

Background

Agriculture is the largest contributor to greenhouse gas emissions in Ireland with enteric fermentation from ruminants accounting for 58% of Ireland's methane emissions. Research has shown that beef cattle excrete on average, approximately 230g of methane per day, if the national slaughter age reduced by one month, methane output would reduce by over 12,000 tonnes of methane annually. Therefore, a reduction in age at slaughter will lessen the contribution of Irish agriculture to global emissions and enhance its social acceptance and competitiveness.

Aims

The objective of this study is to investigate the potential of reducing age at slaughter through genetic selection and optimum grassland nutrition on a farm system basis.

Future Research Plans

This will be a field-based trial incorporating 240 animals split over 2 years in Teagasc Grange. Animals selected based on estimated breeding values for age at slaughter are raised with the objective of producing a carcass of desirable classification at a reduced age to that of the national average. Three contrasting genotypes will be evaluated, Holstein, and two Angus X Holstein groups, sired by Angus sires of either high or low genetic merit for age at slaughter. These genetic groups will be managed across three concentrate management strategies; Grass-only, intermediate and high concentrate treatments imposed over two grazing seasons. To date, high genetic merit animals produced a 29.6kg heavier carcass than their low merit counterparts, regardless of management.

Proposed significance to the Field of Research

This study will demonstrate if both genetics and management can significantly reduce the age at slaughter and reduce the environmental impact of beef systems.