than 50 percent of their income from growing crops. They are generally either more than 75 percent irrigated, or are located in usually reliable rainfall areas. Most properties grow a combination of crops, which are grouped in the budget into cereals, small seeds (including grass, clover and vegetable seeds), process vegetables, silage and other crops. Most have some type of stock enterprise as an integral part of the system, for example, grazing, trading and/or breeding stock.

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