Table S1. Predicted dry matter intake (DMI: kg/day) and liveweight change (LWC: g/day) for crossbred (Border Leicester x Merino or Dorset x Merino) castrated male lambs initially 30kg and 6 months old fed cereal and cereal/vetch forages grown in New South Wales, Australia at Wagga Wagga in 2008, Culcairn in 2009, Temora in 2010 and Coolamon in 2011.

Cereal Variety	Harvest	Cereal crops												Cereal/vetch crops									
		Wagga Wagga			Culcairn			Temora			Coolamon			Wagga Wagga			Culcairn			Temora			Coolamon		
		DMI	LWC		DMI	LWC		DMI	LWC		DMI	LWC		DMI	LWC		DMI	LWC		DMI	LWC		DMI	LWC	
Echidna	1	1.3	242	*	0.9	107	*	1.2	73	*	1.1	181	*	1.5	273	*	1.6	252	*	1.3	90		1.4	180	*
Mannus	1	1.4	250	*	0.9	124	*	1.2	135	*	1.2	200	*	1.7	319	*	1.7	306	*	1.4	147		1.5	184	*
Gairdner	1	1.6	307	*	0.9	139	*	1.3	84		1.3	257	*	1.6	319	*	1.7	258		1.4	140		1.6	245	*
Urambie	1	1.7	335	*	0.9	146	*	1.5	212	*	1.2	234	*	1.7	338	*	1.7	270		1.5	163		1.5	220	*
Wedgetail	1	1.6	323	*	0.8	114	*	1.4	147	*	1.2	213	*	1.8	382	*	1.6	222		1.4	111		1.5	216	*
Strzelecki	1	1.3	255	*	1.0	165	*	1.3	116	*	1.2	207	*	1.6	319	*	1.6	204		1.4	118		1.5	198	*
Tobruk	1	1.3	227	*	0.9	102	*	1.3	118	*	1.3	219	*	1.7	320	*	1.6	229		1.4	132		1.5	191	*
Echidna	2	1.2	165	*	0.8	74	*	1.0	26	*	1.1	139	*	1.4	209	*	1.2	155	*	1.3	96		1.3	137	*
Mannus	2	1.2	132	*	0.8	73	*	1.1	59	*	1.0	98	*	1.5	210	*	1.6	231		1.3	108		1.2	110	*
Gairdner	2	1.3	223	*	0.8	89	*	1.2	60	*	1.1	159	*	1.4	212	*	1.6	207		1.3	80		1.2	151	*
Urambie	2	1.3	207	*	0.8	94	*	1.3	113	*	1.2	163	*	1.4	222	*	1.6	241		1.3	104		1.3	156	*
Wedgetail	2	1.4	251	*	0.9	107	*	1.3	88	*		nc		1.3	228	*	1.6	207		1.3	92			nc	
Strzelecki	2	1.3	175	*	0.9	110	*	1.2	83	*				1.5	229	*	1.5	188		1.4	112				
Tobruk	2	1.2	169	*	0.7	38	*	1.0	7	*	1.1	138	*	1.6	232	*	1.6	252	*	1.4	120		1.4	141	*
Echidna	3	1.2	164	*	0.8	65	*	1.0	7	*	1.1	95	*	1.2	132	*	1.5	198	*	1.2	56		1.4	130	*
Mannus	3	1.2	103	*	0.7	38	*	1.0	29	*	1.1	97	*	1.4	161	*	1.4	191	*	1.2	71		1.3	110	
Gairdner	3	1.2	185	*	0.8	71	*	1.1	43		1.1	111	*	1.3	169	*	1.5	216	*	1.4	111		1.4	151	*
Urambie	3	1.4	221	*	0.8	85	*	0.9	74	*	1.1	103	*	1.5	238	*	1.6	226		1.2	62		1.4	141	*
Wedgetail	3	1.3	207	*	0.8	49	*	1.0	50	*	1.1	119	*	1.3	197	*	1.4	147	*	1.2	71		1.4	158	*
Strzelecki	3	1.2	164	*	0.8	48	*	1.0	36	*	0.9	58	*	1.4	187	*	1.5	167		1.3	94		1.3	122	*
Tobruk	3	1.3	153	*	0.8	27	*	0.9	12	*	1.0	74	*	1.5	203	*	1.4	150		1.2	77		1.3	108	*
Echidna	4				0.7	-3	*	0.9	-22	*	1.0	48	*				1.4	145		1.0	13				
Mannus	4				0.7	21	*	0.9	-37	*	1.0	30	*				1.4	151	*	1.2	66				
Gairdner	4				0.7	43	*	1.0	13	*	0.9	45	*				1.5	167		1.2	49				
Urambie	4		nc		0.8	69	*	0.9	53	*	0.8	19	*		nc		1.5	174		1.3	101			nc	
Wedgetail	4				0.8	46	*	0.9	30	*	1.1	69	*					nc							
Strzelecki	4				0.8	63	*	0.9	30	*	0.8	7	*				1.4	141			nc				
Tobruk	4				0.7	23	*	0.8	13	*		nc						nc							

nc = not cut at this harvest due to lodging or early senescence caused by moisture stress. * Inadequate crude protein content for the level of available metabolisable energy.

Table S2. Predicted dry matter intake (DMI) and liveweight change (LWC) for British breed steers initially 300kg and 12 months old fed cereal and cereal/vetch forages grown in New South Wales, Australia at Wagga Wagga in 2008, Culcairn in 2009, Temora in 2010 and Coolamon in 2011.

Cereal Variety	Harvest	Cereal crops												Cereal/vetch crops									
		Wagga Wagga			Culcairn			Temora			Coolamon			Wagga Wagga			Culcairn			Temora		Coolamon		
		DMI	LWC		DMI	LWC		DMI	LWC		DMI	LWC		DMI	LWC		DMI	LWC		DMI	LWC	DMI	LWC	
Echidna	1	8.4	1.74	*	5.6	0.68	*	7.8	0.51	*	7.3	1.28	*	9.8	1.94	*	10.4	1.82		8.0	0.54	9.4	1.36	*
Mannus	1	9.4	1.85	*	5.6	0.76	*	8.1	0.91	*	8.3	1.49	*	11.1	2.33		11.1	2.33	*	9.0	1.01	9.6	1.30	
Gairdner	1	10.6	2.31	*	5.6	0.85	*	7.9	0.51		8.4	1.81	*	10.4	2.30	*	10.5	1.83		8.9	0.95	10.4	1.76	
Urambie	1	11.0	2.47	*	5.6	0.90	*	9.6	1.51	*	8.1	1.63	*	10.9	2.48	*	10.6	1.90		9.3	1.12	10.0	1.57	
Wedgetail	1	10.4	2.34	*	5.3	0.74	*	9.0	1.01		7.8	1.56	*	9.7	2.27		10.0	1.55		8.5	0.74	10.1	1.64	*
Strzelecki	1	8.4	1.78	*	6.9	1.23	*	8.6	0.82	*	7.8	1.43	*	10.4	2.30	*	9.8	1.42		8.6	0.79	9.8	1.45	*
Tobruk	1	8.7	1.68	*	5.6	0.62	*	8.6	0.79		8.4	1.51		11.1	2.33		10.0	1.59		8.8	0.89	9.6	1.30	
Echidna	2	8.0	1.21	*	5.1	0.45	*	6.4	0.10	*	7.2	0.94	*	9.2	1.52	*	8.3	1.13	*	8.2	0.60	8.6	0.99	*
Mannus	2	7.7	0.93	*	5.3	0.46	*	7.0	0.33	*	6.6	0.70	*	9.9	1.49		10.0	1.59		8.4	0.69	7.9	0.74	*
Gairdner	2	8.8	1.58	*	5.3	0.59	*	7.5	0.35		7.2	1.08	*	8.8	1.50	*	9.8	1.42		7.9	0.51	8.6	1.15	*
Urambie	2	8.4	1.42	*	5.1	0.60	*	8.1	0.75	*	7.5	1.11	*	9.6	1.66	*	10.3	1.69		8.4	0.69	8.6	1.08	*
Wedgetail	2	9.3	1.86	*	5.6	0.69	*	8.0	0.54			nc		8.8	1.62	*	9.8	1.42		8.2	0.60		nc	
Strzelecki	2	8.4	1.24	*	5.6	0.66	*	7.6	0.54	*				10.0	1.70	*	9.6	1.30		8.5	0.74			
Tobruk	2	8.0	1.24	*	4.7	0.18	*	6.2	-0.12		7.6	0.97	*	10.3	1.69	*	10.4	1.82		8.6	0.79	9.0	1.01	*
Echidna	3	8.1	1.13	*	5.2	0.39	*	6.2	-0.12		7.0	0.60	*	7.7	0.93	*	9.6	1.40	*	7.4	0.31	8.7	0.84	
Mannus	3	7.6	0.68	*	4.7	0.18	*	6.5	0.13	*	7.4	0.62	*	9.1	1.12	*	9.6	1.44	*	7.7	0.43	8.4	0.69	
Gairdner	3	8.0	1.27	*	4.9	0.42	*	7.0	0.20		6.9	0.71	*	8.4	1.15	*	10.1	1.64	*	8.5	0.74	9.1	1.05	
Urambie	3	8.8	1.55	*	4.9	0.51	*	6.3	0.48	*	6.9	0.66	*	10.0	1.78	*	10.0	1.55		7.5	0.38	8.9	0.95	
Wedgetail	3	8.4	1.42	*	5.1	0.33	*	6.6	0.27	*	7.2	0.75	*	8.4	1.35	*	9.0	1.01		7.7	0.43	9.1	1.06	
Strzelecki	3	8.1	1.13	*	5.1	0.26	*	6.5	0.17	*	5.6	0.29	*	9.4	1.36	*	9.3	1.12		8.2	0.60	8.6	0.82	
Tobruk	3	8.3	1.00	*	5.1	0.10	*	5.6	-0.03	*	6.6	0.44	*	9.8	1.42		9.0	1.01		7.7	0.45	8.4	0.69	
Echidna	4				4.4	-0.16	*	5.8	-0.31	*	6.6	0.25	*				8.9	0.95		6.3	-0.07			
Mannus	4				4.7	0.05	*	5.5	-0.50		6.3	0.15	*				9.1	1.05		7.5	0.38			
Gairdner	4				4.7	0.22	*	6.4	-0.03		6.1	0.25	*				9.3	1.12		7.2	0.26			
Urambie	4		nc		5.0	0.39	*	5.9	0.32	*	5.3	0.05	*		nc		9.4	1.17		8.3	0.65		nc	
Wedgetail	4				4.9	0.23	*	5.6	0.11	*	7.0	0.40						nc						
Strzelecki	4				5.5	0.37	*	5.6	0.11	*	5.0	-0.06	*				8.9	0.95			nc			
Tobruk	4				4.7	0.07	*	5.3	0.00	*		nc						nc						

nc = not cut at this harvest due to lodging or early senescence caused by moisture stress. * Inadequate crude protein content for the level of available metabolisable energy.

Table S3. Predicted mean yield (kg DM/ha) at each harvest of cereal and cereal/vetch crops grown in four years at four sites in southern NSW .

Cereal variety	Wagga 2008 [1]			Culcairn 2009 [1]				Temora 2010 [1]				Coolamon 2011 [2]			
	Harvest			Harvest				Harvest				Harvest			
	1	2	3	1	2	3	4	1	2	3	4	1	2	3	4
Cereal crops															
Echidna	1569	2278	2200	7080	7810	8832	9988	17569	28019	25935	27280	5007	5531	5809	4808
Mannus	1914	2624	2546	4172	5298	8700	8057	20622	19704	21567	28266	4090	5619	5943	5194
Gairdner	1530	2240	2162	4258	5458	5677	6911	19263	16222	17946	31338	3402	5970	5152	4368
Urambie	1815	2525	2447	4599	5573	5624	7218	10125	16323	20102	25842	2868	4933	5928	5205
Wedgetail	1414	2124	2046	6504	7236	7861	6985	13603	21098	24852	28742	3657	*	3895	4562
Strzelecki	1780	2490	2412	4091	4789	5954	6353	15121	15429	22035	27950	4052	*	5401	6100
Tobruk	1806	2516	2438	6705	8555	8566	8280	15973	21401	30724	37718	3468	4461	5777	*
Cereal + vetch crops															
Echidna	1201	1911	1833	7377	8381	8181	8445	17215	22968	28916	29573	4571	4250	4174	*
Mannus	1547	2257	2179	4340	5740	7920	6384	15038	25789	17813	23207	3654	4338	4309	*
Gairdner	1163	1872	1794	5856	7330	6326	6669	14860	14172	24954	14472	2965	4688	3517	*
Urambie	1448	2158	2080	5509	6756	5584	6287	10198	12270	19575	17310	2432	3652	4293	*
Wedgetail	1047	1757	1679	5592	6598	6000	*	14470	16578	14042	*	3221	*	2261	*
Strzelecki	1413	2122	2044	5919	6891	6834	6341	16132	16196	14649	*	3615	*	3767	*
Tobruk	1439	2149	2071	5534	7657	6446	*	16563	17578	17112	*	3032	3179	4143	*

* No harvest of this treatment

[1] Significant year x variety x vetch x harvest interaction ($p < 0.001$; $lsd_{(p<0.05)} = 3052$) for 2008, 2009 and 2010.

[2] Significant variety x harvest ($p = 0.039$; $lsd_{(p<0.05)} = 1251.4$) and vetch x harvest ($p = 0.042$; $lsd_{(p<0.05)} = 727.6$) interactions for 2011.

Table S4. Predicted mean vetch content (g/kg) at each harvest of cereal/vetch crops grown in four years at four sites in southern NSW .

Cereal variety	Wagga 2008 [1]			Culcairn 2009 [1]				Temora 2010 [1]				Coolamon 2011 [2]		
	Harvest			Harvest				Harvest				Harvest		
	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Echidna	282.9	298.2	306.5	392.1	421.5	548.6	550.5	333.6	399.6	448.4	541.0	300.4	319.7	378.9
Mannus	191.9	207.3	215.6	454.7	543.8	357.6	541.8	396.1	462.1	510.9	603.5	424.7	274.0	394.7
Gairdner	319.1	334.4	342.8	597.4	591.8	757.9	782.6	630.2	696.3	745.1	837.7	277.7	*	332.1
Urambie	166.4	181.7	190	682.7	495.6	878.5	763	530.6	596.7	645.5	738.1	531.6	624.1	*
Wedgetail	188.8	204.2	212.5	767.3	783.1	724	*	579.4	645.5	694.3	*	416.4	*	*
Strzelecki	304	319.3	327.6	775.9	729.2	794.6	346.6	722.3	788.4	837.2	*	407.6	*	*
Tobruk	216	231.4	239.7	654.5	721.2	741.3	*	601.5	667.5	716.3	*	396.7	467.2	*

* No harvest of this treatment

[1] Significant year x variety interaction ($p = 0.004$; $lsd_{(p < 0.05)} = 142.96$) and main effect of harvest ($p < 0.001$; $lsd_{(p < 0.05)} = 57.54$) for 2008, 2009 and 2010.

[2] No significant effect of variety, harvest or variety x harvest on vetch content.

Table S5. Crude protein content (g/kg) at each harvest of cereal and cereal/vetch crops grown in four years at four sites in southern NSW .

Cereal variety	Wagga 2008 [1]			Culcairn 2009 [1]				Temora 2010 [1]				Coolamon 2011 [2]			
	Harvest			Harvest				Harvest				Harvest			
	1	2	3	1	2	3	4	1	2	3	4	1	2	3	4
Cereal only crops															
Echidna	129.5	108.7	116.6	69.8	60.0	61.3	49.8	97.3	76.2	72.8	56.9	105.3	95.5	89.5	85.4
Mannus	139.7	107.2	103.5	78.1	62.5	54.2	54.2	117.9	81.7	80.8	67.2	116.2	84.4	97.1	77.2
Gairdner	168.5	130.4	114.5	85.4	63.5	57.3	53.5	133.0	114.4	122.1	96.0	131.3	94.8	89.2	75.6
Urambie	181.2	121.2	128.5	83.8	63.1	60.4	59.0	141.2	122.4	90.2	87.1	123.8	100.2	88.8	62.1
Wedgetail	173.1	139.7	123.1	69.4	69.0	59.4	56.7	132.1	112.7	86.5	73.8	117.1	*	95.6	90.6
Strzelecki	136.2	119.9	116.4	98.3	74.8	59.6	65.0	127.8	105.7	87.7	75.6	113.4	*	74.1	58.5
Tobruk	129.5	108.7	116.6	71.5	54.0	59.0	53.3	128.8	90.2	61.4	63.0	120.4	105.4	82.5	*
Cereal + vetch crops															
Echidna	154.1	135.4	106.6	167.3	116.5	140.6	146.5	163.4	161.1	154.1	128.5	137.0	119.3	136.3	*
Mannus	189.1	150.6	135.6	177.7	176.9	139.6	134.4	184.0	166.6	162.1	138.9	148.0	108.3	143.9	*
Gairdner	171.6	127.2	123.1	212.1	172.7	147.9	156.5	199.0	199.3	203.3	167.6	163.1	118.7	136.0	*
Urambie	180.2	138.3	148.9	215.4	190.0	175.6	160.8	207.3	207.4	171.5	158.8	155.6	124.1	135.5	*
Wedgetail	212.6	133.7	122.2	201.7	172.5	138.3	*	198.1	197.7	167.7	*	148.8	*	142.3	*
Strzelecki	174.5	148.9	138.7	200.8	181.0	153.5	179.5	193.9	190.6	169.0	*	145.2	*	120.8	*
Tobruk	182.2	159.3	153.7	191.0	162.9	166.5	*	194.9	175.2	142.6	*	152.1	129.3	129.3	*

* No harvest of this treatment

[1] Significant year x variety x vetch x harvest interaction ($p = 0.008$; $lsd_{(p < 0.05)} = 25.42$) for 2008, 2009 and 2010.

[2] Significant variety x harvest ($p = 0.014$; $lsd_{(p < 0.05)} = 17.79$) and vetch x harvest ($p = 0.042$; $lsd_{(p < 0.05)} = 10.34$) interactions for 2011.

Table S6. Digestible organic matter content (g/kg) at each harvest of cereal and cereal/vetch crops grown in four years at four sites in southern NSW .

Cereal variety	Wagga 2008 [1]			Culcairn 2009 [1]				Temora 2010 [1]				Coolamon 2011 [2]			
	Harvest			Harvest				Harvest				Harvest			
	1	2	3	1	2	3	4	1	2	3	4	1	2	3	4
Cereal only crops															
Echidna	828.2	763.4	749.3	812.2	784.7	760.1	664.0	664.7	606.9	566.6	546.9	837.2	775.5	716.2	647.4
Mannus	809.1	734.8	695.5	829.4	774.1	731.2	689.9	716.3	644.5	611.5	526.5	819.8	758.1	698.8	629.9
Gairdner	818.2	789.4	769.8	848.7	803.8	792.8	750.2	665.6	633.8	610.4	568.6	859.6	797.8	738.6	669.7
Urambie	828.4	773.0	783.2	859.1	827.1	820.5	776.0	744.8	692.6	708.3	688.5	848.2	786.5	727.2	658.4
Wedgetail	821.8	799.8	775.0	852.0	813.8	745.1	737.5	709.9	661.6	644.0	644.7	859.5	797.8	738.5	669.6
Strzelecki	828.3	755.9	744.5	847.6	806.1	724.0	728.3	692.8	673.7	625.2	639.6	839.7	778	718.7	649.8
Tobruk	810.5	769.9	726.0	797.4	733.0	676.4	699.2	687.5	566.3	606.6	624.2	814.6	752.9	693.6	624.7
Cereal + vetch crops															
Echidna	808.4	767.7	740.4	784.0	749.8	747.7	692.7	666.7	657.6	628.5	567.2	758.3	727.9	698.5	*
Mannus	800.8	737.0	714.2	820.1	768.5	749.8	703.3	713.3	670.0	630.8	617.5	740.9	710.5	681.1	*
Gairdner	826.4	774.6	743.2	780.5	742.1	760.3	713.5	701.1	663.0	677.0	619.8	780.7	750.3	720.8	*
Urambie	835.7	769.3	770.5	789.8	765.2	748.2	713.2	726.3	686.7	636.0	659.7	769.4	738.9	709.5	*
Wedgetail	834.2	789.4	767.5	761.3	739.9	693.9	*	690.3	668.7	638.6	*	780.6	750.2	720.8	*
Strzelecki	822.3	765.3	740.1	753.4	734.0	708.9	684.3	696.0	683.7	650.0	*	760.8	730.4	701	*
Tobruk	805.8	754.6	730.8	765.3	771.4	702.3	*	699.5	671.3	631.3	*	735.7	705.3	675.9	*

* No harvest of this treatment

[1] Significant year x variety x vetch x harvest interaction ($p = 0.049$; $lsd_{(p < 0.05)} = 51.68$) for 2008, 2009 and 2010.

[2] Significant main effect of vetch ($p < 0.001$; $lsd_{(p < 0.05)} = 27.44$) and harvest ($p < 0.001$; $lsd_{(p < 0.05)} = 31.72$).