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**Animal Science Research Centre - Beef Unit Trial Results - 1997 (a)**

**Comparison of the performance of bulls, steers and heifers**

**Object:** To evaluate the performance of Continental x bulls, steers and heifers finished on an intensive beef system.

**Stock:** Continental x Friesian cattle.

**Rations:** All cattle fed an *ad-libitum* ration based on; cooked cereals, crisps, rapeseed meal, maize gluten, pot ale syrup, molassed sugar beet feed, oatfeed, chopped straw and minerals.

The ration was analysed to contain 80.8% dry matter, 12.4 ME (MJ/kg DM) and 13.5% Crude Protein (16.7% CP in DM).

**Comparison:** Bulls versus Steers versus Heifers

**Results:**

Table 1: Animal performance

	<b>Bulls</b>	<b>Steers</b>	<b>Heifers</b>
<b>Start wt (kg)</b>	130	148	135
<b>Slaughter wt (kg)</b>	583	534	488
<b>Days to slaughter</b>	316	283	280
<b>DLWG (kg)</b>	1.44	1.36	1.26
<b>Slaughter age (months)</b>	13.6	13.0	13.1
<b>DLWG (kg from birth)</b>	1.29	1.23	1.12

Table 2: Carcase characteristics

	<b>Bulls</b>	<b>Steers</b>	<b>Heifers</b>
<b>Carcase wt (kg)</b>	317	283	261
<b>Killing out %</b>	54.3	53.0	53.7
<b>Carcase DG (kg from birth)</b>	0.76	0.71	0.60
<b>Carcase grade</b>	R/-U4L	R/O+4L	O+/R 4L/4H

Table 3: Feed intakes (kg/bull) and feed conversion ratio (FCR)

	<b>Bulls</b>	<b>Steers</b>	<b>Heifers</b>
<b>Concs (t/head)</b>	3.05	2.85	2.54
<b>FCR (kg feed: kg LWG)</b>	6.73	7.04	7.19
<b>FCR (kg feed DM: kg LWG)</b>	5.43	5.69	5.81

**Conclusions:**

- Compared to steers the bulls recorded heavier carcass weights (+11.7%), kill out percent (plus 1.4 percentage units), daily carcass gain (+7.2%), DLWG (+5.9%) and carcass conformation grades.
- To compensate for the poorer performance of steers they would need to sell for a premium of 38p/kg deadweight (based on finished beef prices in March 2016) compared to bulls to give the same carcass return. However the steers ate 200kg less feed potentially worth approximately £33 per head with feed costs @ £165/t. Steers are of course much easier to manage and handle.
- The best FCR was achieved by the bulls.
- Compared to steers the heifers recorded the lowest carcass weights (-7.8%), kill out percent, daily carcass gain (-8.4%), DLWG (-7.4%) and poorer carcass conformation grades. In an attempt to maximise the heifer carcass weights this resulted in them being slaughtered at a higher fat classification.
- Feed use 'appears' to be relatively high compared to conventional cereal beef standards, however it must be noted that the ration contained only 80.8% dry matter and included chopped straw. With *ad-libitum* barley based rations, cattle will typically eat 0.5-1kg/head/day of straw.
- Since 1996 there has been a significant improvement in genetic gain in the beef industry and also increased Holstein influence in the dairy cow. The latest batch of British Blue x Holstein bulls that were finished at Harper Adams in Oct/Nov 2015 recorded carcass weights of 338kg at 13.2 months old i.e. their carcass weights were 21kg heavier with a slaughter a fortnight earlier. It could be extrapolated that if Blue x Holstein steers were finished today they would achieve carcass weights of 300-305kg

**August 1997 (amended March 2016)**