NSW DEPARTMENT OF
PRIMARY INDUSTRIES

Readers' Note

This document is part of a larger publication. The remaining parts and full version of the publication can be found at:

http://www.dpi.nsw.gov.au/agriculture/livestock/sheep/sheepmeat/publications/dams

Updated versions of this document can also be found at the above web address.

APPENDIX A1 – SIRE PROGENY MEANS

A1.1 Sire progeny means for annual $ income and gross margins - 1stX ewes

Sire	$ Income	$GM	$GM/DSE	Sire	$ Income	$GM	$GM/DSE
BL2	120.22	108.34	39.77	Cp36	111.91	96.07	37.79
BL8	98.79	83.26	32.56	Cp37	69.97	56.81	26.09
BL12	117.08	101.66	37.79	Cp65	93.18	79.45	31.62
BL13	118.39	103.40	39.09	Cp74	101.71	87.63	34.55
BL24	96.37	82.66	34.25	Cp85	129.63	114.33	41.28
BL25	101.72	87.76	34.91	WS10	100.14	89.29	33.81
BL32	107.74	93.35	36.67	WS33	115.88	100.54	37.22
BL35	81.13	66.67	28.32	WS42	113.60	98.73	35.96
BL52	108.93	94.52	36.99	WS51	112.07	98.15	36.53
BL53	98.20	82.75	34.20	WS60	98.23	82.70	32.88
BL54	119.46	102.54	37.81	WS80	96.78	82.71	31.80
BL61	105.68	91.19	39.11	WS90	123.24	108.00	39.33
BL62	106.09	91.61	35.29	Cr4	94.88	81.29	35.47
BL70	100.55	86.66	33.67	Cr11	87.64	73.97	33.32
BL71	108.40	94.14	36.40	Cr20	101.49	87.63	39.51
BL81	107.33	93.04	35.69	Cr27	94.44	81.28	35.28
BL82	112.99	98.49	37.99	Cr46	101.46	87.88	39.47
BL83	113.16	98.69	37.12	Cr64	88.43	75.25	34.68
EF6	105.06	89.01	36.05	BoL1	86.67	71.59	27.71
EF19	130.41	114.88	42.54	BoL15	107.09	96.35	34.76
EF28	118.14	103.10	38.38	BoL34	90.84	80.82	31.96
EF39	123.56	109.77	39.68	BoL43	104.62	94.16	34.98
EF44	122.45	107.34	41.38	BoL55	98.52	93.48	34.66
EF45	136.48	121.16	44.03	BoL63	92.75	82.81	31.62
EF47	116.09	101.09	39.58	Hy29	102.10	87.93	38.20
EF59	112.26	95.94	36.45	Hy30	103.61	89.29	38.2
EF77	106.76	92.21	36.02	Hy75	111.14	96.51	37.99
EFP68	98.01	83.76	31.53	Hy87	116.16	101.27	38.79
EFR69	104.95	90.29	33.70	EL57	86.79	72.08	31.42
EFP89	106.47	91.85	35.47	EL73	50.28	39.28	18.88
Fi3	114.44	98.51	36.68	Gr41	90.39	77.61	33.39
Fi7	104.58	89.92	34.62	Gr86	105.66	91.54	37.28
Fi9	103.15	87.43	35.66	M56	88.69	75.67	37.53
Fi17	112.52	97.34	37.52	M72	93.14	79.23	33.06
Fi21	117.14	101.77	40.13	Ro14	103.04	89.23	35.20
Fi22	102.87	88.26	36.37	Ro49	101.58	87.90	36.64
Fi23	113.11	97.49	38.11	PD31	111.91	97.15	37.59
FL40	113.16	98.06	36.75	PD79	88.81	75.54	30.47
FiF48	115.43	100.39	38.28	Ch66	94.27	80.86	31.47
Fi67	97.17	82.78	32.11	SAM84	125.82	110.80	41.23
FiF76	98.33	84.42	32.74	SHD78	87.19	73.89	30.61
Fi88	109.73	94.65	35.65	Tx50	96.21	82.95	32.85
Cp5	110.21	95.49	37.74	WD91	112.42	98.11	36.35
Cp16	120.14	105.16	40.17	WH58	97.43	81.91	31.18
Cp18	94.28	80.85	33.03	Cc38	93.15	81.95	33.16
Cp26	115.45	100.48	39.81				

$ Income = average annual $ income from 2ndX lambs slaughtered and 1stX ewe wool
$GM = average annual $ gross margin per ewe
$GM/DSE = average annual $ gross margin per dry sheep equivalent
Based on first 3 joinings and shearings of 1stX ewes

A1.2 Sire progeny means for annual lambing rate - 1stX ewes

Sire	LW (%)	LB (%)	LS	Sire	LW (%)	LB (%)	LS
BL2	121.4	139.7	1.62	Cp36	110.9	132.8	1.50
BL8	96.7	114.0	1.43	Cp37	64.8	89.4	1.31
BL12	111.7	133.7	1.57	Cp65	91.6	115.8	1.54
BL13	116.4	139.9	1.55	Cp74	96.2	119.3	1.47
BL24	91.2	112.4	1.32	Cp85	122.2	138.4	1.55
BL25	96.8	115.8	1.45	WS10	102.7	127.6	1.45
BL32	104.4	124.8	1.46	WS33	117.1	132.1	1.48
BL35	75.6	93.7	1.34	WS42	110.7	130.8	1.55
BL52	111.2	129.4	1.48	WS51	124.0	146.7	1.61
BL53	95.0	110.2	1.32	WS60	93.1	109.5	1.34
BL54	117.5	134.6	1.49	WS80	87.7	110.3	1.37
BL61	103.0	123.7	1.44	WS90	118.7	135.9	1.47
BL62	99.1	139.2	1.62	Cr4	92.4	101.3	1.31
BL70	95.0	118.2	1.45	Cr11	82.0	94.0	1.25
BL71	102.3	119.7	1.43	Cr20	95.7	109.6	1.21
BL81	103.5	121.8	1.47	Cr27	83.2	92.0	1.22
BL82	108.8	122.9	1.38	Cr46	103.8	109.4	1.25
BL83	107.5	123.5	1.48	Cr64	74.8	90.6	1.33
EF6	99.0	119.8	1.36	BoL1	86.3	144.1	2.02
EF19	133.9	149.6	1.59	BoL15	108.5	141.2	1.73
EF28	110.1	130.5	1.50	Bol34	99.5	157.4	2.10
EF39	125.8	156.2	1.75	BoL43	121.0	171.9	2.06
EF44	122.2	129.7	1.49	BoL55	115.5	177.7	2.04
EF45	130.2	140.6	1.60	BoL63	101.9	170.4	2.18
EF47	116.4	124.4	1.44	Hy29	102.6	119.9	1.38
EF59	100.9	119.2	1.44	Hy30	105.2	122.3	1.42
EF77	100.9	122.3	1.39	Hy75	112.0	130.8	1.51
EFP68	92.2	125.8	1.52	Hy87	116.2	141.8	1.57
EFR69	102.8	140.4	1.76	EL57	85.2	109.3	1.38
EFP89	99.7	117.5	1.44	EL73	35.7	52.1	1.28
Fi3	128.5	169.5	1.96	Gr41	85.9	100.3	1.20
Fi7	110.1	166.5	1.90	Gr86	98.0	112.8	1.32
Fi9	113.2	143.5	1.59	M56	79.0	92.3	1.17
Fi17	116.0	156.5	1.69	M72	93.0	115.6	1.47
Fi21	130.6	163.9	1.73	Ro14	92.2	109.4	1.26
Fi22	108.7	161.9	1.74	Ro49	108.2	113.4	1.28
Fi23	133.3	172.1	1.83	PD31	114.6	137.3	1.58
FL40	117.7	149.5	1.76	PD79	81.4	118.3	1.43
FiF48	125.1	160.8	1.79	Ch66	95.0	128.9	1.46
Fi67	92.2	149.3	1.73	SAM84	121.8	139.9	1.55
FiF76	94.0	124.6	1.57	SHD78	83.4	103.6	1.29
Fi88	118.7	165.4	1.87	Tx50	104.8	111.0	1.36
Cp5	110.9	129.6	1.54	WD91	111.8	129.1	1.50
Cp16	111.7	127.5	1.45	WH58	101.9	122.9	1.55
Cp18	81.5	100.6	1.22	Cc38	90.7	110.7	1.44
Cp26	116.9	138.3	1.52				

LW = lambs weaned per ewe joined (%); LB = lambs born per ewe joined (%)
LS = litter size (number of lambs born per ewe lambing)
Based on first 3 joinings of 1stX ewes

A1.3 Sire progeny means for lamb growth and carcase – 2ndX lambs

Sire	BW	WW	PWW	Fat	EMA	Sire	BW	WW	PWW	Fat	EMA
BL2	4.5	29.5	44.8	14.1	14.2	Cp36	4.1	27.3	41.7	15.2	14.5
BL8	4.3	28.5	43.2	15.8	14.3	Cp37	3.8	27.0	41.1	15.1	14.6
BL12	4.3	29.8	44.6	15.1	14.5	Cp65	4.1	28.3	43.0	15.3	14.5
BL13	4.3	29.6	44.1	16.3	14.3	Cp74	3.9	28.1	42.2	15.2	14.3
BL24	4.0	27.4	42.6	15.5	14.2	Cp85	4.4	30.7	45.9	14.0	14.4
BL25	4.2	28.8	43.5	14.8	14.6	WS10	4.3	28.9	42.8	14.6	14.8
BL32	4.4	28.7	43.6	14.6	14.4	WS33	4.2	28.6	42.3	14.5	14.8
BL35	4.1	26.9	41.2	15.2	14.2	WS42	4.3	29.2	43.5	14.1	14.9
BL52	4.5	28.9	43.8	14.4	14.5	WS51	4.2	29.4	43.1	14.5	15.0
BL53	4.2	28.9	43.2	15.7	14.5	WS60	4.0	28.7	42.2	15.3	14.9
BL54	4.6	29.3	44.7	14.2	14.1	WS80	4.0	28.3	42.3	14.8	14.6
BL61	4.5	28.8	43.9	14.7	14.4	WS90	4.4	29.1	43.4	15.1	15.0
BL62	4.4	28.3	44.8	15.1	14.3	Cr4	4.4	26.6	40.6	15.0	14.8
BL70	4.1	27.8	42.4	15.1	14.7	Cr11	4.5	26.7	40.5	14.8	14.4
BL71	4.4	29.4	44.1	14.8	14.4	Cr20	4.5	25.4	39.7	14.1	14.3
BL81	4.3	28.6	43.7	15.3	14.3	Cr27	4.4	28.3	41.9	14.7	14.6
BL82	4.6	28.8	44.0	14.3	14.2	Cr46	4.5	26.0	40.1	15.4	14.8
BL83	4.4	29.4	44.0	14.7	14.3	Cr64	4.3	26.3	40.1	14.5	14.8
EF6	4.4	29.3	44.3	12.7	14.5	BoL1	4.4	27.8	42.6	15.0	14.7
EF19	4.3	30.6	45.2	12.9	14.7	BoL15	4.2	28.9	42.9	15.6	14.8
EF28	4.6	31.9	46.4	13.6	14.6	Bol34	3.8	26.2	40.0	16.5	14.7
EF39	4.2	28.8	43.4	13.3	14.5	BoL43	4.1	28.3	41.9	15.7	14.7
EF44	4.4	31.4	45.6	12.4	14.4	BoL55	4.3	27.9	42.2	15.8	14.5
EF45	4.6	31.6	47.2	12.1	14.2	BoL63	4.0	28.4	42.8	16.2	14.6
EF47	4.3	30.0	44.2	13.3	14.8	Hy29	4.1	26.9	41.7	15.0	14.5
EF59	4.4	31.8	47.5	12.5	14.7	Hy30	3.9	27.4	41.0	14.8	15.0
EF77	4.2	29.5	44.6	13.4	15.0	Hy75	4.0	27.7	42.1	15.3	14.9
EFP68	4.4	31.0	45.0	13.3	14.7	Hy87	4.0	27.9	42.3	15.1	14.8
EFR69	4.0	29.9	44.4	13.5	14.8	EL57	3.8	27.5	41.0	15.5	14.4
EFP89	4.2	29.0	44.3	13.4	14.5	EL73	3.6	27.5	41.4	15.4	14.3
Fi3	3.3	25.1	40.1	14.4	14.7	Gr41	3.9	27.0	41.9	14.7	14.6
Fi7	3.4	26.2	40.9	15.2	14.7	Gr86	4.0	28.7	42.8	15.1	15.1
Fi9	3.5	25.8	39.9	16.0	14.4	M56	3.9	26.4	40.2	14.6	14.2
Fi17	3.4	25.6	39.9	16.0	14.6	M72	3.8	26.5	40.7	14.5	15.1
Fi21	3.5	25.2	40.0	14.9	14.5	Ro14	3.8	27.5	41.9	13.6	14.6
Fi22	3.6	25.6	40.4	14.5	13.9	Ro49	4.3	27.1	42.1	14.9	14.4
Fi23	3.4	25.4	39.9	14.8	14.2	PD31	3.8	28.9	42.9	15.4	15.1
FL40	3.7	26.4	41.0	14.8	14.7	PD79	3.9	28.8	42.8	14.9	14.8
FiF48	3.8	27.4	42.3	14.5	14.0	Ch66	3.6	26.8	42.2	14.7	15.0
Fi67	3.5	24.8	40.5	14.8	14.3	SAM84	4.2	29.3	44.3	14.7	14.7
FiF76	3.9	28.0	42.1	14.1	14.7	SHD78	3.8	26.9	41.1	14.5	14.8
Fi88	3.6	26.1	41.0	14.9	14.5	Tx50	4.0	27.4	42.2	14.5	15.2
Cp5	4.2	27.7	42.3	15.0	14.3	WD91	4.1	30.1	44.3	15.1	14.5
Cp16	4.1	27.7	42.6	15.1	14.5	WH58	4.1	29.1	43.0	14.2	15.1
Cp18	3.9	27.8	41.9	14.4	14.4	Cc38	4.0	28.5	42.2	14.3	14.9
Cp26	3.9	27.7	41.8	14.8	14.8						

BW = birth weight (kg); WW = weaning weight (kg); PWW = post-weaning weight (kg);
Fat = carcase fat (mm GR); EMA =carcase eye muscle area (cm^2), adjusted to 22.5 kg carcase weight.

A1.4 Sire progeny means for wool production and worm resistance of 1stX ewe hoggets and survival of 1stX lambs.

Sire	CFW	FD	FEC	SURV	Sire	CFW	FD	FEC	SURV
BL2	3.2	29.2	145.0	76.4	Cp36	3.8	28.1	140.4	75.4
BL8	3.4	29.4	154.9	76.3	Cp37	3.6	30.9	121.6	76.5
BL12	3.6	29.4	146.5	74.7	Cp65	3.4	29.2	78.0	76.4
BL13	3.0	27.0	202.5	77.1	Cp74	3.6	29.0		77.3
BL24	3.3	29.5		76.4	Cp85	3.4	28.0		76.7
BL25	3.4	30.8		77.1	WS10	2.7	27.2	123.1	72.9
BL32	3.6	29.8		76.6	WS33	2.8	28.5		72.9
BL35	3.4	28.5	118.8	77.6	WS42	2.4	28.9	91.1	74.2
BL52	3.2	28.2	108.3	76.5	WS51	3.0	28.8	105.9	73.6
BL53	3.1	28.7	155.0	76.5	WS60	2.9	28.2	118.6	73.1
BL54	3.4	29.2	106.1	77.1	WS80	2.8	27.4		72.2
BL61	3.2	29.3	206.6	76.4	WS90	2.6	27.7		73.3
BL62	3.3	28.2	187.4	76.6	Cr4	3.5	25.4	132.5	73.5
BL70	3.3	29.2		76.4	Cr11	3.4	23.2	142.1	73.4
BL71	3.2	29.3		77.0	Cr20	3.6	25.1	200.9	72.4
BL81	3.3	29.0		76.7	Cr27	3.6	24.2		73.1
BL82	3.3	29.1		76.7	Cr46	3.5	24.3	133.7	73.3
BL83	3.0	28.9		76.2	Cr64	3.5	25.1	207.6	72.8
EF6	3.1	27.9	136.8	69.9	BoL1	3.2	29.1	127.7	79.3
EF19	3.2	28.9	118.9	70.1	BoL15	2.7	27.3	96.5	78.4
EF28	3.2	28.5		70.1	Bol34	3.1	28.1	152.7	78.9
EF39	3.1	28.6	145.9	70.2	BoL43	2.8	26.9	131.4	78.4
EF44	3.0	27.5	156.0	69.5	BoL55	2.8	27.4	113.2	78.2
EF45	3.3	27.0	150.4	70.0	BoL63	3.1	27.6	167.0	79.1
EF47	3.3	29.0	138.8	69.2	Hy29	2.7	26.3		74.0
EF59	3.3	27.8	133.4	69.8	Hy30	2.9	26.3		74.4
EF77	3.1	28.6		70.2	Hy75	2.5	24.7		73.1
EFP68	3.2	28.2	180.4	69.3	Hy87	3.1	24.6		73.6
EFR69	3.1	28.3	116.9	70.4	EL57	3.8	28.8	126.9	73.0
EFP89	3.1	28.2		70.5	EL73	3.7	30.1		74.3
Fi3	2.7	25.0	139.2	77.1	Gr41	3.0	26.2	133.1	72.4
Fi7	2.7	23.8	144.0	76.6	Gr86	3.6	26.1		73.6
Fi9	2.6	25.0	168.3	77.4	M56	3.7	21.4	210.9	73.5
Fi17	3.0	26.2	144.8	76.6	M72	3.3	21.9		73.8
Fi21	2.8	25.3	143.5	77.3	Ro14	3.7	28.2	52.1	73.1
Fi22	2.8	23.9		76.1	Ro49	3.3	27.7	123.6	73.2
Fi23	2.7	23.1		76.9	PD31	2.8	27.0		73.9
FL40	3.2	25.4	167.2	77.0	PD79	2.6	27.8		73.7
FiF48	2.8	25.2	127.3	77.1	Ch66	3.3	27.0	40.9	73.5
Fi67	2.8	24.7	225.7	76.8	SAM84	3.1	22.2		72.6
FiF76	2.8	26.8		77.7	SHD78	2.8	27.0		73.8
Fi88	2.5	24.6		77.1	Tx50	3.1	28.7	100.1	73.7
Cp5	3.9	27.9	105.3	76.0	WD91	1.6	22.4		73.5
Cp16	3.5	29.7	148.4	78.0	WH58	2.5	29.4	87.0	74.5
Cp18	3.8	29.5	126.9	77.2	Cc38	2.9	28.7	95.0	74.6
Cp26	3.7	27.7		77.0					

CFW = hogget clean fleece weight (kg); FD =hogget fibre diameter (microns);
FEC =faecal worm egg count (eggs/g); SURV = 1stX lamb survival (%).

A1.5 Sire progeny means for lamb growth and carcase - 1stX lambs

Sire	BW	WW	PWW	Fat	EMA	Sire	BW	WW	PWW	Fat	EMA
BL2	4.3	22.2	38.0	14.0	13.3	Cp36	4.1	21.9	38.1	14.8	13.3
BL8	4.3	21.2	37.4	17.2	12.9	Cp37	4.1	21.0	35.3	14.8	13.5
BL12	4.2	21.8	38.2	15.1	13.4	Cp65	4.1	21.2	37.0	14.4	14.2
BL13	4.3	21.2	37.2	17.2	12.8	Cp74	4.2	20.5	35.2	13.9	13.6
BL24	4.1	21.0	38.1	15.0	13.3	Cp85	4.3	21.6	39.4	12.0	13.0
BL25	4.3	20.5	36.4	13.1	13.6	WS10	4.4	22.6	38.4	14.2	14.7
BL32	4.3	21.0	37.3	14.3	13.2	WS33	4.3	22.6	40.3	15.8	13.5
BL35	4.3	20.8	36.0	15.1	13.0	WS42	4.5	21.7	39.4	14.3	13.9
BL52	4.2	21.1	36.3	14.8	13.5	WS51	4.4	22.7	39.9	14.1	14.3
BL53	4.3	21.1	36.7	15.7	13.6	WS60	4.4	21.7	37.2	13.8	14.6
BL54	4.5	21.9	39.5	15.4	12.5	WS80	4.2	22.2	39.3	13.9	14.0
BL61	4.3	21.2	36.6	14.5	13.6	WS90	4.4	22.6	38.9	13.9	14.4
BL62	4.3	21.3	37.9	16.3	12.9	Cr4	4.3	20.0	32.3	12.0	14.6
BL70	4.4	21.9	38.6	14.9	13.2	Cr11	4.4	19.5	31.4	13.8	13.6
BL71	4.1	20.9	36.6	16.1	13.9	Cr20	4.2	19.2	33.9	13.5	13.6
BL81	4.3	21.7	37.7	17.5	12.9	Cr27	4.3	19.9	32.6	13.7	14.0
BL82	4.4	22.0	38.8	14.9	13.3	Cr46	4.3	19.3	33.9	13.8	13.3
BL83	4.4	21.8	38.2	17.0	13.0	Cr64	4.3	19.5	32.7	13.1	13.4
EF6	4.5	22.0	36.2	10.6	13.8	BoL1	4.0	20.2	36.8	16.4	13.2
EF19	4.3	22.1	39.2	10.3	12.9	BoL15	4.0	20.7	36.8	16.6	13.5
EF28	4.5	23.7	41.6	13.5	13.6	Bol34	4.0	20.1	34.5	18.2	13.9
EF39	4.6	22.5	39.1	10.7	13.2	BoL43	4.0	20.0	36.9	17.1	13.2
EF44	4.4	22.0	37.1	10.2	12.9	BoL55	4.1	20.4	36.2	16.6	13.5
EF45	4.4	22.7	39.2	10.2	13.6	BoL63	4.0	19.4	35.0	18.6	13.1
EF47	4.4	22.0	38.0	11.3	13.6	Hy29	3.9	20.3	34.1	12.6	13.8
EF59	4.5	23.3	42.2	9.7	13.3	Hy30	4.0	20.3	33.5	15.4	13.5
EF77	4.4	22.8	38.8	11.4	12.9	Hy75	4.1	20.5	35.8	15.4	14.5
EFP68	4.5	22.4	38.1	11.4	13.7	Hy87	4.0	20.7	37.4	13.8	14.2
EFR69	4.4	22.1	37.2	12.4	13.8	EL57	4.1	21.0	35.6	16.0	13.3
EFP89	4.4	22.0	38.2	10.9	14.1	EL73	4.3	21.6	38.0	13.9	13.2
Fi3	3.9	20.7	36.5	13.6	13.6	Gr41	4.2	20.1	35.0	14.8	13.2
Fi7	3.9	21.0	38.1	14.4	13.6	Gr86	4.3	21.2	36.5	14.7	14.1
Fi9	3.9	19.9	35.5	14.1	13.2	M56	4.1	19.6	31.1	12.7	13.5
Fi17	4.0	21.0	37.1	14.5	13.6	M72	4.1	20.6	34.3	12.9	12.9
Fi21	3.8	20.3	36.8	13.7	12.9	Ro14	4.4	21.2	35.8	13.3	13.8
Fi22	4.0	19.7	37.4	15.3	13.3	Ro49	4.4	21.1	37.1	13.9	13.6
Fi23	4.0	20.1	36.8	14.1	13.5	PD31	4.4	22.8	40.3	14.2	14.1
FL40	4.0	20.7	38.0	14.4	13.4	PD79	4.1	21.7	39.6	14.6	14.3
FiF48	4.2	21.0	38.3	13.5	13.4	Ch66	4.2	20.3	35.2	13.8	14.0
Fi67	4.0	20.9	38.9	14.2	13.5	SAM84	4.1	20.8	35.8	12.2	13.5
FiF76	4.1	20.8	37.1	13.4	13.1	SHD78	4.2	21.5	37.9	14.8	13.9
Fi88	3.9	20.0	36.6	13.6	13.5	Tx50	4.2	21.4	38.2	14.1	15.1
Cp5	4.3	21.6	36.7	14.8	13.4	WD91	4.2	20.5	37.0	14.2	13.6
Cp16	4.2	21.4	36.7	14.5	14.4	WH58	4.4	21.3	38.1	15.6	14.3
Cp18	4.2	20.8	35.2	14.4	13.6	Cc38	4.1	21.0	36.2	13.4	14.3
Cp26	4.2	21.6	38.0	13.3	13.7						

BW = birth weight (kg); WW = weaning weight (kg); PWW = post-weaning weight (kg);

Fat = carcase fat (mm GR); EMA =carcase eye muscle area (cm^2), adjusted to 22 kg carcase weight.

APPENDIX A2 – MCPT DESIGN and PRODUCTION SYSTEMS

Maternal Sires X Merino Ewes

Matings of maternal sires at Cowra, Hamilton and Struan - 1997,1998,1999, 2000

1stX ewes - *grown out*

- survival
- growth
- breeding season
- wool wt, yield, fibre diam
- faecal egg count

1stX wethers - *slaughtered*

- survival
- growth
- carcase wt, fat, ema, pH, colour

Terminal sires X 1stX ewes (x 3 years)

- breeding season
- lambing rate
- wool wt

2ndX lambs - *slaughtered*

- survival
- growth
- carcase wt, fat, ema, pH, colour

Sites and Production Systems

Cowra Agricultural Research & Advisory Station

Base ewes: Merino medium wool –12 sires each year X approx 66 base ewes, March 1997, February 1998, 1999

1stX ewe progeny evaluation: ewes split to either autumn or spring joining systems and mated to Poll Dorset rams for 3 lambings.

Autumn - first joining at 7 months (autumn 1998)

Spring - first joining at 14 months (spring 1998)

Final drop of 2ndX lambs slaughtered September 2003

Hamilton Pastoral & Veterinary Institute

Base ewes: Merino fine wool and Corriedale – 12 sires each year X approx 70 base ewes, April 1997, March 1998, 1999

1stX ewe progeny evaluation: ewes joined in autumn to terminal sire rams for 3 lambings, with first joining occurring at 7 months (autumn 1998).

Final drop of 2ndX lambs slaughtered May 2003

Struan Agricultural Centre / Rutherglen Research Institute

Base ewes: Merino broad wool SA type – 14 sires each year X approx 70 base ewes, January 1998, 1999, 2000. The AI matings and base ewe lambings with 1stX wether progeny grown out to slaughter at Struan. The 1stX ewe progeny grown out at Struan to 10-12 months and transferred to Rutherglen for maternal evaluation.

1stX ewe progeny evaluation: ewes joined in spring/summer to White Suffolk rams, with first joining at 18 months (spring 1999).

Final drop of 2ndX lambs slaughtered November 2004

Link Sires

Three link sires were used at each site in each year. The links included a Border Leicester (Kelso, BL12), Coopworth (Oaklea, Cp5) and Finnsheep (Warrayure, Fi7) as a broad representation of the genotypes being tested in the project.

APPENDIX A3 - MATERNAL SIRE ENTRIES – DETAILS

Year	Site	Sire Code	Tag	Stud	Breed	Entrant	Phone No.
1997	**Cowra**	**BoL1**	920047	Struan	Booroola Leicester	PIRSA	08 8762 9100
		BL2	950137	Johnos	Border Leicester	NW & JI Johnson	08 8756 6053
		Fi3	940001	Yamba	Finnsheep	M & L Burns	03 5798 1583
		Cr4	940364	Maluka	Corriedale	P Secker	02 4848 1244
		Cp5*	940449	Oaklea	Coopworth	DW & IA Peglar	08 8738 9291
		EF6	94B021	Silverstream	East Friesian	A. Baillieu	03 5597 6598
		Fi7*	930057	Warrayure	Finnsheep	GM & MA Wake	03 5574 1254
		BL8	950181	Inverbrackie	Border Leicester	CE & LJ Arney	08 8536 0031
		Fi9	935010	Warrayure	Finnsheep	Knight & Bottcher	03 5578 7250
		WS10	910058	Leahcim	White Suffolk	AWSA/Michael	08 8865 2085
		Cr11	930097	Coora	Corriedale	Coora Partnership	02 4848 1244
		BL12*	94S291	Kelso	Border Leicester	GB Starritt & Son	03 5829 0144
1997	**Hamilton**	**BL13**	950246	Inverbrackie	Border Leicester	CE & LJ Arney	08 8536 0031
		Ro14	930146	Claymour	Romney	Rouch & Gillman	03 5727 1552
		BoL15	924287	Struan	Booroola Leicester	PIRSA	08 8762 9100
		Cp16	930069	Narrambla	Coopworth	D Wigan	03 5577 2321
		Fi17	950054	Gippfinn	Finnsheep	S & D Jones	03 5122 3328
		Cp18	940421	Oaklea	Coopworth	J Keiller	03 5526 5248
		EF19	94B026	Silverstream	East Friesian	A. Baillieu	03 5597 6598
		Cr20	880491	Stanbury	Corriedale	Cole & Risbey	03 5593 9278
		Fi21	960002	UNSW	Finnsheep	S & D Jones	03 5122 3328
1998	**Struan**	**Fi22**	890049	ATC	Finnsheep	Jaydee Stud	08 8764 2065
		Fi23	930049	Tambaroora	Finnsheep	Jaydee Stud	08 8764 2065
		BL24	960346	Gleneith	Border Leicester	CE & LJ Arney	08 8536 0031
		BL25	960188	Johnos	Border Leicester	NW & JI Johnson	08 8756 6053
		Cp26	960210	Oaklea	Coopworth	DW & IA Peglar	08 8738 9291
		Cr27	921586	Coora	Corriedale	Coora Partnership	03 5578 6267
		EF28	960133	Silverstream	East Friesian	A. Baillieu	03 5597 6598
		Hy29	960028	Cowra	Hyfer	NSW DPI	02 6391 3813
		Hy30	960128	Cowra	Hyfer	NSW DPI	02 6391 3813
		PD31	960110	Wyndamah	Poll Dorset	GJ & BJ Oxley	03 5037 2355
		BL32	95T138	Kelso	Border Leicester	GB Starritt & Son	03 5829 0144
		WS33	951470	Galaxy Park	White Suffolk	AWSA/Gale	08 8210 5230
1998	**Cowra**	**BoL34**	950029	Caveton Park	Booroola Leicester	PIRSA	08 8762 9100
		BL35	940765	Retallack	Border Leicester	BLA(NSW)/Grinter	02 6974 1153
		Cp36	960067	Narrambla	Coopworth	RJ & PH Lane	02 6362 7115
		Cp37	940274	Narrambla	Coopworth	RJ & PH Lane	02 6362 7115
		Cc38	960621	Coronga	Coronga Composite	Premier Breed. Tech	02 6365 8207
		EF39	94B040	Silverstream	East Friesian	A. Baillieu	03 5597 6598
		FL40	941016	Wycombe	Finn x Leicester	R & L Coddington	02 6775 5225
		Gr41	955551	Yangoora	Gromark	Yangoora Gromarks	02 6383 3254
		WS42	940069	Leahcim	White Suffolk	AWSA/Michael	08 8865 2085
1998	**Hamilton**	**BoL43**	960322	Struan	Booroola Leicester	PIRSA	08 8762 9100
		EF44	960026	Silverstream	East Friesian	A. Baillieu	03 5597 6598
		EF45	94B019	Glenspean	East Friesian	S & J Cameron	03 5286 1455
		Cr46	950161	Gundowringa	Corriedale	HJ & CJ Prell	02 4848 1244
		EF47	950509	Silverstream	East Friesian	A. Baillieu	03 5597 6598
		FiF48	960086	Gippfinn	Finn x Friesian	S & D Jones	03 5122 3328
		Ro49	920089	Evergreen	Romney	C Duncombe	03 5264 5170
		Tx50	949002	Coolana	Texel	Coolana Rural	03 5350 5531
		WS51	900429	Galaxy Park	White Suffolk	AWSA/Gale	08 8210 5230
1999	**Cowra**	**BL52**	920070	Kegra	Border Leicester	BLA(NSW)/Golder	02 6977 1339
		BL53	960102	Inverbrackie	Border Leicester	CE & LJ Arney	08 8536 0031
		BL54	970030	Johnos	Border Leicester	NW & JI Johnson	08 8756 6053
		BoL55	950203	Struan	Booroola Leicester	PIRSA	08 8762 9100
		M56	890183	Centre Plus	Merino	L Mortimer & Sons	02 6892 8259
		EL57	960043	Ostlers Hill	English Leicester	ELAssoc/Stephenson	03 5764 1298
		WH58	960505	Clifton Hills	Wiltshire Horn	AWHSBA/Ballantyne	03 5145 8225
		EF59	970100	Silverstream	East Friesian	A. Baillieu	03 5597 6598
		WS60	974842	Linden Genetics	PLG White Suffolk	Linden Genetics	02 6386 2020
1999	**Hamilton**	**BL61**	970188	Wongajong	Border Leicester	AD & CM Wilson	02 5882 3338
		BL62	98X050	Kelso	Border Leicester	GB Starrttt & Son	03 5829 0144
		BoL63	950160	Struan	Booroola Leicester	PIRSA	08 8762 9100
		Cr64	910415	Coolana	Corriedale	PG Munro	03 5575 3240
		Cp65	978431	Cashmore Park	Coopworth	J Keiller	03 5526 5248
		Ch66	910L92	Grand Ridge	Cheviot	RN Waddell	03 5626 4244
		Fi67	960085	Gippfinn	Finnsheep	S & D Jones	03 5122 3328
		EFP68	981019	Yollom	East Friesian x Perendale	MF & ML Molloy	03 5596 2077
		EFR69	970175	Price	East Friesian x Romney	EJ & KJ Price	03 5527 1110
1999	**Struan**	**BL70**	970310	Johnos	Border Leicester	NW & JI Johnson	08 8756 6053
		BL71	97W290	Kelso	Border Leicester	GB Starritt & Son	03 5829 0144
		M72	930051	Merinotech Mid	Merino	Merinotech Mid North	08 8665 4019
		EL73	950T82	Koenarl	English Leicester	CR Taylor	03 5595 0272
		Cp74	970101	Oaklea	Coopworth	DW & IA Peglar	08 8738 9291
		Hy75	960215	Cowra	Hyfer	NSW DPI	02 6391 3813
		FiF76	960132	Gippfinn	Finn Friesian	S & D Jones	03 5122 3328
		EF77	960136	Silverstream	East Friesian	A. Baillieu	03 5597 6598
		SHD78	970155	Tauranga	South Hampshire Down	S & M Macmillan	03 5596 2251
		PD79	970101	Wyndamah	Poll Dorset	GJ & BJ Oxley	03 5037 2355
		WS80	970172	Koonawarra	White Suffolk	AWSA	08 8210 5211
2000	**Struan**	**BL81**	960327	Morton	Border Leicester	JD & CM Corbin	08 8765 8058
		BL82	980260	Johnos	Border Leicester	NW & JI Johnson	08 8756 6053
		BL83	980085	Johnos	Border Leicester	NW & JI Johnson	08 8756 6053
		SAM84	980046	Jeancourt	SAMM	W & M Heddle	08 8271 7080
		Cp85	980091	Oaklea	Coopworth	DW & IA Peglar	08 8738 9291
		Gr86	980144	Yangoora	Gromark	Yangoora Gromarks	02 6383 3254
		Hy87	940278	Cowra	Hyfer	NSW DPI	02 6391 3813
		Fi88	538	Gippfinn	Finn	S & D Jones	03 5122 3328
		EFP89	981071	Yollom	East Friesian x Perendale	Karioi Seed Stock/Udy	03 5597 6621
		WS90	960513	Langley Heights	White Suffolk	AWSA	08 8210 5211
		WD91	990906	Axis	White Dorper	B & L Mawson	08 8537 0615

** Link sires used at each site each year*

APPENDIX A4. Publications

A4.1 Scientific

Fogarty, N.M., Cummins, L., Stafford, J., Gaunt, G. and Banks, R. (1999). Benchmarking maternal genetics in the lamb industry. *Proceedings of the Association for the Advancement of Animal Breeding and Genetics* **13**: 78-81.

Fogarty, N.M., Cummins, L., Stafford, J., Gaunt, G. and Banks, R. (2000). Opportunities for improvement of maternal performance in the lamb industry. *Asian-Australian Journal of Animal Science* **13** Supp July A:309-311.

Cummins, L. and Behrendt, R. (2000). Wool quality attributes of young crossbred ewes. *Asian-Australian Journal of Animal Science* **13** Supp July C: 119.

Morgan, J., Fogarty, N. and Nicol, H. (2000). Oxytocin administration and its effect on ewe milk composition. *Asian-Australian Journal of Animal Science* **13** Supp July C:206-208.

Fogarty, N.M. (2000). Responding to the challenge - production systems. *In* D.G. Hall. Opportunities for Meat from Lambs and Goats in Australia. *Asian-Australian Journal of Animal Science* **13** Supp July B:91-101.

Fogarty, N.M., Cummins, L.J., Gaunt, G., Hocking-Edwards, J., Edwards, N., Lees, K. and Morgan, J. (2001). Opportunities to exploit genetic variation among maternal sires in the lamb industry. *Proceedings of the Association for the Advancement of Animal Breeding and Genetics* **14**: 123-126.

Fogarty, N.M., Morgan, J.E. and Lees, K. (2001). Sire x season interactions for lambing performance of crossbred ewes. *Proceedings of the Association for the Advancement of Animal Breeding and Genetics* **14**: 127-130.

Fogarty, N.M., Cummins, L.J., Gaunt, G., Hocking-Edwards, J., Edwards, N., Lees, K. and Morgan, J. (2001). Progeny testing shows considerable genetic variation among maternal sires. *Wool Technology and Sheep Breeding* **49** (4): 272-277.

Fogarty, N.M., Cummins, L.J., Gaunt, G., Hocking-Edwards, J., Edwards, N. (2002). Progeny testing maternal sires in the Australian lamb industry. *Proceedings of the 7th World Congress on Genetics Applied to Livestock Production*, Montpellier, France. Aug. CD ROM Communication No. 02-04. (**29**, 449-452).

Cummins, L.J., Fogarty, N.M., Hocking Edwards, J., Edwards, N., Stafford, J., and Gaunt, G. (2002). The economic return from first cross ewes is dependant on the genetic value of their sire. *Wool Technology and Sheep Breeding* **50** (4), 602 –607.

Fogarty, N.M., McLeod, L.J. and Morgan, J.E. (2003). Variation among crossbred ewes in lamb productivity and profit on a feed unit basis. *Proceedings of the Association for the Advancement of Animal Breeding and Genetics* **15**: 314-317.

A4.2 Scientific – in preparation

Fogarty, NM, Ingham, VM, Gilmour, AR, Cummins, LJ, Gaunt, GM, Stafford, J, Hocking Edwards, JE and Banks, R.G (2005). Genetic evaluation of crossbred lamb production. 1. Breed and fixed effects for birth and weaning weight of first cross lambs, gestation length and reproduction of base ewes. *Australian Journal of Agricultural Research* **56,** (submitted)

Fogarty, NM, Ingham, VM, Gilmour, AR, Cummins, LJ, Gaunt, GM, Stafford, J and Hocking Edwards, JE (2005). Genetic evaluation of crossbred lamb production. 2. Breed and fixed effects for post-weaning growth, carcass and wool of first cross lambs. *Australian Journal of Agricultural Research* **56,** (submitted)

Morgan, JE, (2004). Milk Production Studies of Crossbred Ewes Managed for Commercial Lamb Production. MRurSc thesis, University of New England (submitted)

Fogarty, NM, Ingham, VM, Cummins, LJ and Gaunt, GM (2005). Variation among maternal sires for lamb and wool gross margin performance of their crossbred daughters. *Proceedings of the Association for the Advancement of Animal Breeding and Genetics* **16,** (in preparation)

Ingham, VM, Fogarty, NM, Brown, DB, Cummins, LJ, Gaunt, GM, Stafford, J. and Hocking Edwards, JE (2005). Relationship between ram breeding values and post-weaning weight of their crossbred progeny. *Proceedings of the Association for the Advancement of Animal Breeding and Genetics* **16,** (in preparation)

Morgan, JE, Fogarty, NM, Nielsen, S., Gilmour, AR (2005). The effects of ewe age on milk production and milk composition of crossbred ewes. *Proceedings of the Association for the Advancement of Animal Breeding and Genetics* **16,** (in preparation)

Ingham, VM, Fogarty, NM, Gilmour, AR, Cummins, LJ, Gaunt, GM, Stafford, J., Hocking Edwards, JE (2005). Genetic evaluation of crossbred lamb production. 3. Genetic parameters for first cross animal performance. *Australian Journal of Agricultural Research* **56,** (in preparation)

Morgan, JE, Fogarty, NM, Nielsen, S., Gilmour, AR (2005). Milk yield and milk composition of crossbred ewes. *Australian Journal of Agricultural Research* **56,** (in preparation)

Morgan, JE, Fogarty, NM, Nielsen, S., Gilmour, AR (2005). The relationship between milk production of crossbred ewes and growth rate of their lambs. *Australian Journal of Experimental Agriculture* **45,** (in preparation)

Ingham, VM, Fogarty, NM, Brown, DB, Cummins, LJ, Gaunt, GM, Stafford, J. and Hocking Edwards, JE (2005). Correlation between purebred breeding values and crossbred progeny performance for meat traits. *Australian Journal of Agricultural Research* **56,** (in preparation)

Ingham, VM, Fogarty, NM, Gilmour, AR, Cummins, LJ, Gaunt, GM, Stafford, J. and Hocking, NJ (2005). Genetic evaluation of crossbred lamb production. 4. Age of puberty and lambing performance of yearling first cross ewes. *Australian Journal of Agricultural Research* **56,** (in preparation)

Fogarty, NM, Ingham, VM, Gilmour, AR, Cummins, LJ and Gaunt, GM (2005). Genetic evaluation of crossbred lamb production. 5. Lambing performance of first cross ewes. *Australian Journal of Agricultural Research* **56,** (in preparation)

Fogarty, NM, Ingham, VM, Gilmour, AR, Cummins, LJ, Gaunt, GM and Pollard, T. (2005). Genetic evaluation of crossbred lamb production. 6. Growth and carcass performance of second cross lambs. *Australian Journal of Agricultural Research* **56,**(in preparation)

Ingham, VM, Fogarty, NM, Gilmour, AR, Cummins, LJ and Gaunt, GM (2005). Genetic evaluation of crossbred lamb production. 7. Genetic parameters for first cross ewe reproduction and second cross lamb growth and carcass traits. *Australian Journal of Agricultural Research* **56,** (in preparation)

A4.3 Technical Conference, Reports, Lectures

Fogarty, N. (1997). Maternal Sire Central Progeny Test (MCPT). *Proceedings Wool and Sheepmeat Services Annual Conference*, October, Orange. Pp. 34-5.

Fogarty, N. (1998). LAMB.325 Maternal Sire Central Progeny Test - improving lamb maternal genetics. Field Trip Booklet, *13th Annual Grasslands Society Conference*. July, Orange pp 11-15.

Fogarty, N.M. (1998). Lamb industry profitability: getting the most from genetics. PDO Workshop, MLA, Sydney, September pp6.

Fogarty, Neal. (1998). Opportunities for maternal sector improvement. *Proceedings Wool and Sheepmeat Services Annual Conference*, October, Yanco. Pp 135-139.

Fogarty, N. M., Morgan, J. and Lees, K. (1999). Which maternal sire makes the $ difference? *Proceedings Wool and Sheepmeat Services Annual Conference*, November, Armidale. Pp. 121-124.

Brien, F.D., Graham, J.F., Cummins, L.J., Clarke, A.J. and Fogarty, N.M. (2000). Improving genetic evaluation in the beef and lamb industries in southern Australia. *Proceedings of the European Association of Animal Production*, The Hague, August (Abstract) p 36.

Cummins, L (2000). Valuing first cross ewes. *Poster 1-2 at AV Animal Industries Group Conference*, May

Cummins, L. J. and Fogarty, N. M. (2000). Breed and Sire Effects on the Fertility of Seven-Month-Old Crossbred Ewes. *Proceedings of the 5th International Sheep Veterinary Congress*, South Africa, January (Abstract)

Cummins, L. J., Fogarty, N. M., Stafford, J. and Gaunt, G. (2001). Improved lamb production from better crossbred ewes. *Proceedings of the Australian Veterinary Association Conference* Melbourne, May

Hocking-Edwards, J., Edwards, N., Stafford, J. and Gaunt, G. (2001). Prime lamb producers – which maternal breed is best?. *Proceedings of the 42nd Annual Conference of the Grassland Society of Victoria* **42**: 169-170.

Fogarty, N.M. (2001). Successful meatsheep enterprises in the 21st century. *Proceedings Wool and Sheepmeat Services Annual Conference*, November, Orange. Pp. 77-86.

Fogarty, N.M., Cummins, L.J., Gaunt, G., Hocking Edwards, J. and Edwards, N. (2001). Maternal sire genotype evaluation (MCPT). Final Report to Meat and Livestock Australia for Project LAMB.325. (Sept, NSW Agriculture, Orange).

Fogarty, N.M. (2002). Maternal Central Progeny Test (MCPT): Crossbred Ewes aren't all equal. In *Maternal Genetics Workshop*, Meat and Livestock Australia, Adelaide Sept. pp12.

Gaunt, G. (2002). Breed resources. In *Maternal Genetics Workshop*, Meat and Livestock Australia, Adelaide Sept. pp15.
Cummins, L. (2002). The economic return from first-cross ewes is dependent on the genetic value of their sire. *Wool Industry Science and Technology Conference*, Hamilton, October
Fogarty, N.M. (2002). Scope for improved meat production from Merinos. *Proceedings Wool and Sheepmeat Services Annual Conference*, December, Tocal. pp
Cummins, L.J. (2004). Intensifying prime lamb production. *Proceedings of the Post Graduate Foundation in Veterinary Science – Sheep Medicine*, Sydney University
Fogarty, N.M. (2004). Using genetics to improve lamb growth and meet target carcass specifications. Lecture in "Wool 412/512 Sheep Production", School of Rural Science and Agriculture, University of New England, Armidale. Pp. 15.1-19.
Fogarty, N.M. (2004). Meeting lamb market specs from crossbred ewes. In *Agribusiness Sheep Updates 2004*, Ed. S. Shaw, Department of Agriculture Western Australia, 27-28 July, Perth WA, p.29-30.

A4.4 Advisory

Fogarty, N.M. (1997). Maternal sire progeny test. *Muster* No. **38** p.24. January.
Fogarty, N.M. (1997). MRC supports new lamb Maternal Sire Project. *Sheepmeat Beat* **4**(9) 21 February 1997.
Fogarty, N.M. (1997). Editor: *LAMB - MATERNAL Newsletter***.** No. **1**. May.
Fogarty, N.M. (1997). Maternal genetic improvement. *LAMB - MATERNAL Newsletter*. May No. **1**. pp.5-6.
Fogarty, N.M. (1997). Maternal Sire Progeny Tests - up and running. *Sheepmeat Beat*. **4**(15) 16 May. p.2.
Fogarty, N.M. (1997). Maternal sire progeny test - up and running. *Muster* No.**39**, June 8-11.
Fogarty, N.M. (1997). Maternal sire evaluation - foetal scanning of ewes. *Sheepmeat Beat* **4**(17) 13 June. p.2.
Fogarty, N.M. (1997). Maternal Sire progeny tests. *AAABG News*, July p5.
Fogarty, N.M. and Lees, K. (1997). Eds. *Dynamic Dams - Ewe genetics for the future - Newsletter* No.**2**. Sept.
Fogarty, N. (1997). Mother knows best - maternal reproduction and genetics. In "Performance Pays - Dynamic Dams & Superior Sires" Rutherglen Sept. pp.21-25.
Fogarty, N.M. (1997) Maternal sire CPT - Weaning report. *Sheepmeat Beat* **5**(3), 28th Nov.
Fogarty, N.M. (1997). Maternal sire central progeny test (MCPT). *LAMBPLAN Newsletter*, December **6,**4.
Fogarty, N.M. and Lees, K. (1998). Eds. *Dynamic Dams - Ewe genetics for the future - Newsletter* No.**3**. March. Pp 10.
Fogarty, N.M. (1998). Maternal sire progeny testing - improving maternal genetics. *Cowra Lamb Forum Notes.* March, NSW Agriculture pp4.
Fogarty, N. (1998). What is MCPT?. *Sheepmeat Beat* **5**(11), 20th March.pp 1-3.
Fogarty, N. (1998). LAMB.325 Maternal Sire Central Progeny Test, Cowra Report May. *Sheepmeat Beat* **5**(17), 12th June.pp 7-8.
Fogarty, N.M. and Lees, K. (1998).1998 MCPT matings. *The Muster* No. **42** May, pp 4-7.
Fogarty, N. (1998). Maternal Sire Central Progeny Test. *Sheepmeat Beat* **5**(18), 26th June.pp 2-4.
Fogarty, N.M. and Lees, K. (1998). Eds. *Dynamic Dams - Ewe genetics for the future - Newsletter* No.**4**. July. Pp 14.
Fogarty, N.M. (1998).1stX meat EBVs - 1997 MCPT Sires. *Dynamic Dams* July **4,**1-3.
Fogarty, N.M. (1998). Contract mating - control your genetics. *Dynamic Dams* July **4,**10.
Fogarty, N. (1998). Maternal Sire Central Progeny Test - 1stX Meat EBVs. *The Muster* No. **43** August, pp 12-13.
Fogarty, N.M. and Lees, K. (1998). Eds. *Dynamic Dams - Ewe genetics for the future - Newsletter* No.**5**. September. Pp 9.
Fogarty, N. (1998). MCPT Update: Cowra. *Dynamic Dams* September **5,**4-5.
Fogarty, N.M. (1998). Breeding options to make the most of your lamb enterprise. Field Day Notes *Meat from Finewool Sheep* Tullamore, September.
Fogarty, N. (1998). Maternal Sire Central Progeny Test (MCPT): What does it offer Border Leicester breeders? Australian Border Leicester Association, AGM & Workshop. Echuca, October pp5.
Fogarty, N.M. (1998). Opportunities for maternal sector improvement in the lamb industry. *Sheepmeat Beat* **6**(1), 30th October pp 4-5.

Fogarty, N.M. (1998). Lamb industry profitability: getting the most from genetics. *The Muster* No. **44** December, pp 8-9.
Casburn, G. and Fogarty, N.M. (1998). Improving lambing rate with good management. *The Muster* No. **44** December, pp 10-11.
Fogarty, N.M. and Lees, K. (1998). Eds. *Dynamic Dams - Ewe genetics for the future - Newsletter* No.**6**. December. Pp 8.
Fogarty, N. (1999). Dynamic Dams: are you getting the lamb advantage? Manildra Agricultural Bureau, February pp5.
Fogarty, N.M. and Lees, K. (1999). Eds. *Dynamic Dams - Ewe genetics for the future - Newsletter* No.**7**.March. Pp 6.
Thatcher, Laurie (1999). Place of maternal sire testing in lamb consistency program. In "Capitalising on the best genetics in prime lamb dams" *Dynamic Dams Field Day*, Struan, March, pp1-5.
Stafford, John (1999). The valuation of maternal sires. In "Capitalising on the best genetics in prime lamb dams" *Dynamic Dams Field Day*, Struan, March, pp 6-14.
Hancock, Bruce (1999). Defining the problems in marketing for crossbred ewes. In "Capitalising on the best genetics in prime lamb dams" *Dynamic Dams Field Day*, Struan, March, pp 15-17.
Keiller, John (1999). Buying first cross ewes - the problem from the ewe buyer perspective. In "Capitalising on the best genetics in prime lamb dams" *Dynamic Dams Field Day*, Struan, March, pp18-19.
Stafford, John. (1999). The progeny test - what will it show? In "Capitalising on the best genetics in prime lamb dams" *Dynamic Dams Field Day*, Struan, March, pp20-21, 25-33.
Cummins, Leo. (1999). Maternal central progeny testing. In "Capitalising on the best genetics in prime lamb dams" *Dynamic Dams Field Day*, Struan, March, pp 22-24.
Joseph, Kate. (1999). Developing an alliance for sourcing better crossbred ewes. In "Capitalising on the best genetics in prime lamb dams" *Dynamic Dams Field Day*, Struan, March, pp 36-38.
Fogarty, N. (1999). Which sire produces the best first cross ewes? *Cowra Lamb Field Day Notes.* April pp. 1-5.
Morgan, J. (1999). Milk production studies. *Cowra Lamb Field Day Notes.* April p 6.
Lees, K. (1999). Worm resistance and DNA studies. *Cowra Lamb Field Day Notes.* April pp. 7-8.
White, A. (1999). How to breed better prime lamb dams. *Cowra Lamb Field Day Notes.* April p 11.
Fogarty, N. (1999). What is the best first cross ewe? *The Muster* No. **45** May, pp 6-7.
Fogarty, N. (1999). Making the most of Mum's genes. *Australian Farm Journal Wool.* May pp. 18-19.
Anon. (1999). Testing maternal sires where it counts. *Feedback* July p.6.
Fogarty, N.M. and Lees, K. (1999). Eds. *Dynamic Dams - Ewe genetics for the future - Newsletter* No.**8**.August. Pp 12.
Fogarty, N. (1999). Sire makes big difference in 1st-cross ewe performance. *Poll Dorset Journal* **29** (2): 63. September.
Fogarty, N.M. and Lees, K. (1999). Eds. *Dynamic Dams - Ewe genetics for the future - Newsletter* No.**9**. December. Pp 12.
Fogarty, N.M. and Lees, K. (2000). Eds. *Dynamic Dams - Ewe genetics for the future - Newsletter* No.**10**. April. Pp 10.
Fogarty, Neal. (2000). How much $ difference does the sire of crossbred ewes make? *Cowra Lamb Forum 2000: Notes.* May pp. 2-6.
Fogarty, Neal. (2000). The sire of crossbred ewes makes a $ difference. *The Muster* No. **48** May, pp 14-15.
Morgan, Jayce. (2000). Milk production of 1stX ewes. *Cowra Lamb Forum 2000: Notes.* May p.7.
Lees, Kelly. (2000). Worm resistance of 1stX ewes. *Cowra Lamb Forum 2000: Notes.* May p.8.
Fogarty, N.M. (2000). Increasing returns from meat in Merino breeding enterprises. In *Merinos for the New Millennium*, Trangie, June, pp32-5.
Fogarty, N.M. (2000). More money from crossbred ewes. *Ovine Observer* No **11** June pp1-3.
Fogarty, N.M. (2000). The Border Leicester and MCPT results. *Proceedings $uperBorder$ Conference*, Temora, June pp3.
Fogarty, N.M. (2000). Selecting the best Border Leicester rams for crossing. In *2000 Border Leicester Sheep Breeders Directory*, Australian Border Leicester Association Inc.
Fogarty, N.M. (2000). Meat from Merinos. *Riverina Merino Field Days Booklet.* September
Thatcher, Laurie. (2000). Controlling Maternal Genetics. *Australian Farm Journal,* August pp 67-70.
Fogarty, N.M. (2000). Making more $ from crossbred ewes. *Agriculture Today*, Sept.
Fogarty, N.M. and Lees, K. (2000). Eds. Dynamic Dams - Ewe genetics for the future - Newsletter No.**11**. August. Pp 14.
Fogarty, N.M. (2000). More $ from crossbred ewes. *Dynamic Dams No.* **11** pp. 4-5.

Fogarty, N.M. (2000). Meat Options for Merino Breeders. *Centre Plus Field Day Notes*, Tullamore, October

Fogarty, N.M. (2000). Prime lamb dams in the spotlight. *FEEDBACK* August pp25-26.

Fogarty, N.M. (2000). Selecting the best Finnsheep rams for crossing. *Australian Finnsheep Association Newsletter*

White, A. and Fogarty, N.M. (2000). Merinos for meat production. Condobolin Field Day Notes. October.

Fogarty, N.M. (2000). Mum affects lamb carcasses too! *The Muster* No. **50** December, p 18.

Gaunt, G.M (2000). Better Mums – More Lambs – More Money! *Marksman News*, Spring 2000

Gaunt, G.M (2000). Value of Improving Prime Lamb Dams: Maternal Central Progeny Testing (MCPT), Agriculture Victoria – Rutherglen Annual Spring Field Day notes, October.

Gaunt, G.M (2000). Maternal Central Progeny Testing. Annual Report 1999-2000. Agriculture Victoria, Rutherglen Research Institute pp. 19-20.

Fogarty, N.M. and Lees, K. (2000). Eds. Dynamic Dams - Ewe genetics for the future - Newsletter No.**12**. December. Pp 10.

Cummins, L. (2000). What are first cross ewes worth? *The Muster* No. **50** December, p 6-7.

Cummins, L. (2001). Breeding from ewe lambs. *Marksman News*, Summer 2001 **10**(4)

Fogarty, N.M. and Lees, K. (2001). Eds. Dynamic Dams - Ewe genetics for the future - Newsletter No.**13**. April. Pp 10.

Fogarty, N.M. (2001). Top crossbred ewes returned $105 more per ewe. *Dynamic Dams No.* **13** pp. 1-2.

Hocking-Edwards, J., Edwards, N., Stafford, J. and Gaunt, G. (2001). Maternal Central Progeny Test – which maternal breed is best?. *Proceedings of the Prime Lamb Expo (Growing profit through quality)* April, Mt Gambier. pp. 36-37.

Fogarty, N.M. (2001). Top crossbred ewes returned $105 more per ewe. *The Muster* No. **51** May, p 6-7.

Cummins, L. (2001). Breeding from ewe lambs. *The Muster* No. **51** May, p 12.

Fogarty, N.M. (2001). Making more dollars from maternal genetics. In *New Breeding Technologies for Sheep Farmers - Proceedings of Sheep Farmer Conferences in assoc with AAABG*. July/Aug, Lincoln, Telford, Palmerston North: New Zealand, pp 24-27.

Gaunt, G.M. (2001) Dynamic Dams for Targeted Markets. *Marksman News*, Winter 2001

Anon (2001) Maternal sires central progeny test. *LAMBPLAN Newsletter*, Winter 2001 p10.

Gaunt, G.M (2001) Maternal Central Progeny Testing, 2001 Results. *Lamb and Goat Field Day*, Agriculture Victoria- Rutherglen, September

Fogarty, N.M. (2001) Maternal genetics: More, heavier lambs from good mothers. *Agriculture Today*, Sept. p 15.

Fogarty, N.M. (2001). Ed. Dynamic Dams - Ewe genetics for the future - Newsletter No.**14**. November. Pp 18.

Fogarty, N.M. (2001). Where will the lambs come from in 2010? *Dynamic Dams No.* **14** pp. 4-5.

Fogarty, N.M. (2001). Where will the lambs come from in 2010? *The Muster* No. **53** December, p 18-19.

Fogarty, Neal. (2002). Identify target traits before selecting sires. *Farming Ahead* No. **122**, February, pp 62-64.

Hocking Edwards, Janelle and Edwards, Nick (2002). Which maternal breed is best for prime lambs? *Farming Ahead* No. **122**, February, p 64.

Fogarty, N.M. and McLeod, L. (2002). Eds. Dynamic Dams - Ewe genetics for the future - Newsletter No.**15**. March. Pp10 .

Fogarty, N.M. (2002). The Lamb Revolution *The Muster* No. **54** May, p 4-5.

Fogarty, N.M. (2002). Lamb Supply in 2010? *Sheepmeat Council of Australia Quarterly Newsletter* Edition #1, April p4.

Fogarty, N.M. (2002). Crossbred ewes aren't all equal. AgNote DAI-263, NSW Agriculture, Orange, April, Agdex 431/33.

Fogarty, N.M. (2002). Merino breeding: Meat adds $. In *Trangie QPLU$ Merinos – Open Day 2002* Ed. B.A. Bartlett, NSW Agriculture, Orange, May pp 36-39.

Gaunt, Gervaise (2002). How much is too much for a prime lamb dam? *Marksman News*, Winter 2002

Fogarty, N.M. (2002). The Lamb Revolution. *Agriculture Today*, June p18.

Fogarty, N.M. and McLeod, L. (2002). Eds. Dynamic Dams - Ewe genetics for the future - Newsletter No.**16**. June. Pp 8.

Anon. (2002). Time to focus on meat traits in the Merino. *Agriculture Today*, July p12.

Anon. (2002). Spotlight on genetic potential of ewe flock. *FEEDBACK* July p16.

Anon. (2002). Balancing maternal genetics with carcass traits. *FEEDBACK* July p17.
Anon. (2002). Growing more meat with less feed. *FEEDBACK* July p10.
Gaunt G and Das S (2002) What is a ewe worth to you?, *Mallee Ag. News*, July 2002
Fogarty, N.M. (2002). Making the most of lamb $$$. Manildra Agricultural Bureau Notes, Sept
Gaunt, Gervaise (2002). What is a ewe worth to you? *The Muster* No. **55** August, p 8-9.
Gaunt, G (2002) Contract Mating: the key to obtaining the "best" prime lamb genetics. *Marksman Newsletter*, Spring 2002
Fogarty, N.M. and McLeod, L. (2002). Eds. Dynamic Dams - Ewe genetics for the future - Newsletter No.**17**. November. Pp 12.
Fogarty, N.M. (2002). Meat, genetics and the Merino. *The Muster* No. **56** December, p 6-7.
Gaunt, G (2002) Contract Mating: A tool for obtaining superior prime lamb dams. *The Muster* No. **56** December, p 20-21.
Anon. (2002). Feed efficiency EBVs determined for sheep. *FEEDBACK* Nov/Dec p10.
Fogarty, N.M. (2003). MCPT and implications for White Suffolk breeders. Australian White Suffolk Association National Conference Notes, Orange, February, pp2.
Anon (2003) Snapshot of the Maternal Central Progeny Test Project. DPI Meat Newsletter (Vic), Jan/Feb p2.
Cummins, L. (2003). Breeding from ewe lambs. *Ovine Observer* No. **22** March p 9-10.
Fogarty, N.M. and McLeod, L. (2003). Eds. Dynamic Dams - Ewe genetics for the future - Newsletter No.**18**. March. Pp 8.
Fogarty, N.M. (2003). Second cross ewe lambs can be a prime lamb dam alternative. *Australian Farm Journal* June pp 30-33.
Anon (2003) Getting best performance from the breeding ewe. *Prograzier*
Fogarty, N.M. (2003). MCPT and implications for Border Leicester breeders. *Proceedings $uperBorder$ Annual Workshop*, Cowra, June, pp2.
Fogarty, N.M. (2003). Crossbred ewes aren't all equal. *Prime Target - Kangaroo Island Lamb Producers Group Newsletter* Winter # 11, p4.
Fogarty, N.M. and McLeod, L. (2003). Eds. Dynamic Dams - Ewe genetics for the future - Newsletter No.**19**. June. Pp 8.
Fogarty, N.M. (2003).The lamb challenge and meat options for Merino breeders. In *Merinos, Microns, Meat and Management* South West Slopes Merino Breeders Seminar, Young, 30 July, p 13-16.
Fogarty, N.M. (2003). Breeding from second cross ewe lambs. *The Muster* No. **58** August, p. 20-21.
Fogarty, N.M. (2003). Maternal genetics and reproduction. In Notes *Lamb Production Focus* Temora Agricultural Bureau, Temora, 14 August pp2.
Fogarty, N.M. (2003).The lamb challenge – maternal genetics. *In* Increasing Profitability through Maternal Genetics *Kangaroo Island Prime Lamb Producers Maternal Workshop*, Parndana, 28 August p 1-5.
Anon. (2003). Tapping into maternal genetics. *Tips and Tools*, Meat and Livestock Australia, Sydney
Fogarty, N.M. (2003). Breed from selected second cross ewes. *Agriculture Today*, August p14.
Anon. (2003). Ewes make all the difference. *Agriculture Today*, November p. 19.
Fogarty, N.M. (2003).Profitable crossbred ewes – Genetics counts. *Cowra AR&AS Centenary Field Day Notes* Cowra, 6 November, 4 pp.
Fogarty, N.M. and McLeod, L. (2003). Eds. *Dynamic Dams - Ewe genetics for the future - Newsletter* No.**20**. November. Pp 12.
Fogarty, N.M. (2003). Maternal sire EBVs – how much are they worth? *The Muster* No. **59** December, p8-9.
Anon. (2004). Money Making Mums. *FEEDBACK* March p11.
Fogarty, N.M. and McLeod, L. (2004). Eds. *Dynamic Dams - Ewe genetics for the future - Newsletter* No.**21**. March. Pp 12.
Fogarty, N.M. (2004). Second-cross ewes fill breeding void. *Farming Ahead* No. **147**, April, p. 64-65.
Gaunt, G (2004) Grandparents are important!. *Marksman Newsletter*, Autumn 2004, p 2-6.
Fogarty, N.M. (2004). Profitable crossbred ewes – Genetics counts. *The Muster* No. **60** May, p.34-37.
Fogarty, N.M. and McLeod, L. (2004). Eds. *Dynamic Dams - Ewe genetics for the future - Newsletter* No.**22**. June. Pp 8.
Fogarty, N.M. (2004). Merino genes pave the way for meatier lambs. *Farming Ahead* No. **150**, July, 60-62.
Anon. (2004). Crossbred ewes depend on sires for performance. *Agriculture Today*, 29 July p. 18.

Fogarty, N.M. (2004). Meeting lamb market specs from crossbred ewes. In *NAR Regional Sheep Updates 2004* Ed R. Horne, Department of Agriculture Western Australia, Geraldton, 3-4 August, p 14-15.

Fogarty, N.M. (2004). Crossbred ewes make for better offspring. *Farming Ahead* No. **151**, August, p 59-60.

Fogarty, N.M. and Ingham, V. (2004). What are the differences between maternal sire breeds? *The Muster* No. **61** August, p 7-12.

Gaunt, G. (2004). MCPT Update Rutherglen. *The Muster* No. **61** August, p 13 - 14.

Fogarty, N.M. and McLeod, L. (2004). Eds. *Dynamic Dams - Ewe genetics for the future - Newsletter* No.**23**. October. Pp 16.

A4.5 Electronic

Prime Notes: CD-ROM. "Maternal Sires Central Progeny Test" QDPI

Internet site: http://lambplan.une.edu.au/mcpt

Software: EBV $ Calculator for Maternal Sires *(N Fogarty & L McLeod)*

APPENDIX A5 - ACKNOWLEDGEMENTS

Meat and Livestock Australia provided financial support for this project as outlined in Section 10. Dr Rob Banks was closely involved with the design and management of the project through his earlier role as Manager LAMBPLAN and was the Project Co-ordinator for MLA from 2001. Laurie Thatcher was the Project Co-ordinator for MLA prior to 2001. Dr Alex Ball and Richard Apps through LAMBPLAN have been involved in recent years.

The Australian Government through The Australian Sheep Industry Cooperative Research Centre also provided financial support together with NSW Department of Primary Industries that assisted with the analysis of the results.

The two state Departments have provided considerable support to the project with resources and staff at the various sites.

NSW Department of Primary Industries - Dr David Hopkins and Dr Arthur Gilmour contributed to the design. Considerable expertise and technical support has been provided by Kelly Lees, Tony Markham, Ashley Radburn, David Stanley, Sharon Nielsen and Dr Alex Safari, as well as the Managers and other staff at Cowra and Orange Agricultural Institute. Dr Peter Holst provided valuable advice for the milking studies.

Department of Primary Industries Victoria – Hamilton – Dr Leo Cummins managed the Hamilton site and had considerable input into the project until his retirement in 2002. Trevor Pollard managed the project at Hamilton from 2002. Kerrie Groves and Murray Arnold have provided considerable technical support, with additional support from Roger Thompson, Alison Behrend, Victoria Condon, Michelle Carter, Brian Hurley, Phil Forsyth, and Brian Clark.

Department of Primary Industries Victoria – Rutherglen - Philip Kenney was involved in the early planning prior to his retirement in 1997. Greg Seymour, Paul Curran, Taffy Phillips, Max Daniel and Angela Avery have provided considerable technical and management support, together with other staff at Rutherglen.

Primary Industries South Australia and the South Australian Research and Development Institute ran a site during the first phase of the project at Struan (1998 – 2001). This site was managed initially by John Stafford until his retirement in August 2000 and subsequently by Dr Janelle Hocking Edwards and Dr Nick Edwards. Jack Rowe, Tamara Starbuck, Liz Abraham and Elke Hocking have provided considerable technical support, together with other staff John Cooper, Colin Windebank and Shane Walker

The Technical Transfer Advisory Group (TTAG) is thanked for their support and ongoing advice. The TTAG was convened by Laurie Thatcher and the members were Don Peglar, Lynton Arney, John Keiller, Charlie Prell, Robert Mortimer and Sandy Cameron.

We also wish to thank the managers and staffs of the abattoirs and meat processors for their cooperation and assistance in the lamb slaughters and carcass measurements over the several years of the project. These include Cowra Abattoir P/L, Tatiara Meat Company, Coles, Gundagai Meat Processors, Colac Abattoirs, Penny and Laing, Scotsdale Meats, Norvic and Hills of Darling.

Finally the breeders who entered sheep are thanked for making the MCPT possible by their enthusiasm and commitment to genetic improvement in the maternal sector of the lamb industry. The additional support from the owners of the three link sires, Bruce Starritt, Don Peglar and Garry Wake is greatly appreciated.