Derrypatrick Herd: 2017 in review

Matching last year’s performance will be a challenge

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The Teagasc Derrypatrick Herd comprises a 100 suckler cow-to-beef research demonstration herd located in Grange, Dunaway, Co. Meath on 65ha with a stocking rate of 2.1LU/ha. The primary objective is to evaluate alternative suckler calf-to-beef production systems. The herd consists of Limousin and a three-quarter beef bred Simmental and Limousin cows. Over the previous three years, these cows have been bred to either Angus (early-maturing; EM) or Limousin/Charolais (late-maturing; LM) bulls.

Progeny have been finished as 16-month-olds, 20-month heifers and 24-month steers. As of 2018, all male progeny will be slaughtered as steers, to ensure the highest degree of grazing synergy, which will result in a higher stocking capacity. Data collection of the grazing and breeding research projects will begin in 2018.

Calving

At the beginning of April 2018, 80% of the herd had calved. Following two sets of twins and a clean bill of health, there were 81 live calves from 61 cows. There were a number of assisted calvings following malpresentation but, thankfully, they were all successful. The average calf birth weight was 46kg, while the average calving interval was 305 days, anything below this target figure is a bonus. At the time of writing, calving interval averages 356 days.

Winter 2017/18, as we all are well aware, was very challenging at farm level. While fodder was sufficiently an issue for the Derrypatrick Herd, housing arrangements were tested to the limit. Make-shift creep areas were erected in the slatted shed as ground conditions delayed turn-out. With a good team in place, we were extremely vigilant with calf health this winter.

All calves were vaccinated against respiratory diseases from 10 days of age. At the first sight of dullness or calves off-form, temperatures were checked and the appropriate action taken. So despite remaining housed for an extended winter, the animals suffered no major health issues.

Breeding

Our 12-week breeding season began on 1 May. The breeding herd grazes in four groups of ~30 and each group is accompanied by a teaser bull. All breeding will be carried out using AI, and the AMPF rule will be applied. The sires elected for breeding 2018 are outlined in Table 1. Cows are bred to one of four (from each breed) Charolais, Limousin, Simmental and Angus sires, whereas heifers are bred to one of four Angus sires. Aids to heat detection included teaser bulls with chin-ball, tail paint and visual observations (three times daily). The target for 2018 is to achieve a pregnancy rate of at least 90% and to have all heifers in-calf in the first six weeks of breeding.

Animal performance 2017

A summary of 2017 calf performance is shown in Table 2. All male calves were weaned in mid-December. Gradual weaning began on 10 October. On average, cows weaned 43% of their body weight in calf-weight.

Due to poor weather conditions, cows remained indoors after weaning. Calves were offered 1kg/head/day of a barley-based concentrated ration from 10 days prior to weaning until housing, four weeks after weaning. Cow liveweight and BCS at weaning were, on average, 680kg and 3.5, respectively.

A summary of slaughter performance of 2017 is presented in Table 3. Having implemented the Teagasc 16-month bull system, all bulls were offered a barley-based concentrated ration (2kg/head/d) from weaning. When housed (11 November), bulls were offered first-cut silage (72% DMD) ad-lib plus 2kg/head/d of concentrate. Concentrate was gradually increased in all bulls receiving ad-lib by the first week of January. Bulls were slaughtered in mid-June 2017 at 16 months of age achieving a lifetime ADG of 1.35 kg with an overall concentrate input of ~1.3t/head. finishing period. Some animals were drafted for slaughter on 16 November whereas the remaining animals were slaughtered on 7 December with only a five-week interval required.

Steers achieved the targets required for a 24-month steer system, but did so three to four months early. In 2017, a total of 28 cows were culled with chronic lameness and poor performance being the main factors. Arguably, the best cow in the herd was culled due to chronic lameness, first calving at 25 months, this nine-year-old cow produced seven calves resulting in 2,600kg of beef with an average calving interval of 365 days. At slaughter, this Limousin (Rocky Bred) cow weighed 988kg and left a 467kg U-4 carcass.

Economic performance for 2017

The Derrypatrick Herd gross margin for 2017 is €1,235/ha compared to the 2016 gross margin of €1,054/ha.

Increased fertiliser costs were due to investment in soil fertility by using compound fertiliser. Lower feed costs were due to shorter finishing periods for cull cows, heifers and steers. Replicated animal performance of the animal and economic performance outlined above is a key target for 2018.

Research

White clover (Cheladnium and Aberherald) was incorporated into half the farm (every second paddock) during 2017. The aim is to evaluate the effect of incorporating white clover into perennial grass swards on beef production, utilisation, cow persistency and animal performance of a suckler-to-beef system.

Clove was over-sown into existing pastures at a rate of 3kg/ha (32kg/ac) after a tight grazing or silage harvest using an Einbock pneumatic seeder. Fertiliser (67:12:13) was applied at sow rates of 4kg/head/day over a two-week period. The aim was to finish all heifers and 24-month steers by 30 December and steers before the second winter. In total, 16 heifers and 12 steers were slaughtered following supplementation at grass.

In comparison to 2016, fertiliser costs were €165/ha higher and purchased feed costs were €145/ha lower resulting in overall direct costs being €59/ha lower in 2017.

Breed ing 2017

Breed ing 2017 was the first year of a three-year period of replacement sire high terminal index terminal index sire comparison. A team of sires, across breeding, are being selected on both maternal traits and high terminal traits for the duration of this comparison.

The calves from these sires will be managed to slaughter in a 24-month heifer or 24-month steer production system. The aim of this study is to determine the effect of selecting high replacement index in replacement sires to high terminal index sires on animal performance and carcass output. Within the replacement index, sires were selected on the following traits: milk yield, calving fertility, cow contribution to the replacement index, calving difficulty and overall reliability while maintaining a balanced terminal index. Within the terminal index, sires were selected on: carcass weight, overall terminal index, calving difficulty and overall reliability. Mortality and calving difficulty used on the cow herd was 8%. All heifers were bred to Angus sires using high terminal maternal and high terminal bulls with the same criteria as above. Pathogens in animals involved in this programme will be on display at the Teagasc Beef Open Day on 26 June 2018.