

**Animal Science Research Centre - Beef Unit Trial Results – 2007 (c)**

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

**Trial carried out in conjunction with EBLEX and Genus ABS**

**Objective:**

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

**Animals & Timing:**

The trial commenced in June 2004 with Holstein-Friesian cows from the Harper Adams University College dairy herd being inseminated with either a Top 1% Beef Value Limousin bull or served by a bull with a Bottom 1% Beef Value. The calves were born from April 2005 through to March 2006 and were reared through to slaughter at Harper Adams.

**Comparison:**

The bulls used were as follows:

- Killerton Travis - Top 1% Beef Value of LM44
- Nouvelle Tonic - Bottom 1% Beef Value of LM0

Killerton Travis is from the Genus bull stud. The Calving Values for Killerton Travis and Nouvelle Tonic were LM-1C and LM0C respectively.



Killerton Travis (picture courtesy of Genus)



Nouvelle Tonic

**Results:**

The calves were reared on a cereal beef system and the progeny from the Top 1% Beef Value sire recorded performance that exceeded recognised targets for cereal beef production.

**Table 1 Animal performance (bulls & heifers)**

Sire	Top 1%	Bottom 1%	sed	Sig
Gestation (days)	286.1	284.5	1.35	NS
Calving Ease Score <sup>1</sup> (1-5)	1.46	1.31	0.156	NS
Birth weight (kg)	48.2	47.1	0.87	NS
Slaughter wt (kg)	534	530	7.7	NS
Days to slaughter	396	413	5.7	**
DLWG (kg)	1.23	1.17	0.223	*
Carcase wt (kg)	296.1	283.6	5.2	*
Kill out (%)	55.4	53.3	4.8	**
Carcase daily gain (kg)	0.69	0.63	0.019	**
Conformation class <sup>2</sup> (1-7)	3.85 (R)	3.42 (O+/R)	0.167	*
Fat class <sup>2</sup> (1-7)	3.69	3.72	0.150	NS
Carcase price (p/kg) March 2006	1.95	1.92	0.012	NS
Carcase value (£)	575	543	11.9	**

NS = not significant, \* = P<0.05, \*\* = P<0.01. <sup>1</sup> Calving Ease Score: 1= unassisted and 5 = Caesarean.  
<sup>2</sup> EUROP carcass classification: Conformation: P+=1 and E=7, Fat class: 1=1 and 5H=7.

**Table 2 Animal performance – Bulls versus Heifers**

Calf sex	Bulls		Heifers	
	Top 1%	Bottom 1%	Top 1%	Bottom 1%
Slaughter wt (kg)	585	574	484	487
Days to slaughter	405	430	388	397
DLWG (kg)	1.32	1.23	1.13	1.12
Carcase wt (kg)	330.1	312.1	262.0	255.2
Kill out (%)	56.4	54.4	54.1	52.4
Conformation class <sup>1</sup> (1-7)	3.92	3.54	3.77	3.31

**Conclusions:**

- The calves sired by the Top 1% Beef Value bull recorded significantly higher DLWGs, daily carcass gains, carcass weights, killing out percent, improved carcass conformation scores, carcass values and were slaughtered 17 days earlier compared to the calves sired by the Bottom 1% Beef Value bull.
- '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 £22. In this study the difference in carcass value was £32 per calf thus exceeding the predicted value by £10. This simplistic calculation does not take into account the benefits accruing through the reduced number of days (17) to reach slaughter condition with Killerton Travis which was estimated based on the costs at the time of the study to increase the financial benefit by a further £14 for this Top 1% Beef Value sire giving a total net gain of £46 per calf.
- The bull calves from the Top 1% sire compared to the bull calves from the Bottom 1% sire were slaughtered 25 days sooner with an 18kg heavier carcass with an improved conformation grade. Based on March 2013 costings with home-mix @ £200/t, miscellaneous costs of 40p/day and R grade carcasses @ £3.70/kg the extra margin for the Top 1% sired calves is worth £136 per bull calf.
- The beef industry must make greater use of high index bulls, have confidence in EBVs and stop using 3<sup>rd</sup> rate bulls that cost kill price plus £50

**Reference:** Marsh, S.P., Vickers, M. and Wharton, N. 2008 Evaluation of progeny from Limousin bulls with either a Top 1% or Bottom 1% Beef Value. *Proceedings of the British Society of Animal Science*. Paper 206