

Intensive Feeding of Devon Steers

To prove the merits of intensively feeding purebred Devon steers, a trial was conducted at one of Australia's major feedlots. Steers from one Devon breeder (Barnstaple Devons) were compared to a number of other breeds in the same feeding pen. The results showed that purebred Devon steers were ideal for feeding and produced carcasses that were suitable for the high quality export trade to Japan.

SUMMARY OF RESULTS

- *Devon steers outperformed all British breeds for weight gain and were as good as European breeds*
- *Devons steers had the least amount of fat compared to all British breeds and had similar fat cover to European breeds*
- *All carcasses from Devon steers had ideal fat cover. No Devon steer had too little or too much cover.*
- *The frame size and maturity of the Devon steers made them suitable for longer term feeding (200 – 300 days).*
- *The flexibility of the Devon steers made them ideal for many markets.*

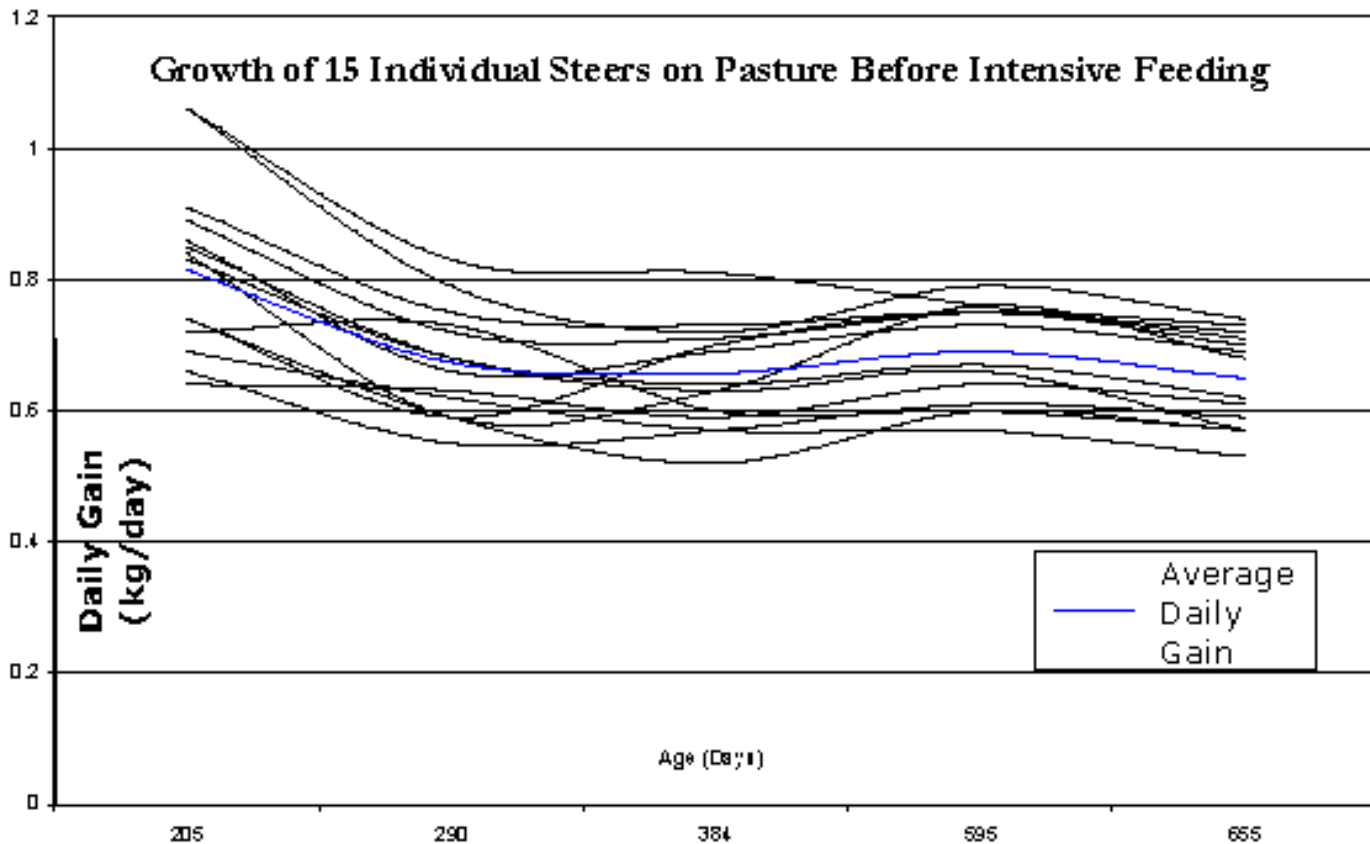
THE OPERATION OF THE TRIAL

Fifteen steers from Barnstaple Devons were selected for feeding at Killara Feedlot on the Liverpool Plains of NSW. The steers were placed in a feed pen with about 300 other steers. At the conclusion of the feeding period, 141 steers were selected for similar finish and sent to slaughter at an export licensed abattoir.

All steers were individually numbered and were identified at slaughter to relate live weight information to carcase information. The steers from Barnstaple Devons were further identified for birth date, growth rates and sire and dam information. Basic breeding information about each Devon steer is contained in the following table

Breeding Information for Devon Steers in Killara Feedlot Trial		
Steer ID	Sire	Dam
S014	BARNSTAPLE MONTALBAN	509
S022	BARNSTAPLE MAGELLAN	E051
S026	BARNSTAPLE MARRIOT	464
S027	BARNSTAPLE MAGELLAN	N164
S076	BARNSTAPLE DAVENPORT	567
S080	BARNSTAPLE DAVENPORT	J068
S087	BARNSTAPLE MONTALBAN	506
S093	BARNSTAPLE MONTALBAN	556
S115	BARNSTAPLE MARRIOT	407
S122	BARNSTAPLE MARRIOT	N102
S133	BARNSTAPLE DAVENPORT	Q040
S140	BARNSTAPLE MARRIOT	N112
S145	BARNSTAPLE DAVENPORT	L010
S156	BARNSTAPLE MAGELLAN	F049
S157	BARNSTAPLE MONTALBAN	N073

Steers were born in winter and spring of 1997. The steers were sired by one of four Devon sires (the sire of S156 was in doubt but was most likely BARNSTAPLE MAGELLAN). Dams of all steers were purebred Devon females. Some dams were registered with the DCBSA. Weights of each steer were taken at 200 days, weaning, 400 days, 600 days and the day prior to entering the feedlot. To illustrate the growth of each steer prior to entering the feedlot, see the following chart.



After weaning, all steers were grazed on pasture until the commencement of the trial. Up to entering the feedlot, steer growth was steady and adequate for normal growth and development.



“Prior to entering the feedlot, steers were undergoing normal pasture finishing. In late autumn, the feed is high quality (high protein) typical of the dry pasture at this time of year.”

The 15 steers in the trial were weighed empty by the feedlot at the start of the trial. They were placed in a large feeding pen with about 300 other steers that had undergone similar preparation and weighing. Some of these other steers had entered the feedlot from 5 to 11 days earlier than the Devon steers.

From visual assessment, the feedlot determined the time that the animals were finished for slaughter. The Devon steers were sent to slaughter at an export abattoir as part of a consignment of 141 similar steers from the same feeding pen.

RESULTS

At slaughter, all 141 steers were assessed for various carcass traits. The average daily gain (ADG) of each group of steers was calculated by the feedlot using a standard formula. The averages for carcass data and ADG are presented in the following table.

Feedlot Results						
<i>BREED</i>	<i>No. Steers</i>	<i>Start Weight kg</i>	<i>Days on Feed</i>	<i>Carcass Rump Fat mm</i>	<i>Carcass Weight kg</i>	<i>ADG on Feed kg/day</i>
Angus	21	440	120	24	355	1.90
Barnstaple Devons	15	455	111	16	371	2.19
Hereford	66	431	122	23	356	1.96
Limousin	11	462	111	14	376	2.24
Murray Grey	20	457	116	23	367	2.05
Santa Gertrudis	7	417	121	27	377	2.43
All Steers	141					

Of the British breed steers, Devons gave the best result for the feedlot for average daily gain, carcass weight and ideal fat cover. In this trial, the range of rump fat for the Devons was 10 to 25 mm, well under the 32 mm maximum for this type of export carcass. Growth of the Devons in the feedlot was similar to the European breed. The actual carcass information for each Devon steer is presented below.

Pre-Feeding and Carcass Details of Devon Steers				
	<i>Pre Feeding Information</i>		<i>Carcass Information</i>	
Steer	<i>Age Days</i>	<i>Live Weight kg</i>	<i>HSCW kg</i>	<i>Carcass Fat (P8) mm</i>
S014	730	450	338.5	14
S022	757	465	376.0	12
S026	712	410	330.0	14
S027	744	470	386.5	22
S076	645	480	380.0	19
S080	625	455	369.5	16
S087	628	480	395.5	20
S093	678	455	406.5	25
S115	610	480	371.0	16
S122	626	415	383.5	12
S133	640	480	390.0	17
S140	641	400	349.5	10
S145	633	490	351.0	10
S156	569	430	338.0	12
S157	594	460	392.5	19
Average	655	455	370.5	16

The commencement weight of the Devon steers in this trial was the ideal weight for slaughter for the Australian supermarket trade (market specification of 190 – 260 kg carcasse weights). In other years, these steers were destined for this market. Depending on the season, steers for the supermarket trade are finished off pasture at ages of 14 to 21 months.



“In the midst of cattle of many breeds the Devon steers showed high growth, ideal finish and heavy carcasse qualities”

The type of Devon steers in this trial are also grazed on high quality pasture up to 24 – 27 months before being sold as prime export bullocks with live weights of 600 – 650 kg.

Alternatively, the fed steers in this trial could have stayed on feed for a longer term of feeding. Their frame size and maturity pattern made them suitable for the very heavy export trade of 400 – 500 kg carcasses. The modest fat levels resulting from this feedlot trial further reinforce their suitability for the heavy export trade. In other trial work, Devon steers from selected sire lines have been shown to produce useful marbling, giving carcasses added premiums where long term feeding is desirable.

The performance of the four sires used for this trial is tabulated below.

Sires Progeny Performance					
<i>Sires of Steers</i>	<i>Steers:</i>	<i>Pre Feeding Information</i>		<i>Carcasse Information</i>	
	No. Steers	Age Days	Live Weight kg	HSCW kg	Carcasse Fat (P8) mm
<i>BARNSTAPLE MARRIOT</i>	4	647	426	358.5	13.0
<i>BARNSTAPLE MAGELLAN</i>	3	690	455	366.8	13.7
<i>BARNSTAPLE DAVENPORT</i>	4	634	476	372.6	15.5
<i>BARNSTAPLE MONTALBAN</i>	4	658	461	383.3	19.5
Average	15	655	455	370.5	15.9

As expected, there are differences in the growth of steers from each of the sires. The highest live weight steers from BARNSTAPLE DAVENPORT were also the youngest steers. However, the steers with the heaviest carcasse weights were sired by BARNSTAPLE MONTALBAN. The steers by MONTALBAN also had the highest fat cover. The EBV for rump fat of MONTALBAN indicates the higher potential for more fat compared to the other sires.

Although marbling was not reported for the carcasses, it appears that DAVENPORT has the potential to produce marbling. If high levels of muscling are desired, MARRIOT has proven EMA background and EBV's to support the data. Both MAGELLAN and MARRIOT have low levels of fat, confirmed by the steer progeny in this trial. Growth and carcasse EBV's for the four sires used are reported below.

Sires of Steers	Devon Group EBV (at time of Trial)										
	BW	Milk	200D	400D	600D	Mature Cow	EMA	Rib Fat	Rump Fat	RBV	IMF
BARNSTAPLE MARRIOT	+2.7	+10	+12	+23	+28	+33	+1.7	-1.1	-1.8	+1.5	-0.5
BARNSTAPLE MAGELLAN	+1.5	+8	+6	+16	+17	+13	+0.3	-0.5	-0.9	+0.7	-0.2
BARNSTAPLE DAVENPORT	+2.7	+5	+14	+18	+28	+29	+0.3	+0.5	+0.5	-0.3	+0.2
BARNSTAPLE MONTALBAN	+2.5	-3	+16	+22	+22	+26	+0.6	+1.2	+1.4	-0.3	-

CONCLUSIONS

The Devon steers in this trial were part of the normal production program of a calf breeder and prime steer producer in good cattle country. The fact that the steers were sired by four unrelated Devon bulls indicates the production uniformity possible when selection criteria for sires are made with a view towards realistic production traits.

The ability of Devon steers to fit many market types is an important production tool for the producer.

The broader picture from this trial indicates that steers sired by modern Devon bulls, are capable of fitting many markets. The traits that are needed are:

- **high muscle content**
- **low fat**
- **an evenness of carcass fat**
- **at least a moderate growth pattern**
- **at least a moderate frame**
- **useful levels of marbling**

In practice, to have access to a breed that puts versatility into progeny gives the beef industry significant production advantages.



“Steer S093 in the feed pen at Killara about one month prior to slaughter. This steer started at the average live weight for the Devon group but finished with the heaviest carcass weight”