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Animal Production Science

Utilising dual-purpose crops effectively to increase profit and manage risk in meat production systems

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Supplementary Material

Details of farm business profit calculations for the Canberra systems experiment

Farm business profit was calculated for each farmlet following the concepts used by the Australian Bureau of Agricultural and Resource Economics and Sciences.

Cash receipts included receipts from grain and livestock products, plus hay that was cut from ley pasture plots in 2013 and 2014 and agistment fees for wethers bright into the WCG farmlets in winter 2014. Receipts for each product, and cash expenses for fertilizers and for grain for supplementary feeding were calculated using prevailing price values in each year of the experiment (Table S1). Livestock prices were taken from Meat and Livestock Australia's records for the Yass saleyard in the week that each group of sheep was removed from the experiment. Wool from the experimental sheep was sold along with that from the rest of

the flock on the experiment station, and the prices received for the relevant bales were recorded. Farm-gate grain prices were computed from Australian Bureau of Statistics data for the free-on-board prices by deducting the cost of road transport to Port Kembla, port and handling fees.

Expenses for livestock husbandry, shearing and crutching, crop management activities (assumed to be performed by contractors), the costs of selling and transporting livestock and wool to market and crop insurance were calculated from the activities undertaken on each farmlet and constant costs (Table S2). Operating finance (overdraft) costs were calculated from a monthly cash flow analysis with an overdraft interest rate of 5.5% p.a. Other fixed costs comprising repairs and maintenance ($28/ha), rates ($12/ha), interest other than operating finance ($17/ha), administration expenses ($12/ha), other cash costs ($3/ha) and veterinary fees ($1.10 /ewe) were taken from ABARES survey data.

An operator allowance of $70,000 and depreciation of $26,000 were distributed across an assumed farm size of 900 ha.

Table S1. Annually-varying prices and costs used for financial analysis of the Canberra systems experiment (nominal values)

		Year			
Item	Price	2013	2014	2015	2016
Weaner sheep, ~12 months of age	$/kg LW	2.31	2.55	2.66	2.92
Cull ewes	$/head		71.58		
Trade sheep	$/kg LW		2.68		
Wool – ewes	$/kg GFW	9.66	9.11	10.64	11.81
Hay	$/t	180	250		
Wheat (farm gate)	$/t	285	275	252	209
Canola (farm gate)	$/t	467	437	479	498
Oats (farm gate)	$/t	176	186	208	183
Lupins (farm gate)	$/t	283	288	235	233
Barley (farm gate)	$/t	239	229	234	189
Fertiliser - Granulock 15	$/t	690	705	810	780
Fertiliser – urea	$/t	570	560	570	500
Fertiliser – MAP	$/t	690	655	750	720

Fertiliser - triple super	$/t	513	433	509	511
Fertiliser - single super (+molybdenum)	$/t	350	326	350	330

Table S2. Constant costs used for financial analysis of the Canberra systems experiment

Item		Price	Item		Price
Shearing	$/head	6.36	Herbicides, insecticides & fungicides		
Crutching	$/head	1.89	Ally	$/kg	44.00
Marking	$/head	2.65	Avadex Xtra	$/L	10.45
Agistment	$/head.d	0.05			
Wool: warehouse & testing charges	$/bale	76.55	Broadstrike	$/kg	600.00
Wool: cartage	$/bale	3.86	Bromoxynil 200 g/L	$/L	9.22
Wool: packs	$/bale	11.50	Dicamba 500 g/L	$/L	23.10
Ewe scanning	$/head	0.85	Dual Gold	$/L	16.00
Transport of sale stock	$/head	2.00	Emerge	$/L	49.50
Bucket cubes	$/kg	1.00	Fastac Duo	$/L	50.00
Salt+Causmag	$/kg	0.91	Garlon	$/L	20.45
Seed:			Glyphosate 450 g/L	$/L	7.00
Wheat	$/kg	0.97	Hammer	$/L	280.00
Canola	$/kg	27.00	Hussar (granular)	$/kg	71.50
Cocksfoot	$/kg	8.95	Hussar OD	$/L	143.00
Subterranean clover	$/kg	6.53	Impact (flutriafol)	$/L	11.22
Phalaris	$/kg	20.00	Intervix	$/L	42.50
Machinery & operations costs:			Kerb (propyzamide)	$/L	23.76
Cultivation	$/ha	30.00	Launch (tebuconazole)	$/L	12.00
Wheat sowing	$/ha	45.00	Lontrel	$/L	25.00
Canola sowing	$/ha	45.00	Lorsban	$/L	10.00
Pasture sowing	$/ha	45.00	MCPA	$/L	10.00
Fertilizer application	$/ha	8.50	Paraquat	$/L	7.00
Herbicide application	$/ha	10.00	Pirimor (pirimicarb)	$/kg	38.50
Forage cutting	$/ha	45.00	Rancona	$/L	49.33
Forage baling	$/ha	20.00	Sakura	$/kg	340.00
Canola windrow	$/ha	35.00	Select (clethodim)	$/L	12.00
Mulch failed crop or stubble	$/ha	40.00	Trifluralin 480 g/L	$/L	7.50
Wheat harvest	$/ha	65.00	Velocity	$/L	31.50
Canola harvest	$/ha	95.00	Verdict	$/L	48.00
Animal health products					
Clik	$/L	50.00			
Glanvac 6	$/L	468.00			
Gudair	$/head	2.47			
Rametin Combo	$/head	0.45			
Tremacide 120	$/L	70.10			
Tri-solfen	$/head	0.75			