

Growth and carcass parameters of lambs sired by extreme muscle density rams at differing end points

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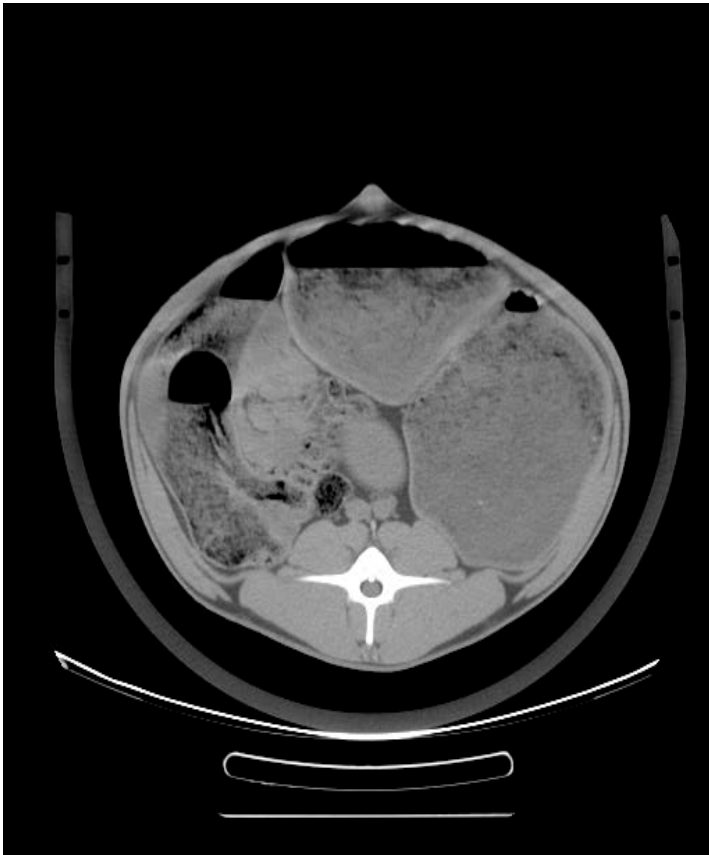
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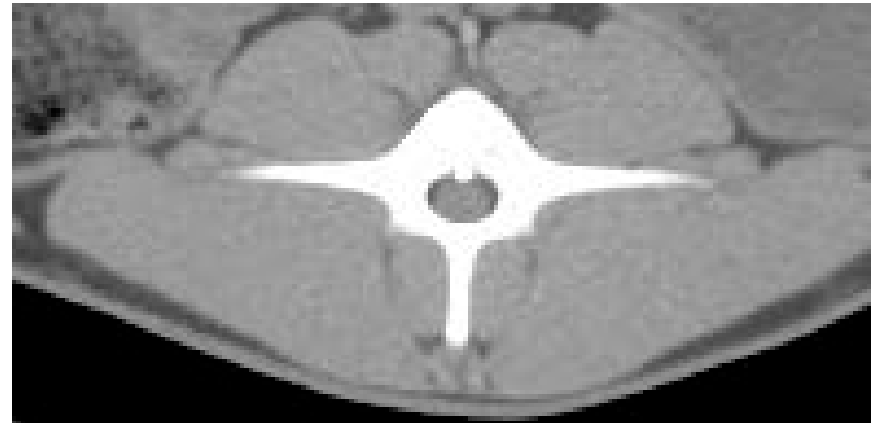
Objective

- Effect of selecting high/low MD sires on progeny growth and carcass traits at differing end points
- Selecting slaughter lambs -
slaughter weight, fat class, conformation class and age

CT Image



Muscle density



Methods (I)

120 Abermax™ CT ♂ →
5 high/5 low muscle density



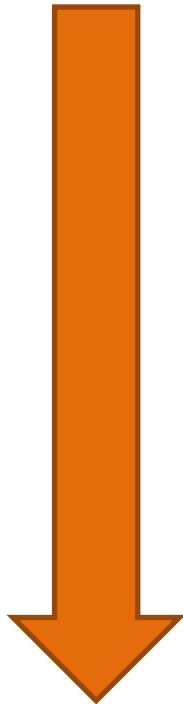
AI of 230 ewes



20 progeny per sire



High muscle density
 (Average 45.07 HU)



Low muscle density
 (Average 38.28HU)

Tag	Sire	MD (HU)	Weight (kg)
00722HV	PE00114	45.56	46.2
00683HV	ZVY00078	45.13	42
00660HV	ZVY09166	45.02	45.2
00665HV	ZVY09166	44.92	50.8
00592HV	PE00114	44.72	46

00652HV	ZVY00078	38.84	49
00624HV	PE00114	38.67	46
00677HV	ZVY00109	38.28	43
00711HV	ZVY09100	37.83	47
00692HV	ZVY00109	37.79	47

Methods (II)

Traits measured on crossbred lambs:

- Live Weight Performance
 - Birth, 8 week, 16 week weight
- Slaughter traits
 - Live wt, age, UFD, UMD, hot wt, cold wt, fat grade, conformation grade,

Methods (III)

Unbalanced nested ANOVA (sire nested MD)

REML fixed effects-

- MD
- Sex
- Dam age
- Birth/rear type
- MyoMax™ status
- Carcase batch

REML
Random effect - Sire

Covariates age, slwt and fat grade

Results (II)

	MD P Value		
	Age	Slwt	Fat grade
Slaughter ADG (g/day)	0.880	0.426	0.910
Log, ultrasonic fat depth (mm)	0.386	0.290	0.290
Ultrasonic muscle depth (mm)	0.172	0.173	0.169

Results (I)

	Low MD Progeny	High MD Progeny	SED
Birth weight (kg)	6.0	6.0	0.17
8 week weight (kg)	25.2	24.5	0.47
8 week ADG (g/day)	337	329	7.2
16 week weight (kg)	34.9	33.9	0.58
16 week ADG (g/day)	284	278	5.0

Results (III)

	MD P Value		
	Age	Slwt	Fat grade
Hot carcass weight (kg)	0.042	0.023	0.047
48hr cold carcass weight (kg)	0.044	0.031	0.046
Killing out %	0.018	0.019	0.021
Log conformation	0.021	0.040	0.021
Log fat class	0.935	0.583	N/A
Slaughter age (days)	N/A	0.479	0.323

Results (IV)

	Age		Slwt		Fat grade	
	Low	High	Low	High	Low	High
Hot carcass weight (kg)	19.71	20.13	19.75	20.18	19.86	20.26
48hr cold carcass weight (kg)	19.00	19.41	19.24	19.68	19.11	19.50
Killing out %	44.49	45.73	44.95	45.96	44.77	45.98
Conformation†	2.98	3.14	3.03	3.18	2.98	3.14

† Geomean presented (E=5, U=4, R=3, O=2, P=1)

Results (V)

End point: Slwt

Trait	n	Sire muscle density group		SED	Sig.
		Low Mean	High Mean		
Primal Weights					
Breast (kg)	199	1.76	1.76	0.040	NS
Shoulder (kg)	199	4.16	4.28	0.059	NS
Loin (kg)	199	3.17	3.27	0.039	P<0.05
Leg (kg)	199	5.52	5.71	0.057	P<0.05
Total Saleable Meat (kg)	198	14.58	15.00	0.123	P<0.05
Fat Trim (kg)	153	0.66	0.65	0.017	NS
Bone Waste (kg)	154	3.81	3.83	0.052	NS

Conclusion



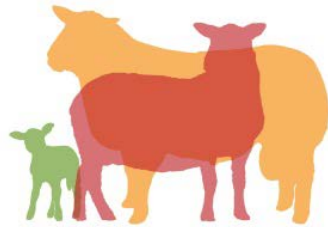
Differing end points = similar results

High MD progeny:

↑ lean tissue expressed as higher
carcase weight/conformation

↑ loin }
↑ leg } ↑ SMY

Acknowledgements



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