

Virtual Beef Week 2020

Tuesday 7 July

How to achieve high performance



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With the expansion of the Irish dairy herd over recent years more dairy-origin calves are available for beef production, but considerable scope exists for integration of beef and dairy farmers' needs.

» Components of a high-performance calf-to-beef system

The dairy-beef unit at Teagasc Grange consists of 37.5ha (93ac) and buys in 120 calves annually to be produced from a grass-based under 24-month steer system. The current focus is on comparing the performance of three dairy-beef genetic groups, which consist of male Holstein Friesian (HF) and two Angus (AAX) groups, representing the main calf breeds coming from the dairy herd.

The HF group are the progeny of the top four EBI sires, while the two AAX groups are the progeny of AA sires divergent in genetic merit for carcass weight and conformation. Both have similar breeding values for ease of calving.

With the first year of this study now complete, HF steers were slaughtered at 23 months after a finishing period of 81 days. The animals each consumed a total of 740kg of concentrate over their lifetime. These steers had an average carcass weight of 305kg, grading O- with a fat score of 3+, generating a carcass output of 976kg/ha.

The AAX steers were slaughtered at 22 months after a finishing period of 61 days and a lifetime concentrate consumption of 638kg. Carcass weight was 297kg, grading O= with a fat score of 3+, giving a carcass output of 949kg/ha. Each of these systems has achieved exceptional performance due to particular attention to three key areas: calf health, calf rearing/nutrition and grassland management.

Calf health

Calves arrive on-farm at 21 days old from as many as 35 sources, hence the need to implement a strict herd health plan to minimise risk. Vac-



ination, monitoring and enhancing welfare have helped maintain low mortality levels (1-2%) within the calf-to-beef unit at Teagasc Grange.

Bovine respiratory disease (BRD) is the major health challenge. Calves are vaccinated at three weeks (24 hours post-arrival) and seven weeks old against RSV, PI-3 and IBR and receive booster vaccinations six months later in the autumn before housing.

Calf liveweight performance is monitored weekly during the rearing phase and fortnightly during the grazing season which, in conjunction with faecal egg counts, plays an important role in managing parasites.

Calf rearing/nutrition

The effect of early calf nutrition on lifetime performance is evaluated, with half of the three groups reared on either 4l or 8l of milk replacer/day. From the first year's results, the calves on 4l per day consumed 20kg less milk replacer during the rearing phase and consumed 25kg more concentrates during that period, with no significant effect on carcass

performance.

The transition phase occurs between weeks four and eight, when calves move from pre-ruminant to ruminant, with the rumen taking over the main responsibility for feed digestion. The objective during this period is to encourage young calves to increase their intake of solid feed, to enhance rumen development and increase performance.

To achieve this, ad-lib concentrates are offered to calves, along with a high-quality fibre source (straw). A successful transition phase will minimise stress and maintain performance of calves when weaned from a liquid milk replacer diet, as well as enhancing their ability to utilise grazed grass during the grazing season.

Grassland management

The calf-to-beef system at Teagasc Grange is built around the efficient use of grazed and conserved grass (silage). In 2019, the dairy-beef unit grew 14.5t DM/ha and achieved a 292 day grazing season. The supply and

in a dairy calf-to-beef system



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quality of grass was controlled by completing a weekly farm walk and feed budget.

During the mid-season, there is always 12-14 days of grass ahead, and yearling steers are allocated pre-grazing covers of 1,300-1,600kg DM/ha every 48-hours, grazing to a residual height of 4cm. Calves are offered the cleanest and most palatable swards, generally following the removal of surplus bales or first-cut silage.

High-quality silage plays an important role in developing weanlings over the winter and achieving high performance during the finishing period. Due to the low spring demand experienced in calf-to-beef systems, there is an opportunity to make high-quality silage in early to mid May. The after-grass offers high-quality swards for calves.

» Achieving targets on Teagasc Green Acres farms

Phase 2 of the Teagasc Green Acres Programme began in 2019 and consists of 12 farms around the

country, varying in size, soil type and representing a mix of full-time and part-time farmers. The objective of the programme is to implement best practice as demonstrated on the Teagasc dairy calf-to-beef research unit at Grange and thereby increase the profitability of these farms.

Aiming to improve calf performance

During Virtual Beef Week 2020, Martin Connolly, who farms in Castleplunkett in Co Roscommon, will outline how he has improved his calf rearing practices through a vaccination programme. Martin rears 120 Friesian bull calves, sourced from three local dairy farms and finishes them in a bull beef system.

Prior to joining the Teagasc Green Acres programme, there was no plan with regard to the vaccination of calves against respiratory and clostridial diseases. As a result, antibiotic usage was very high, with around 50% of calves requiring treatment over the course of their first year.

Since then, a well devised vaccination plan has been put in place, vaccinating against pneumonia, IBR and clostridial diseases.

The levels of antibiotic usage on the farm have reduced substantially, with improvements in calf vigour and thrive also noted.

Improving calf quality

With sibling advantage on their side, the Long brothers – Richard, Michael and Liam – who operate independent beef and dairy operations, have come together to develop a breeding plan that works for both operations, by producing a better-quality calf for Richard and minimising the risk of reduced milk production performance for Michael and Liam.

This arrangement means that Richard is supplied with a calf that has superior beef production characteristics, while the brothers have a guaranteed route to market for their calves.

By matching the bull to the cow, the dairy farming brothers have been able to use beef genetics from a number of breeds.

These include Limousin, Belgian Blue, Charolais, Hereford and Aubrac.

With the longer-gestation sires aimed at earlier-calving cows and the more difficult calving bulls targeted at mature cows with no history of calving difficulty, the breeding programme is creating a win-win scenario for both farms.

With the introduction of this breeding policy in 2019, Richard has seen the Terminal Index values of his 2020-born male beef calves improve from €13 in spring 2019 to €41 this spring.