

# **CANTERBURY ARABLE CROPPING**

### **KEY POINTS**

- Crop yields and quality were much better in 2011/12 than in the previous year due to good growing conditions. Wheat yields reached 10.6 tonnes per hectare on average.
- Farm profit before tax for the model increased 136 percent to \$448 700 in 2011/12 mainly due to higher yields increasing the amount of crop on hand. Higher prices for wheat and herbage seeds also contributed.
- Arable farmers are expecting to achieve high profit levels again in 2012/13, with a farm profit before tax of \$425 500 anticipated for the model. A lift in cropping revenue is budgeted due to an increase in cropping area and a rise in prices for small seed crops. A large crop carryover from 2011/12 will help with cash flow.
- Investment in irrigation, either in new systems or upgrading

### Key results from the Ministry for Primary Industries 2012 arable monitoring programme

existing systems, is deemed by many to be essential to maintain business viability.

 Arable farmers are cautiously optimistic as world food demand increases, while locally, the opportunities for dairy support increase.

#### Editor's Note

At the time of publication in mid-August, forward contract prices for wheat and barley crops harvested in 2013 are higher than those offered at the time of data collection in May-June 2012. For example, forward contract prices for feed wheat have risen from \$365 to \$400 per tonne delivered. This is a result of increasing global prices caused by overseas drought. These price lifts should further improve the budgeted financial outcome for arable farmers in 2012/13, above that presented in the following report.

#### Table 1: Key parameters, financial results and budget for the Canterbury arable cropping model

Year ended 30 June	2008/09	2009/10	2010/11	2011/12	2012/13 budget
Total effective area (ha)	300	300	300	300	300
Effective cropping area (ha)	259	263	253	261	276
Total crop revenue (\$)	844 400	885 000	841 300	1 086 700	1 132 800
Sheep opening stock units	859	1 759	1 459	1 219	1 289
Lambing (%)	120	130	125	130	130
Gross farm revenue (\$)	1 012 000	1 073 100	1 005 400	1 272 100	1 270 700
Farm working expenses (\$)	597 400	566 000	567 000	610 500	640 300
Farm profit before tax (\$)	198 000	264 300	190 400	448 700	425 500
Farm surplus for reinvestment 1(\$)	48 200	125 800	208 900	229 100	401 300

#### Notes

The Canterbury arable cropping model is based on an owner-operator business structure.

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 value adjustments less drawings.

#### Table 2: Canterbury arable cropping model crop areas

Year ended 30 June	2010/11	2011/12	2012/13 budget
	(ha)	(ha)	(ha)
Wheat	82	79	89
Barley	33	33	36
Other cereals	4	4	3
Grass seeds	41	46	52
Clover seeds	12	16	15
Vegetable/brassica seeds	20	17	18
Other seeds	11	19	11
Pulses	22	9	10
Silage crops	12	25	25
Process/fresh vegetable crops	16	13	17
Total crop area	253	261	276
Effective area	300	300	300
Percent of effective area in crop	84%	87%	92%

#### Table 3: Canterbury arable cropping model budget

Whole farm (\$)         Whole farm (\$)         Per ha (\$)         Whole farm (\$)         Per ha (\$)         Whole farm (\$)           Revenue Creases         356 500         411 650         -         488 650           Small seeds         332 100         362 550         503 000         54 300           Other copp         7000         14 4000         54 400         54 400           Crease insue of copping         7000         14 4000         52 500         690           Tect cop revene         84 1300         1086 700         362 20         1132 800         3776           Sheep income (including wou)         242 600         423 200         8111         50 500         669           Grang income         63 500         127 000         423         115 400         3855           Stock valie adjustment         -06 00         100         64         -21 400         -21 400         205           Fam working express         137 500         143 900         480         0		2010/11	201	2011/12		budget
(5)         (6)         (1) <td></td> <td>Whole farm</td> <td>Whole farm</td> <td>Per ha</td> <td>Whole farm</td> <td>Per ha</td>		Whole farm	Whole farm	Per ha	Whole farm	Per ha
Revenue         358 500         411 550         488 650           Cereals         332 100         362 550         503 000           Other crops         97 500         96 000         111 700           ParcessFirsh ingatables         58 000         54 300         54 400           Land leased for croping         7 000         14 000         28 880           Cop residues         55 500         48 400         -107 800           Tatal coprevene         841 300         1066 700         3 622         1 132 800         3776           Sheep income (including wol)         242 600         243 200         811         209 600         699           Other farm income         63 500         13 200         444         13 000         433           Less:		(\$)	(\$)	(\$)	(\$)	(\$)
Arthone         358 500         411 650         488 650           Small seeds         332 100         352 550         503 000           Other cross         37 500         54 000         54 400           Process/resh vegetables         58 600         54 400         25 850           Canage in value d crop on hand         -67 400         99 800         -107 800           Change in value d crop on hand         -67 400         99 800         -107 800           Teld torg revenue         64 300         1086 700         3 522         1132 800           Change in value d crop on hand         -67 400         99 800         -107 800         107 00           Sheep income (including wol)         242 600         243 200         811         209 600         699           Grazing income         13 800         13 200         44         13 000         43           Less         Insteame         10 700         235         500 92 300         2105           Stocp purchases         12 800         127 100         4240         127 00         423           Ensistem service         10 300         13 900         400         133 300         410           Ensistem service         10 300         1430         333	Pevenue					
Data         Labor         Table         Second         Second           Other craps         97 500         96 600         111 70           Process/fresh vegetables         58 000         64 300         28 28 50           Congressing vegetables         55 600         44 000         28 88 0           Congressing vegetables         55 600         48 400         57 000           Change in valued crap on hand         -67 400         99 800         6900         699           Sheep income (including wool)         224 200         243 200         811         209 600         699           Graring income         63 500         137 200         443         13 000         43           Cites         Table congression         1270 000         423         115 400         385           Stock value adjustment         -36 400         1270 00         423         1270 700         4230           Cites fram working expenses         567 000         610 500         2305         643 300         143 900           Theres         173 500         143 900         480         133 300         444           Rear and/or leases         0         0         0         0         0         0         0         0	Cereals	358 500	411 650		488 650	
Data and Other crops         Data and Processifiesh regetables         Data and Processifiesh regetablesh regetablesh regetablesh regetablesh regetablesh regetablesh reg	Small seeds	332 100	362 550		503 000	
Outer or opping         23 000         14 000         15 4 400           Land leased for cropping         7 000         14 000         25 850           Corp residues         55 600         48 400         77 000           Change in value of crop on hand         -67 400         99 800         -107 800           Teal corp residue         64 1300         1068 700         56 22         112 800         3776           Sheep income (including wool)         242 600         243 200         811         20 00         143           Other farm income         13 8000         13 200         44         13 000         43           Ess:	Other crops	97 500	96 000		111 700	
Total legends         Discolution         Discolution         Discolution         Discolution           Change link divergends         55 600         44 400         57 900         -107 800           Change link used crop on hand         -67 400         99 800         -107 800         610           Total crop revene         941 300         1086 700         3 622         1132 800         3776           Sheep income (including wool)         242 600         243 200         4811         29 900         699           Grang income         63 6500         453 300         151         29 100         43           Cher purchases         103 600         13 200         44         13 000         43           Less	Process/fresh vegetables	58 000	50 000		54 400	
Late action of copying (Copy residues)         15 000         14 000         17 000           Change in value of crop on hand         -67 400         99 800         -107 800           Total crop revenue         641 300         1 086 700         3 622         1 132 800         3 776           Sheep income (including wool)         242 600         243 200         811         52 100         174           Other farm income (including wool)         242 600         243 200         811         52 100         174           Other farm income         18 000         13 200         44         13 000         433           Sheep purchass         123 500         127 000         4235         115 400         385           Stock value adjustment         -36 400         10700         36         -21 400         301           Chast operating surplus         438 400         661 600         2205         603 0400         2101           Interest         173 500         143 900         480         133 300         444           Reat operating surplus         98 100         112 000         373         15500         517           Tam profit before tax         190 400         448 700         1496         425 500         1418	Land leased for cropping	7 000	14 000		25 850	
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Integration         Original	Change in value of crop on hand	-67 400	99 800		-107 800	
Intervent         Control         Contro         Control <thcontrol< th=""> <t< td=""><td></td><td>841 300</td><td>1 086 700</td><td>3 622</td><td>1 132 800</td><td>3 776</td></t<></thcontrol<>		841 300	1 086 700	3 622	1 132 800	3 776
Grazing income         63 500         45 300         151         52 100         174           Other fam income         18 000         13 200         44         13 000         43           Less:         123 600         127 000         423         115 400         385           Stock value adjustment         -36 400         127 100         424         127 000         423           Grass fam reving expenses         567 000         610 500         2 035         664 030         2 134           Cash operating supplus         438 400         161 500         2 035         660 300         2 101           Interest         173 500         143 900         400         0 <td>Sheep income (including wool)</td> <td>242 600</td> <td>243 200</td> <td>811</td> <td>209 600</td> <td>699</td>	Sheep income (including wool)	242 600	243 200	811	209 600	699
Dther farm income         18 000         13 200         44         13 000         43           Less:         Sheep purchases         123 600         127 000         423         115 400         385           Stock value adjustment         -36 400         10 700         36         -21 400         -71           Gross fam revenue         1005 400         1272 100         4 240         1270 700         4 236           Gast operating surplus         438 400         661 500         2 205         630 400         2 101           Interest         173 500         143 900         480         133 300         444           Rent and/or leases         0 <td>Grazing income</td> <td>63 500</td> <td>45,300</td> <td>151</td> <td>52 100</td> <td>174</td>	Grazing income	63 500	45,300	151	52 100	174
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Sheep purchases         123 600         127 000         423         115 400         385           Stock value adjustment         -36 400         10 700         36         -21 400         -71           Gross farm revenue         1005 400         1272 100         4 230         127 070         4 230           Gain operating surplus         438 400         661 600         2 205         630 400         2 134           Cash operating surplus         438 400         661 600         2 205         630 400         2 101           Interest         173 500         64 000         230         71 600         239           Farm profit dero tax         199 400         448 700         148 700         373         155 500         1517           Tax         98 100         112 000         373         155 500         902           Allocation of funds         64 000         230         71 600         239         71 600         239         71 600         239         71 600         239         71 600         239         71 600         239         71 600         230         71 600         239         71 600         230         71 600         230         71 600         230         71 600         230         71 6	ess:					
Stock value adjustment         -36 400         10 700         36         -21 400         -71           Gross fam revenue         1 005 400         61 500         2 335         640 300         2 134           Cash operating supplus         4 38 400         661 600         2 205         630 400         2 101           Interest         173 500         143 900         480         133 300         444           Rent and/or lesses         0<	Sheep purchases	123 600	127 000	423	115 400	385
Gross fam revenue         1 005 400         1 272 100         4 240         1 270 700         4 226           Fam working expenses         567 000         601 500         2 035         640 300         2 134           Cash operating surplus         133 500         143 900         480         133 300         444           Rent and/or leases         0	Stock value adjustment	-36 400	10 700	36	-21 400	-71
Farm vorking expenses         567 000         610 500         2 035         640 300         2 134           Cash operating surplus         438 400         661 600         2 205         630 400         2 101           Interest         173 500         143 900         480         133 300         444           Rent and/or leases         0 </td <td>Gross farm revenue</td> <td>1 005 400</td> <td>1 272 100</td> <td>4 240</td> <td>1 270 700</td> <td>4 236</td>	Gross farm revenue	1 005 400	1 272 100	4 240	1 270 700	4 236
Cash operating surplus         438 400         661 600         2 205         630 400         2 101           Interest         173 500         143 900         480         133 300         444           Rent and/or leases         0	Farm working expenses	567 000	610 500	2 035	640 300	2 134
Interest         173 500         143 900         480         133 300         444           Rent and/or leases         0	Cash operating surplus	438 400	661 600	2 205	630 400	2 101
Rent and/or leases         0         0         0         0         0         0         0           Depreciation         74 500         69 000         230         71 600         239           Farm profit before tax         190 400         448 700         1496         425 500         1418           Tax         98 100         11 200         373         155 000         517           Farm profit after tax         92 300         336 700         11 22         270 500         902           Allocation of funds         C         C         C         C         C         C           Add back depreciation         74 500         69 000         230         71 600         239         Reverse stock value adjustment         103 800         -110 600         -369         129 200         431           Drawings/lwing expenses         61 800         66 000         227         70 000         233           Farm surplus for reinvestment'         208 900         229 100         764         401 300         133           Development         92 000         146 000         487         26 000         83           Principal repayments         60 700         72 800         243         78 000         260	Interest	173 500	143 900	480	133 300	444
Depreciation         74 500         69 000         230         71 600         239           Farm profit before tax         190 400         448 700         1 496         425 500         1 418           Tax         98 100         112 000         373         155 000         517           Farm profit after tax         92 300         336 700         1 122         270 500         902           Allocation of funds         60 000         230         71 600         239         71 600         239           Add back depreciation         74 500         69 000         230         71 600         239           Drawings/living expenses         61 800         66 000         220         70 000         233           Farm surplus for reinvestment*         208 900         229 100         764         401 300         1 338           Reinvestment         92 000         146 000         487         25 000         83           Principal repayments         60 700         72 800         243         78 000         260           Farm cash surplus/deficit         18 200         -75 700         -252         258 300         861           Other cash surplus/deficit         18 200         76 00 00         0 <t< td=""><td>Rent and/or leases</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></t<>	Rent and/or leases	0	0	0	0	0
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Tax         98 100         112 000         373         155 000         517           Farm profit after tax         92 300         336 700         1 122         270 500         902           Allocation of funds         74 500         69 000         230         71 600         239           Add back depreciation         74 500         69 000         230         71 600         239           Pewerse stock value adjustment         103 800         -110 600         -369         129 200         431           Drawings/living expenses         61 800         66 000         220         70 000         233           Farm surplus for reinvestment'         208 900         229 100         764         401 300         1 338           Net capital purchases         38 8000         287         40 000         133           Development         92 000         146 000         487         25 000         88           Other cash sources         78         258 300         262         0         0         0           New borrowings         58 000         78 500         262         0         0         0         0         0         0         0         0         0         0         0         0 </td <td>Farm profit before tax</td> <td>190 400</td> <td>448 700</td> <td>1 496</td> <td>425 500</td> <td>1 418</td>	Farm profit before tax	190 400	448 700	1 496	425 500	1 418
Farm profit after tax         92 300         336 700         1 122         270 500         902           Allocation of funds Add back depreciation         74 500         69 000         230         71 600         239           Reverse stock value adjustment         103 800         -110 600         -369         129 200         431           Drawings/living expenses         61 800         66 000         220         70 000         233           Farm surplus for reinvestment <sup>1</sup> 208 900         229 100         764         401 300         1 338           Reinvestment         92 000         146 000         487         25 000         83           Principal repayments         60 700         72 800         243         78 000         260           Farm cash surplus/deficit         18 200         -75 700         -252         258 300         861           Other cash sources         0	Tax	98 100	112 000	373	155 000	517
Allocation of funds Add back depreciation         74 500         69 000         230         71 600         239           Reverse stock value adjustment         103 800         -110 600         -369         129 200         431           Drawings/living expenses         61 800         66 000         220         70 000         233           Farm surplus for reinvestment <sup>1</sup> 208 900         229 100         764         401 300         1 338           Reinvestment         92 000         146 000         487         25 000         83           Principal repayments         60 700         72 800         243         78 000         260           Farm cash surplus/deficit         18 200         -75 700         -252         258 300         861           Other cash sources         0         0         0         0         0         0         0           Net borrowings         58 000         78 500         25 333         8 700 000         25 8300         861           Assets and liabilities         77 600 000         7 600 000         25 333         8 700 000         29 000           Plant and machinery (opening)         7 600 000         25 333         8 700 000         22 900           Plant and machinery (opening	Farm profit after tax	92 300	336 700	1 122	270 500	902
Alde Catolin of Tunios       74 500       69 000       230       71 600       239         Add back depreciation       74 500       69 000       -369       129 200       431         Drawings/living expenses       61 800       66 000       220       70 000       233         Farm surplus for reinvestment <sup>1</sup> 208 900       229 100       764       401 300       1 338         Reinvestment       92 000       146 000       487       25 000       83         Principal repayments       60 700       72 800       243       78 000       260         Farm cash surplus/deficit       18 200       -75 700       -252       258 300       861         Other cash sources       New borrowings       58 000       78 500       262       0       0         Net cash position       76 100       2 800       9       258 300       861         Assets and liabilities       7       76 0000       7 600 000       25 333       8 700 000       29 000         Plant and machinery (opening)       7 600 000       7 600 000       25 333       8 700 000       29 000         Plant and machinery (opening)       209 000       184 500       615       195 300       651         <	Allegation of funds					
Ald back dependent in the second s	Add back depreciation	74 500	69,000	220	71 600	220
Interest stock value adjustment       105 800       110 800       129 200       1431         Drawings/living expenses       61 800       66 000       220       70 000       233         Farm surplus for reinvestment <sup>1</sup> 208 900       229 100       764       401 300       1338         Reinvestment        229 100       764       401 300       133         Development       92 000       146 000       487       25 000       83         Principal repayments       60 700       72 800       243       78 000       260         Farm cash surplus/deficit       18 200       -75 700       -252       258 300       861         Other cash sources         78 500       262       0       0       0         New borrowings       58 000       78 500       262       0	Reverse stock value adjustment	102 900	110 600	250	120 200	421
Dramgenent         Or 800         220         70 000         233           Farm surplus for reinvestment'         208 900         229 100         764         401 300         1 338           Reinvestment         92 000         146 000         487         25 000         83           Development         92 000         146 000         487         25 000         833           Principal repayments         60 700         72 800         243         78 000         260           Farm cash surplus/deficit         18 200         -75 700         -252         258 300         861           Other cash sources         New borrowings         58 000         78 500         262         0         0           Introduced funds         0         0         0         0         0         0         0         0           Net cash position         76 100         2 800         9         258 300         861           Assets and liabilities         7         7         700         253 33         8 700 000         29 000           Plant and machinery (opening)         7 600 000         7 600 000         25 333         8 700 000         29 000           Plant and machinery (opening)         7600 000 <t< td=""><td></td><td>61 900</td><td>-110 000</td><td>-309</td><td>70 000</td><td>431</td></t<>		61 900	-110 000	-309	70 000	431
raim suppris for reinvestment         200 300         223 100         704         401 300         1 330           Reinvestment         38 000         86 000         287         40 000         133           Development         92 000         146 000         487         25 000         83           Principal repayments         60 700         72 800         243         78 000         260           Farm cash surplus/deficit         18 200         -75 700         -252         258 300         861           Other cash sources         0		208 000	220 100	764	401 300	1 233
Reinvestment         38 000         86 000         287         40 000         133           Development         92 000         146 000         487         25 000         83           Principal repayments         60 700         72 800         243         78 000         260           Farm cash surplus/deficit         18 200         -75 700         -252         258 300         861           Other cash sources             260         0         0           New borrowings         58 000         78 500         262         0         <		208 900	225 100	704	401 300	1 330
Net capital purchases         38 000         86 000         287         40 000         133           Development         92 000         146 000         487         25 000         83           Principal repayments         60 700         72 800         243         78 000         260           Farm cash surplus/deficit         18 200         -75 700         -252         258 300         861           Other cash sources         Composition         78 500         262         0         0         0           New borrowings         58 000         78 500         262         0	Reinvestment					
Development         92 000         146 000         487         25 000         83           Principal repayments         60 700         72 800         243         78 000         260           Farm cash surplus/deficit         18 200         -75 700         -252         258 300         861           Other cash sources         Second         0	Net capital purchases	38 000	86 000	287	40 000	133
Principal repayments         60 700         72 800         243         78 000         260           Farm cash surplus/deficit         18 200         -75 700         -252         258 300         861           Other cash sources         S8 000         78 500         262         0         0         0           New borrowings         58 000         78 500         262         0         0         0           Introduced funds         0	Development	92 000	146 000	487	25 000	83
Farm cash surplus/deficit         18 200         -75 700         -252         258 300         861           Other cash sources         58 000         78 500         262         0	Principal repayments	60 700	72 800	243	78 000	260
Other cash sources         58 000         78 500         262         0         0           Introduced funds         0 </td <td>Farm cash surplus/deficit</td> <td>18 200</td> <td>-75 700</td> <td>-252</td> <td>258 300</td> <td>861</td>	Farm cash surplus/deficit	18 200	-75 700	-252	258 300	861
New borrowings         58 000         78 500         262         0         0           Introduced funds         0	Other cash sources					
Introduced funds         0	New borrowings	58 000	78 500	262	0	0
Off-farm income         0	Introduced funds	0	0	0	0	0
Net cash position         76 100         2 800         9         258 300         861           Assets and liabilities	Off-farm income	0	0	0	0	0
Assets and liabilities         7 600 000         7 600 000         25 333         8 700 000         29 000           Plant and machinery (opening)         496 900         460 400         1 535         477 300         1 591           Stock valuation (opening)         220 900         184 500         615         195 300         651           Crop valuation (opening)         631 900         564 500         1 882         664 300         2 214           Other farm related investments (opening)         0         0         0         0         0         0           Total farm assets (opening)         1 931 600         1 928 900         6 430         1 929 700         6 432           Total equity         7 018 100         6 880 500         22 935         8 107 200         27 024	Net cash position	76 100	2 800	9	258 300	861
Assets and itabilities         7 600 000         7 600 000         25 333         8 700 000         29 000           Plant and machinery (opening)         496 900         460 400         1 535         477 300         1 591           Stock valuation (opening)         220 900         184 500         615         195 300         651           Crop valuation (opening)         631 900         564 500         1 882         664 300         2 214           Other farm related investments (opening)         0	Access and linkilizing					
Plant, forest and building (opening)       7 600 000       7 600 000       25 333       8 700 000       29 000         Plant and machinery (opening)       496 900       460 400       1 535       477 300       1 591         Stock valuation (opening)       220 900       184 500       615       195 300       651         Crop valuation (opening)       631 900       564 500       1 882       664 300       2 214         Other farm related investments (opening)       0       0       0       0       0       0         Total farm assets (opening)       8 949 700       8 809 400       29 365       10 036 900       33 456         Total liabilities (opening)       1 931 600       1 928 900       6 430       1 929 700       6 432         Total equity       7 018 100       6 880 500       22 935       8 107 200       27 024	Assets and Habilities	7 600 000	7 600 000	25 222	9 700 000	20,000
Train and machinely (opening)       450 500       460 400       1 535       477 300       1 591         Stock valuation (opening)       220 900       184 500       615       195 300       651         Crop valuation (opening)       631 900       564 500       1 882       664 300       2 214         Other farm related investments (opening)       0       0       0       0       0         Total farm assets (opening)       1 931 600       1 928 900       6 430       1 929 700       6 432         Total equity       7 018 100       6 880 500       22 935       8 107 200       27 024	Plant and machinery (opening)	106 000	/ 600 000	20 333	477 200	1 501
Crop valuation (opening)       631 900       164 500       615       195 300       661         Crop valuation (opening)       631 900       564 500       1 882       664 300       2 214         Other farm related investments (opening)       0       0       0       0       0         Total farm assets (opening)       1 931 600       1 928 900       6 430       1 929 700       6 432         Total equity       7 018 100       6 880 500       22 935       8 107 200       27 024	Stock valuation (opening)	490 900	194 500	1 000	477 300	1 091
Other farm related investments (opening)         0	Crop valuation (opening)	631 000	184 500	1 000	195 300	2 214
Outer harm related meeting (opening)         O	Other farm related investments (opening)	001 900	504 500	1 002	004 300	2 2 1 4
Total liabilities (opening)         1 931 600         1 928 900         6 430         1 929 700         6 432           Total equity         7 018 100         6 880 500         22 935         8 107 200         27 024	Total farm assets (opening)	8 949 700	8 809 400	29 365	10 036 900	33 456
Total equity         7 018 100         6 880 500         22 935         8 107 200         27 024	Total liabilities (opening)	1 931 600	1 928 900	6 430	1 929 700	6 432
	Total equity	7 018 100	6 880 500	22 935	8 107 200	27 024

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 value adjustments less drawings.

#### Table 4: Canterbury arable cropping model expenditure

	2010/11	2011/12		2012/13		3 budget	
	Whole farm (\$)	Whole farm (\$)	Per ha (\$)		Whole farm (\$)	Per ha (\$)	
Farm working expenses							
Permanent wages	45 000	49 800	166		51 000	170	
Casual wages	6 000	6 000	20		6 000	20	
ACC - employees	900	1 200	4		1 350	5	
Total labour expenses	51 900	57 000	190		58 350	195	
Contracting (including harvesting/drying)	27 000	28 500	95		19 800	66	
Animal health	4 200	4 500	15		4 500	15	
Breeding	0	0	0		0	0	
Electricity	21 600	18 000	60		24 600	82	
Feed (hay and silage)	9 000	9 000	30		9 000	30	
Feed (crops)	0	0	0		0	0	
Feed (grazing)	4 200	5 400	18		3 600	12	
Feed (other)	2 100	1 800	6		1 800	6	
Fertiliser	112 950	110 550	369		126 250	421	
Lime	2 400	7 550	25		7 550	25	
Freight	20 100	24 000	80		27 000	90	
Seed dressing	29 100	36 000	120		34 500	115	
Seeds	35 260	30 000	100		31 800	106	
Shearing costs	6 300	6 300	21		6 500	22	
Weed and pest control	85 050	94 500	315		96 300	321	
Fuel	32 400	38 700	129		38 700	129	
Vehicle costs (excluding fuel)	24 900	23 400	78		23 100	77	
Repairs and maintenance	35 700	40 800	136		35 700	119	
Total other working expenses	452 260	479 000	1 597		490 700	1 636	
Communications (phone and mail)	4 200	4 500	15		4 500	15	
Accountancy	6 000	6 000	20		6 000	20	
Legal and consultancy	3 600	3 600	12		4 500	15	
Other administration	4 800	4 800	16		4 800	16	
Rates	11 400	11 700	39		14 400	48	
Insurance	16 500	16 800	56		27 000	90	
Water and related charges	8 400	16 800	56		16 800	56	
Other expenditure (including ACC - owners)	7 960	10 300	34		13 250	44	
Total overhead expenses	62 860	74 500	248		91 250	304	
Total farm working expenses	567 010	610 500	2 035		640 300	2 134	
Calculated ratios							
Economic farm surplus (EFS) <sup>1</sup>	288 900	517 600	1 725		483 800	1 613	
Farm working expenses/GFR <sup>2</sup>	56%	48%			50%		
EFS/total farm assets	3.2%	5.9%			4.8%		
EFS less interest and lease/equity	1.6%	5.4%			4.3%		
Interest+rent+lease/GFR	17%	11%			10%		
EFS/GFR	29%	41%			38%		
Wages of management	75 000	75 000	250		75 000	250	

Notes 1 EFS 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 farm assets to a maximum of \$75 000.

2 Gross farm revenue.

### FINANCIAL PERFORMANCE OF THE CANTERBURY ARABLE CROPPING MODEL IN 2011/12

Farm profit before tax increased 136 percent to \$448 700 for the year ended June 2012. This was influenced by good yields and prices for cereals and seed crops and a significant lift in the volume of crop on hand.

The model size remained at 300 hectares, with the crop area increasing 8 hectares to 261 hectares.

### NEAR RECORD YIELDS PROPEL CROP REVENUE

Total gross revenue from crops, after adjustments for stock on hand, increased 29 percent to \$1.09 million in 2011/12. More crops were grown, in particular, silage and seed crops.

Favourable climatic conditions during the 2011/12 growing season resulted in above-average yields for most crops. Wheat yields were up around 3 tonnes per hectare on last season, at 10.6 tonnes per hectare. Ryegrass seed yields also exceeded expectations, at 1760 kilograms per hectare.

Higher production resulted in higher closing stocks of feed wheat and barley at year end. Most of the 2011/12 feed wheat and barley crops were contracted, meaning buyers were in no rush to purchase free-market feed grain. Conversely, milling wheat was in short supply pre-harvest, so was delivered to the mills steadily during the first half of 2012, helping to draw down stocks from the previous year.

Cereal production increased significantly in 2011/12 due to an increase in planted area and above-average yields in the main producing regions. The Arable Industry Marketing Initiative farm survey suggests 2012 national production for feed wheat was 415 100 tonnes, up 65 percent, while feed barley production was 419 400 tonnes, up 36 percent on 2010/11.

### Quality maintained during frustrating harvest

The 2012 harvest season in Canterbury was continually disrupted by wet weather, in particular, during February. However, expected losses in grain and seed quality generally did not eventuate. Milling wheat had slightly below average protein levels but excellent protein quality.

Lower than average temperatures during grain fill in December 2011 and January 2012 prevented sprouting and helped starch levels to build up in feed grains. Germination tests of seed crops to date have been satisfactory. However, grain and seed that went into storage with higher than ideal moisture contents are at risk of losing quality during the year.

#### **Prices improve**

Contract prices for cereals were good at the beginning of the 2011/12 season, following strong global prices towards the end of 2010/11. Farmers were able to secure contracts for premium milling wheat at \$465 per tonne delivered; feed wheat at \$415 per tonne delivered; and feed barley at \$390 per tonne delivered.

Free-market prices for feed wheat and barley weakened to around \$350 per tonne in the first half of 2012 due to over supply from good yields.



#### Figure 1: Mid-Canterbury rainfall

Source NIWA (Winchmore).

Average prices received across the monitored farms lifted about \$30 per tonne for wheat to \$400 per tonne in 2011/12 but remained stable for barley at \$370 per tonne.

Herbage seed prices rose nearly 10 percent across a range of species at up to \$2.20 per kilogram for proprietary perennial ryegrass and up to \$5.50 per kilogram for proprietary white clover cultivars.

Lamb trading margins in 2011/12 were excellent at \$35 to \$55 per head and, consequently, additional lambs were finished. The model had 1500 finished lambs in 2011/12 compared with 1400 in the previous year.

#### EXPENSES CONTINUE TO CREEP

Total farm working expenses rose 8 percent on 2010/11 levels to \$610 500, or \$2035 per hectare, influenced by an increase in crop area and a wetter growing season.

Frequent rain events during the growing season led to a lift in expenditure on weed and pest control by 11 percent to \$94 500, as more herbicides, growth regulators and fungicides were used. Seed dressing increased 24 percent to \$36 000 due to increased small seed areas and yields plus delayed dressing of the 2011 harvest.

Fuel expenditure rose 19 percent to \$38 700 due to increased crop area plus the need for more crop drying because of higher moisture content in seed crops and grains at harvest.

Freight expenses were up 19 percent to \$24 000 due to relatively more milling wheat being delivered to the mills (some earlier than usual), while the price of fuel also increased.

Water charges doubled to \$16 800 due to a combination of the first full season of annual charges for some new irrigation schemes, and new annual charges on irrigation consents by Environment Canterbury.

The wet season helped to reduce electricity expenses by 17 percent to \$18 000, with less irrigation needed.

#### **GOOD NET RESULT**

Due to the lift in revenue in 2011/12, the farm working expenses to gross farm revenue ratio dropped to 48 percent from 56 percent in 2010/11.

Interest expenses for the model fell 17 percent from \$173 500 to \$143 900, despite new borrowing in 2010/11. Term interest rates dropped to an average of 6.6 percent. Most farms are on short-term fixed-rate contracts or floating rates, which means interest expenses are reducing, thereby helping farmers to pay off overdrafts and make principal repayments.

Farm profit before tax increased 136 percent to \$448 700. Most farmers have sought to reassess their provisional tax payments for 2011/12 within the year, rather than carrying forward a large tax liability into 2012/13. The model reflects this position, with tax payments of \$112 000 made in 2011/12.

The model reported a satisfactory farm surplus for reinvestment at \$229 100, allowing for significant investments in capital items and development work on-farm. Typical capital purchases by the monitored farms were tractors, cultivation implements, motorbikes and combine harvester upgrades. Development is mainly in irrigation, sheds and silos. Farmers believe that farm values have increased because of investment in irrigation and a short-lived surge in the property market at the end of 2011 and beginning of 2012. Land and building values

for the model increased during 2011/12 to reach \$29 000 per hectare at year end, up from around \$25 000 at the start of the year. Land values for arable farms of course vary greatly across the Canterbury region, depending on soil type and whether they are dryland or irrigated farms.





Note

1 GDD – growing degree days. GDDs are calculated by taking the average of the daily high and low temperatures each day compared with a baseline (usually 10 degrees centigrade). They help to predict the date that a flower will bloom or a crop reach maturity. **Source** 

NIWA (Winchmore).

### BUDGET FINANCIAL PERFORMANCE OF THE CANTERBURY ARABLE CROPPING MODEL IN 2012/13

Arable farmers are anticipating another excellent financial outcome in 2012/13, with a profit before tax of \$425 500 budgeted for the model.

### HIGH REVENUE TO BE MAINTAINED

Total crop revenue is anticipated to increase 4 percent to \$1.13 million in 2012/13, driven by increased crop area and a lift in prices for small seed crops.

The contracted area for ryegrass production for export is up significantly in the Canterbury region for the 2013 harvest, due to a seasonal supply shortfall in Europe. Proprietary ryegrass and white clover contract prices are up 20 percent and 15 percent respectively, albeit constrained by the high New Zealand dollar. Contracted production and prices of specialist vegetable seed are not expected to change in 2012/13, due to balanced supply and demand.

Income from grazing is expected to remain relatively stable, mainly for dairy support. The model is budgeting on lower sheep income due to a reduction in the number of lambs traded and in the expected trading margin to \$30 per head at best.

#### Large opening feed grain stocks

Following good yields in the 2012 harvest, there are near record opening stocks of feed grains both in New Zealand and Australia. Forward contract prices for 2013 crops are being reported at \$365 per tonne delivered, as at June 2012. High protein bread wheat and low protein biscuit wheat are in short supply. Forward contract prices for 2013 crops offer a higher premium than usual for premium milling and biscuit wheat, at \$430 and \$420 per tonne respectively.

#### Dairy support evolving

Fewer dairy cows were wintered in 2012 across the monitored farms compared with recent years. This is likely due to good feed surpluses on dairy run-offs, plus extra silage cut from milking platforms.

Arable farms grew more silage in 2011/12 to sell

to dairy farms including grass and maize silage, and lucerne baleage. This trend is set to continue, as shown by the increase in total crop area for silage from 5 percent in 2010/11 to 9 percent in 2012/13.

## MODERATE INCREASE IN EXPENDITURE

Farmers anticipate being able to hold expenditure in 2012/13 to an overall 5 percent increase. This would hold the ratio of farm working expenses to gross farm revenue at 50 percent, which is considered a healthy level.

The main drivers for the expected lift in farm working expenses are:

- a return to typical electricity use for irrigation;
- increased freight due to high production in 2011/12;
- higher fertiliser prices;
- increased compliance costs especially with regard to resource consents; and
- higher insurance premiums, in particular for farm buildings.

Industry commentators expect the ratio of farm working expenses to gross farm income to rise to a more usual 55 percent to 60 percent in 2013/14, with lower revenue expected from the sale of the 2013 crop due to lower contract prices.

#### NET RESULT REMAINS POSITIVE

Arable farmers are anticipating another excellent financial outcome in 2012/13, with a profit before tax of \$425 500 budgeted for the model. Accountants and farmers are anticipating another year of increased tax payments and are making provisions accordingly.

Despite the lift in tax payments, farmers anticipate substantial farm surpluses for reinvestment. These surpluses are likely to be used to repay debt.

Development expenditure is expected to reduce after a two- to three-year period of irrigation investment on the monitored farms. Farmers now expect a period of consolidation, after these recent infrastructural developments.



#### Figure 3: Canterbury arable cropping model profitability trends

### **INDUSTRY ISSUES AND DEVELOPMENTS**

## FARMER MORALE AND BUSINESS VIABILITY PLANS

Morale amongst most arable farmers has been boosted by good financial outcomes in 2011/12 and prospects of sustained profitability and good cash flow in 2012/13.

Many farmers in the Canterbury region regard irrigation as essential. It sustains the viability of their business by protecting from major financial losses in drought years and provides consistent production volumes that buyers can rely on. A viable business, underpinned by irrigation, gives more chance of succession within the family farming business. Generally, farmers will invest in irrigation rather than in more land.

Some farmers are holding back from other farm development and capital expenditure in anticipation of pending irrigation schemes in the Canterbury region. By managing debt now, they hope to have stronger balance sheets later when they need to secure finance for irrigation development.

Proactive farmers have invested in on-farm drying systems for drying grain and seed crops harvested in high-humidity weather. Seed with high moisture levels will spoil during storage. Growers who did not have this key infrastructure during the wet 2012 harvest have realised their economic vulnerability. Many are now investigating the development of drying systems.

Arable farmers are constantly monitoring the economics of dairy farming. Consistent cash flow,

less harvest risk, ease of marketing, profitability and farm succession are the main reasons cited by farmers when considering conversion to dairy production.

### FARMER RESPONSE TO INPUT PRICE CHANGES AND SHORTAGES

Each year, farmers have more working capital committed but the same inherent risks of crop failure. Many are choosing crop options that involve less working capital outlay and less production risk, while saving on overdraft interest. Examples are forage crops for contract grazing and silage crops sold standing. Moreover, these options have fewer labour requirements and better cash flow, for similar income.

Increasingly, arable farms have dairy farm neighbours. This provides further opportunities for dairy support where cartage and/or stock walking distance is minimal. This reduces the amount of fuel, time and labour expenses incurred by the arable farmer, compared with delivering grain and seed to the main centres. It reduces the price of "landed" supplementary feed to the dairy farm and the distance travelled when regularly checking on stock grazed off-farm.

Most dairy farms require support from other farms in terms of grazing and supplementary feed. Each dairy conversion brings new opportunities for arable farmers to increase trade with dairy farmers, giving arable farmers alternative markets for their produce. Seed companies are aware of this competition for land use and are having to pay higher prices to secure land for seed multiplication.

#### Grass grub control

Farmers are concerned about the potential deregistration of diazinon in New Zealand as a result of the on-going review of this organophosphate by the Environmental Protection Authority. Diazinon is used by arable farmers to control grass grub, a significant pest of several crops, and is deemed to be the most effective product currently available.

#### ENVIRONMENTAL AND NATURAL RESOURCE MANAGEMENT

Over two-thirds of the monitored farms are irrigated and half of these have been undergoing irrigation reinvestment or development during 2011/12. If short of irrigation water, farmers are watching for opportunities to contract additional volumes, in expectation that the growing dairy industry will require more water in the future. Recognising that water allocations are limited, farmers are upgrading irrigation hardware and investing in new technologies to increase water-use efficiency.

Arable farmers understand and respect the concept of using nutrients efficiently to prevent losses from farm systems and protect water quality. There is some trepidation about how regional councils might set and manage limits for water quality in the future as the national policy statement for fresh water management is implemented. Farmers are concerned about potential compliance costs. They are also concerned about what tools or instruments might be used in a regulatory plan to measure nutrient loss and their likely accuracy.

### **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 18 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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