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## **Beef crossing of the dairy herd**

### **(Evaluation of production systems for early maturing beef cross dairy-bred steers and heifers)**

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#### **Summary**

- Results from Johnstown Castle show that early maturing dairy cross-bred beef production systems can produce acceptable carcasses and have adequate fat covers at slaughter.
- Utilisation of pasture and focusing on high output per hectare are fundamental to the profitability of these production systems.
- Preliminary economic analysis suggests that production systems that utilise pasture during the finishing period are the most profitable.
- Future research will investigate the influence of stocking rate and the use of clover for early-maturing dairy cross-bred heifer and steer production systems. Alternative systems of production will also be investigated for late-maturing dairy cross-bred beef animals.

#### **Introduction**

Beef bulls are used on the dairy herd to increase calf value when an appropriate amount of dairy sires have been used to generate dairy replacements. Given the low value of male dairy calves this spring and the use of sexed semen on some dairy farms, it is possible that there may be an increase in the proportion of beef cross-bred calves coming from the dairy herd. For the last number of years, as dairy farmers were preparing for a non-quota environment, approximately two thirds of dairy cows were bred to dairy sires with the remainder bred to beef sires. Crossing dairy cows with early-maturing beef breeds, such as Aberdeen Angus and Hereford is the most common approach given the ease of calving and short gestation traits associated with these breed types. For beef producers, these early-maturing dairy beef cross-bred animals have the potential to achieve a commercially acceptable level of carcass fatness at a young age. They are therefore suitable for systems of production which are grass-based, producing saleable carcasses at a relatively low slaughter weight. Typically, early-maturing male dairy calves are finished as steers while heifers are finished off pasture at the end of second grazing season or retained for breeding in the suckler herd. Theoretically, these early-maturing dairy calf-to-beef systems are sustainable in that performance is optimised from grazed pasture. Where grass growth is optimised and properly utilised these systems have the potential to achieve a high output per hectare.

#### **Current research**

On-going research at Johnstown Castle is evaluating a range of production systems for early-maturing dairy beef crossbred animals. February and April born calves (males and females) were assembled for the study. Varying production systems were generated by adjusting the age at slaughter for February and April born heifers and steers (Figure 1). Low input grazed pastures are the focal point for all production systems investigated. Performance results from the calves purchased in

the first year of the three year study are presented. Results to date suggest that production systems for both heifers and steers that utilised grazed pasture during the finishing period were the most profitable.

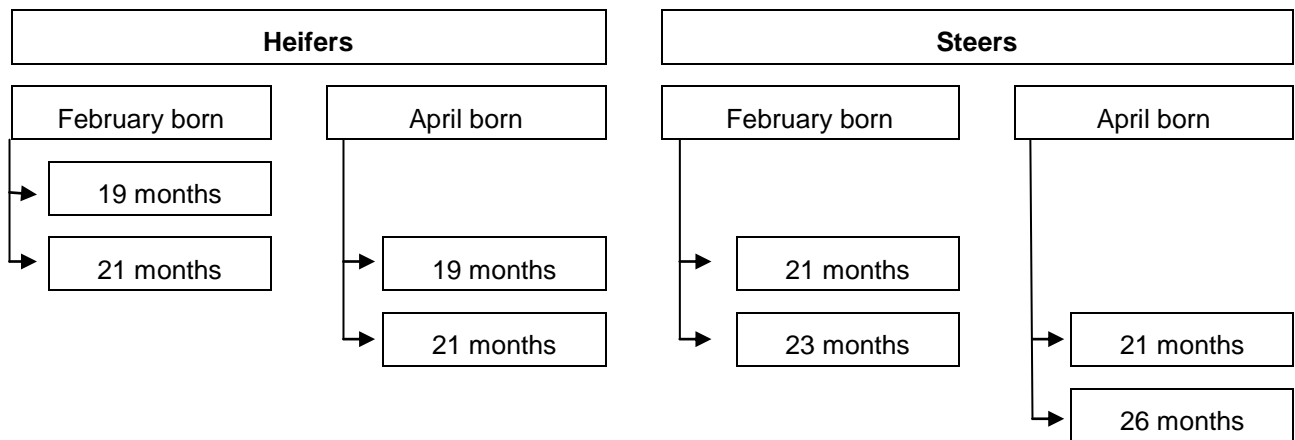


Figure 1 – Finishing systems for Aberdeen Angus and Hereford heifers and steers.

### Heifer production performance

February born heifers in the 19 month production system were 454kg at slaughter yielding a carcass of 228kg. Live weight and carcass weight for heifers in the 21 month production system were 471kg and 238kg respectively. Carcass conformation for heifers in both production systems were predominately 'O=' with carcass fat classes of 3-/. The April born heifers also had two ages at slaughter. The first group were slaughtered in November at 19 months of age following supplementation with 2.5kg concentrates daily for the final 60 days at pasture. The remaining animals were housed and finished on silage *ad-libitum* with 5kg concentrates per day. These animals were slaughtered in January at 21 months of age. April born heifers in the 19 month production system had a live weight at slaughter of 465kg yielding a carcass weight of 234kg. The heifers in the 21 month production system had a live weight and carcass weight of 501kg and 249kg, respectively. Carcass conformation of heifers in both production systems were predominately 'O=' with carcass fat classes of 3-/+.

### Steer production performance

Consistent with the heifer production systems, the steers were either February or April born and had two ages at slaughter. The first group of February born steers were slaughtered off pasture in November at 21 months of age, while receiving 2.5kg concentrates/day. The remainder of the February born steers were housed and finished indoors on silage *ad-libitum* plus 5kg of concentrates per day. These animals were slaughtered in January. Live weight and carcass weight of 533kg and 277kg, respectively, were achieved for steers in the 21 month production system. February-born steers finished at 23 months of age were housed after the second season at pasture and finished indoors on silage *ad-libitum* plus 5kg concentrate per day. Live weight at slaughter was 581kg and a carcass weight of 293kg was achieved. Carcass conformation for steers in both production systems was predominately 'O=/O+' with carcass fat classes of 3-/.

Late-born steers also had two slaughter dates. The first group were housed in November after the second season at pasture and finished at 21 months of age on silage *ad-libitum* plus 5kg concentrates/day. These animals were slaughtered in January at 545kg live weight. Carcass weight for these steers was 270kg. The final group were housed and stored over the second winter on a silage only diet. These animals were turned out to pasture for a third season and were slaughtered in June at 26 months of age. Live weight at slaughter was 606kg and a carcass weight of 315kg was achieved. Carcass conformation for steers in both production systems were predominately 'O=/O+' with carcass fat classes of 3-/+.

### **Future research**

Future research at Johnstown Castle will investigate stocking rate and the use of clover for early-maturing heifer and steer production systems. Alternative systems of production are also being investigated for late-maturing dairy cross-bred beef animals.

**The above article was reproduced courtesy of Teagasc.**

**Footnote comment from Simon Marsh, Principal Lecturer – Beef Cattle Specialist, Harper Adams University.**

You will note in the above article that the heifers finished at 19-21 months produced carcasses weighing 228-249kg. Some abattoirs penalise light-weight carcasses with penalties of 20-70p/kg for carcasses below 260kg. Consideration must therefore be given to marketing these cattle with the objective to sell them to a processor involved in a native breed premium scheme.