

Deliver what you get paid for

Data indicates that farmers should slaughter some beef animals earlier.

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Agriculture must lower its contribution to greenhouse gas (GHG) emissions and reducing slaughter age is one way to help achieve these targets for beef producers. Keeping beef animals to older ages increases their lifetime GHG outputs. Slaughtering animals as soon as sufficient carcass fatness is reached will lead to a younger age at slaughter.

But are there opportunities to deliver these reductions in the beef herd?

We examined the national ‘prime’ cattle slaughter data from 2011 to 2021 to assess changes over time in animal slaughter age and fat scores for different breed types and genders. The 11-year dataset included 550,000-600,000 steer, 350,000-450,000 heifer and 120,000-180,000 young bull carcasses for each year.

Changes in the breed make-up of the national herd from 2011 to 2021 resulted in the proportion of steer carcasses derived from dairy cows increasing from 52% to 62%. Dairy-bred beef heifers rose from 31% to 47%.

Age at slaughter for steers and heif-

ers in 2021 are given in Figures 1 and 2. This chart shows that most steer breed crosses have an average slaughter age of 26 to 27 months and heifers in their 23-26 month.

In leading technically efficient, beef production systems, age at slaughter for steers is typically under 25 months and less than 20 months for heifers. This suggests that, at national level, there is scope to reduce slaughter age.

Over the past 11 years, age at slaughter has indeed decreased by approximately one week per year for steers. That’s a total of three months in this timeframe (from approximately 29.5 to 26.5 months). For heifers, it has decreased by 1.25 days per year. However, heifers out of late-maturing sires had the least reduction in slaughter age, with progeny out of late-maturing suckler cows mated to late-maturing sires actually increasing their slaughter age by approximately two weeks.

Age at slaughter for young suckler bulls has decreased from around 19 to 17.5 months, whereas dairy bulls have remained constant at around 20 months.

From 2011 to 2021, steer carcass weight has decreased by, on average, 0.5kg per annum. Carcass conformation score decreased by approximately 0.04 units (15-point scale) annually



for dairy-bred steers. It increased by nearly an equivalent amount for suckler-bred steers.

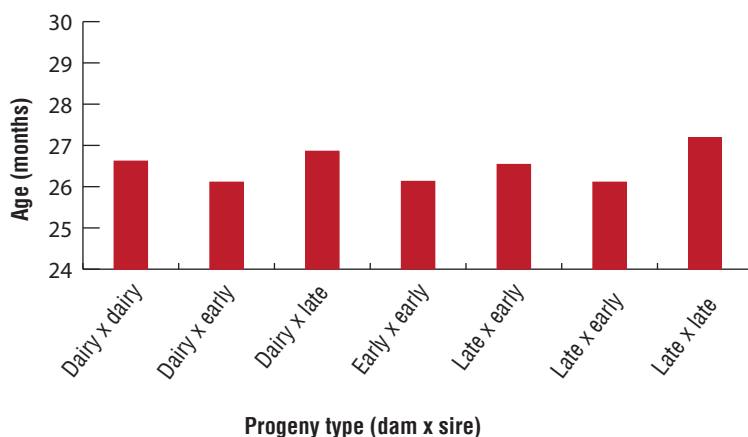
In that timeframe, overall heifer carcass weight has shown a gradual increase of 1.25kg annually and the corresponding carcass fat score has increased by 0.036 units. Carcass conformation decreased by a similar amount (on a 15-point scale).

Proportion slaughtered at more than 30-months

Although the total number of steers slaughtered in 2021 was 37% (164,200) higher than in 2011, the proportion of steers slaughtered at over 30 months of age has decreased by 54% since 2021. So, there were 63,890 fewer steers slaughtered at over 30 months of age (Table 1).

Similarly for heifers, the number slaughtered in 2021 was nearly 29% (101,300) higher than in 2011, with the proportion slaughtered at over 30 months of age falling from 17%

Figure 1: Steer slaughter age (2021).





Eddie O'Riordan.

Figure 2: Heifer slaughter age (2021).

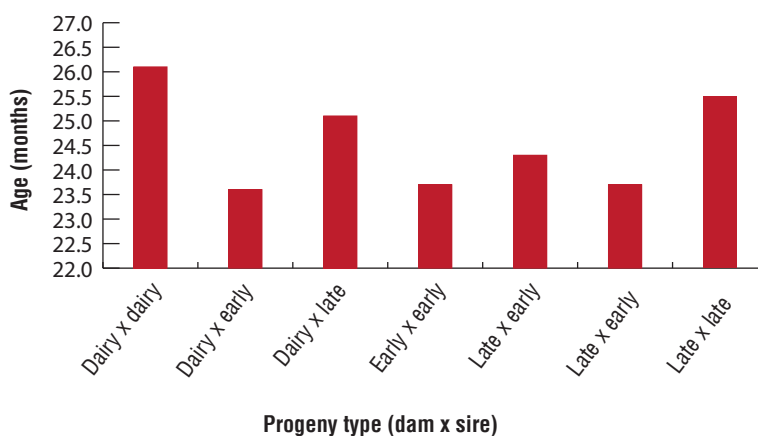
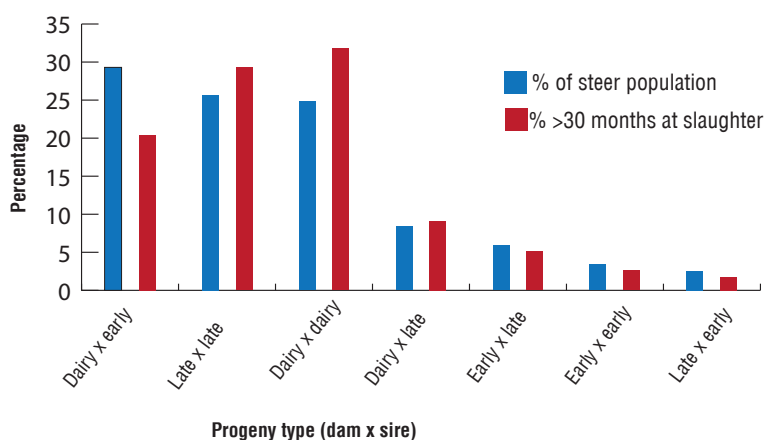


Figure 3: Contribution to national steer herd and slaughtered >30 months of age (%).



in 2011 to 11% in 2021. So, there were 10,080 fewer heifers slaughtered at over 30 months in 2021.

However, this still means approximately 108,000 steers and 49,000 heifers were slaughtered at more than 30-months of age in 2021.

Which animals are contributing to older age at slaughter?

Figure 3 shows the contribution various breed crosses made to steer numbers slaughtered in 2021. The blue bar shows the contribution of the main breed crosses' total 'prime' kill. The red bar shows their respective contribution to the proportion of steers slaughtered at 30+ months of age.

As expected, progeny of dairy dams mated to early-maturing sires (typically Aberdeen Angus and Hereford), at 29% of the total, late-maturing suckler cows mated to late-maturing sires (typically Charolais and Limousin, type animals), at 26% of the

total and dairy dams mated to dairy sires (Holstein/Friesian), at 25% accounted for the majority of the beef animals slaughtered in 2021.

However, their respective contribution to steers slaughtered older than 30 months is different.

Proportionately fewer of the dairy x early-maturing (20%) animals, and more of both dairy x dairy (32%) and late-maturing x late-maturing suckler (29%) animals, were in that age category.

Progeny from dairy x dairy and late-maturing sires tended to be older at slaughter.

The breed composition of heifers slaughtered in 2021 is shown in Figure 4. Progeny of dairy dams mated to early-maturing sires, and late-

maturing suckler cows mated to late-maturing sires accounted for 36% and 35% respectively of heifers slaughtered. Other breed crosses generally accounted for less than 10% each.

In terms of slaughter age, proportionately less early-maturing and more late-maturing sired progeny appeared in the 'greater than 30-month' slaughter age category.

Young bull slaughter age

Approximately 125,000 young bulls were slaughtered in 2021 and their slaughter age distribution is summarised in Table 2. Relatively few bulls from the dairy herd were slaughtered

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Table 1: Number and proportion of steers and heifers slaughtered at over 30-months of age.

Steers	2011	2016	2021	% change
Total number of steers	443,500	545,900	607,700	+37.0
Numbers >30 months	172,100	131,600	108,200	
% >30 months	39	24	18	-54.1
Heifers				
Total number of heifers	353,200	385,400	454,500	+28.7
Numbers >30 months	58,820	44,500	48,700	
% >30 months	17	12	11	-35.6

Figure 4: Contribution to national heifer herd and slaughtered >30 months of age (%).

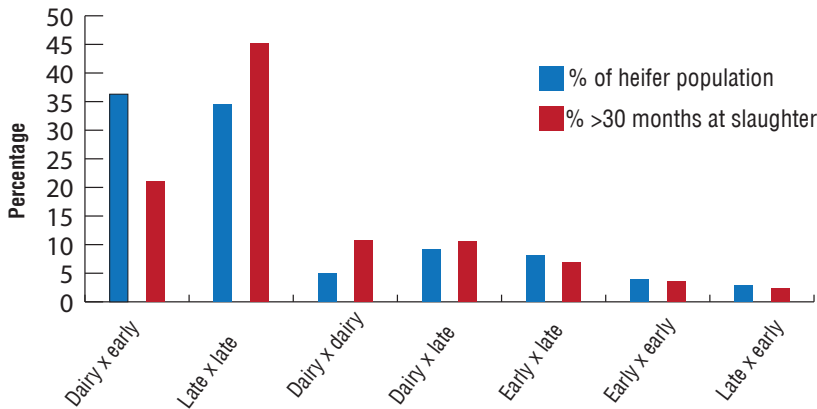
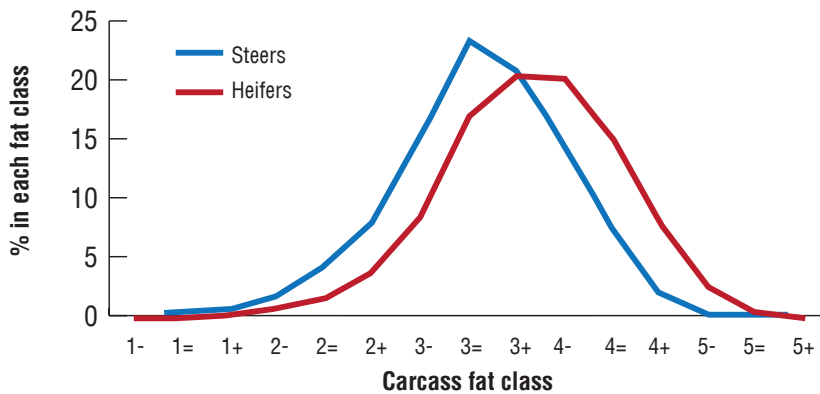


Figure 5: Carcass fat score in 2021.



under 16-months of age, while nearly half of suckler bulls were slaughtered by that age. More than two-thirds of suckler

bulls were slaughtered by 20-months, compared to approximately half of the bulls of dairy origin. Approximately 90% of suckler bulls

were slaughtered by 22 months of age, while only 80% of dairy origin bulls were slaughtered by this age.

Carcass fatness

The carcass fatness distribution for steers and heifers slaughtered in 2021 is summarised in Figure 5. In terms of carcass fatness, a fat score of 2+ (15-point scale) is considered acceptable in most markets.

The average carcass weight of steers slaughtered in 2021 was 356kg. Over half (60%) of the steer carcasses were in the fat class range of 3- to 3+ and a further quarter (around 156,000 carcasses) had a fat score of 4- or greater. This implies that an earlier slaughter date is possible for a large proportion of steers. Increasing carcass fatness is, as expected, associated with increased carcass weight. However, the additional carcass weight was only around a 7kg per unit increase in fat class, as carcass fatness increased from fat score 2+ to 4+.

Average carcass weight of heifers slaughtered in 2021 was 313kg. Almost half (46%) of these heifer carcasses were in the fat class range of 3- to 3+, and a further 47% (around 200,000 carcasses) were in fat class 4- or greater.

Indeed, over a quarter (27% or around 115,000) of heifer carcasses had a fat score of 4= or greater.

These fat scores strongly suggest there was an opportunity to slaughter these animals earlier. As with steers, increasing carcass fatness in heifers was associated with increasing carcass weight. The additional carcass weight was only approximately 4kg per unit increase in fat class, as carcass fatness increased from fat score 2+ to 5.

Table 2: Effect of dam and sire on the proportions (%) of young bulls slaughtered at various ages in 2021.

Slaughter age (mts)	Dairy x Dairy	Dairy x Early	Dairy x Late	Early x Early	Early x Late	Late x Early	Late x Late
15	7	12	20	30	40	41	42
16	11	16	25	36	47	47	49
17	16	21	30	43	54	52	57
18	23	28	37	51	62	61	64
19	31	39	46	60	70	69	71
20	42	52	58	69	79	77	79
21	59	66	71	79	87	86	86
22	76	81	83	89	93	93	93
23	100	100	100	100	100	100	100
Total	35,000	11,500	8,000	3,000	10,000	2,500	55,000

Summary

- Over the past 11 years, there have been significant reductions in slaughter age nationally, especially in steers and suckler bulls.
- Improved lifetime animal performance will potentially lead to a younger

- slaughter age.
- The national data shows that a relatively large number of animals are currently slaughtered at a fat score much greater than the common minimum necessary carcass fat score of 2+.
- There is therefore considerable scope

- to further reduce age at slaughter for particular categories of animals.
- As the extra carcass weight associated with increased carcass fatness is relatively small, many animals could be slaughtered earlier without excessively impacting overall carcass output.