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Beef Unit Trial Results – 2006 (c)

Evaluation of progeny from Limousin bulls with Top 1% and Top 10% Beef Values

Objective:

The objective of this study was to evaluate the performance Limousin cross Holstein Friesian bull and heifer calves sired by bulls with either a Top 1% or Top 10% Beef Value.

Animals & Timing:

The trial commenced in April 2004 with Holstein-Friesian cows from the Harper Adams University dairy herd and three local dairy herds being alternatively inseminated with either a Top 1% or Top 10% Beef Value Limousin bull. The calves were born from January to March 2005 and were reared through to slaughter on a cereal beef system at Harper Adams with 26 calves per sire.

Comparison:

The following bulls were chosen for comparison from the Genus bull stud:



Top 1% Sire
Killerton Travis (Beef Value LM39)



Top 10% Sire
Cockleshell Olympus (Beef Value LM30)

(Photos courtesy of Genus)

The Calving Values for Killerton Travis and Cockleshell Olympus were LM2C and LM-4C respectively (BLUP'd April 2004).

Results:

Table 1 Animal performance (bulls & heifers) – Cockleshell Olympus (Top 10% sire) versus Killerton Travis (Top 1% Sire)

Sire	Cockleshell Olympus	Killerton Travis	s.e.d	Sig
Gestation (days)	289.3	287.8	1.40	NS
Calving Ease (1-5) ¹	1.58	1.21	0.148	*
Birth weight (kg)	48.5	48.3	0.90	NS
Slaughter weight (kg)	534	552	8.63	*
Days to slaughter	396.3	393.8	6.63	NS
DLWG (kg)	1.22	1.28	0.028	*
Carcase weight (kg)	294.3	307.0	5.35	*
Killing out (%)	55.0	55.5	0.37	NS
Carcase DG (kg)	0.69	0.72	0.016	*
Conformation score ² (1-7)	3.6	4.0	0.16	*
Fat class ² (1-7)	3.7	3.6	0.14	NS
Carcase price (p/kg) - Apr 2006	1.93	1.95	0.009	NS
Carcase value (£) - Apr 2006	568.3	598.0	11.78	*

¹ Calving Ease Score: 1= unassisted and 5 = Caesarean.

² EUROP carcass classification: Conformation: P+=1 and E=7, Fat class: 1=1 and 5H=7.

NS = not significant, * = P<0.05.

Table 2 Animal performance – Bulls versus Heifers

Sire	Cockleshell Olympus		Killerton Travis		s.e.d
	Bulls	Heifers	Bulls	Heifers	
Gestation (days)	289.5	289.0	288.6	287.0	1.98
Calving Ease	1.67	1.50	1.17	1.25	0.210
Birth weight (kg)	50.4	46.6	49.8	46.7	1.28
Slaughter weight (kg)	579	488	598	506	12.2
Days to slaughter	403.6	389.3	401.4	386.2	9.37
DLWG (kg)	1.30	1.15	1.37	1.19	0.040
Carcase weight (kg)	327.3	261.3	341.2	272.8	7.57
Killing out (%)	56.5	53.5	57.1	54.0	0.52
Carcase DG (kg)	0.75	0.62	0.80	0.65	0.023
Conformation score (1-7)	3.5	3.8	4.0	4.0	0.22
Fat class (1-7)	3.1	4.3	3.1	4.2	0.19
Carcase price (p/kg) - Apr 2006	1.91	1.96	1.93	1.97	0.012
Carcase value (£) - Apr 2006	625.5	511.1	658.8	537.3	16.66

Conclusions:

- The calves sired by the Top 1% Beef Value bull (Killerton Travis) recorded significantly higher (P<0.05) daily liveweight gains, daily carcass gains, slaughter weights, carcass weights, improved carcass conformation scores and carcass values compared to the calves sired by the Top 10% Beef Value bull. The Killerton Travis bred cattle also recorded a higher killing out percentage and were slaughtered 2.7 days earlier but this was not statistically significant.
- There was a reduced incidence of calving difficulties with the Killerton Travis bred calves which is in agreement with the Calving Value EBVs for the bulls.

- Beef Value is an assessment of the economic genetic merit of an animal. The theoretical difference between the progeny from the sires should have been £4.50. In this study with the cattle slaughtered in April 2006 the difference in financial value was £29.70 per calf thus exceeding the predicted value by £25.20. This simplistic calculation does not take into account the possible benefits accruing through the reduced incidence of calving difficulties and reduced number of days to reach slaughter condition with Killerton Travis which should further increase the financial benefit for this Top 1% Beef Value sire. If the finished beef prices are updated to April 2015 with a base price for an R grade carcass of £3.34/kg the increase in carcass value for the Top 1% Beef Value bred cattle is worth an extra **£42.42** per calf.

Acknowledgement:

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Reference

Marsh, S.P., Vickers, M. and Wharton, N. 2007 Evaluation of progeny from beef bulls with either a Top 1% or Top 10% Beef Value. *Proceedings of the British Society of Animal Science*. Paper 152

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