Will beef and sheep farmers use breeding technologies to reduce carbon footprints?

Citation for published version:
Bruce, A Will beef and sheep farmers use breeding technologies to reduce carbon footprints?.

Link:
Link to publication record in Edinburgh Research Explorer

Document Version:
Publisher's PDF, also known as Version of record

Publisher Rights Statement:
© Bruce, A. Will beef and sheep farmers use breeding technologies to reduce carbon footprints?

General rights
Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy
The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.
Sheep and beef farmers around the UK were interviewed to find out if they would adopt breeding and genetic technologies to reduce methane emissions.

Key Findings

- Farmers do not see themselves as major net producers of greenhouse gas emissions.
- Intensive farming practices to reduce methane emissions do not match with perceived consumer values of naturalness and meat quality.
- Farmers who are not using Estimated Breeding Values (EBVs) see little incentive to do so.
- System level factors impact on farmer decisions.

Methane emissions

“I don’t believe what [carbon footprinting is] saying... Those lambs are outside all year round, they’re eating grass, they’re for all intents and purposes as close to nature as the majority of sheep are in this country and yet we’re still given a carbon footprint of nearly half a tonne per lamb.”

Sheep and beef cattle farmer

- The statistics on the impact of methane emissions from grass-fed animals are not credible to farmers.
- Farmers see no direct economic gain from reducing methane emissions.
- The main option farmers perceive they have is to reduce methane emissions is to reduce animal numbers something that threatens their very existence.
- Methane is an unfair target – farmers feel more focus should be paid to the transport involved in the food chain and other human activities.
- Practices to reduce methane emissions (changes in feeding, breeding or rumen vaccination) will be viewed negatively by those who pay a premium for local, grass-fed, slow grown meat.
- Where environmental payments are heavily relied upon, changing grass varieties or additional feeding is not an option.

Opportunities for the sector to manage methane emissions

- Emphasise increasing production efficiency, rather than focus on reducing methane emissions in the first instance.
- Provide evidence of ways to reduce methane emissions in practice.
- Include farm level actions, such as improved grass management or planting trees.

ESRC Innogen Centre

Will beef and sheep farmers use breeding technologies to reduce carbon footprints?

Mitigating the environmental impact of cattle and sheep: animal genetics and farmers’ readiness for uptake

Dr Ann Bruce

www.genomicsnetwork.ac.uk/innogen
Breeding for production

“For several years I did go and selected [sheep] slightly on the look of them but it was mainly on the performance. I brought them here [to this hill environment] and thought they did really badly.”

Upland sheep and beef farmer

- Some farmers make extensive use of Estimated Breeding Values (EBVs).
- However, EBVs are commonly doubted because they rely on farmer measurements.
- Excessively narrow selection targets for dairy cattle have resulted in physiological problems and have generated cynicism and lack of trust in animal breeding ‘experts’.

Opportunities for the sector to manage methane emissions

- Provide more evidence that high EBV animals perform well in hill conditions.

Breeding Systems

“The sheep industry is a very strange industry, there’s all sorts of traits in breeds that have nothing to do with economics… But when you’re involved in it, it’s not easy to change it.”

Sheep and beef farmer

- Sheep farming is dominated by a ‘show-ring’ culture. For a farmer to breed sheep counter to this culture, and be economically successful, they need to be confident a market exists for their animals.
- Economic benefits from faster growth rates, improved feed efficiencies or superior quality carcases are not immediately visible to sheep farmers.
- Dairy farmers produce around 50% of beef and yet milk production is their core business. Beef calves are ‘icing on the cake’ or even a ‘by-product’ - genetics is of little concern.
- Limited availability of labour is a major determinant of many farming systems and drives the desire to keep things simple.

*Research study details:

42 in-depth interviews were conducted between Sept 2010-March 2011, of which 30 were with farmers and 12 with people working in the broader industry.

Farms were located from the South of England to the North of Scotland and included organic and conventional, upland and lowland, specialist breeders as well as commercial producers and producers selling liveweight, deadweight and direct to consumers.

Contact Author:
Dr Ann Bruce, Research Fellow, ESRC Innogen Centre, University of Edinburgh, Old Surgeons’ Hall, High School Yards, Edinburgh EH1 1LZ t: +44 (0)131 650 9105 e: ann.bruce@ed.ac.uk
web: www.burpingsheep.org or www.genomicsnetwork.ac.uk/innogen

Contact Centre:
Innogen: ESRC Centre for Social and Economic Research on Innovation in Genomics
www.genomicsnetwork.ac.uk/innogen
Innogen at the University of Edinburgh t: +44 (0)131 650 9113 e: Innogen@genomicsnetwork.ac.uk
Innogen at the Open University t: +44 (0)1908 654 782 e: Innogen@open.ac.uk

Photos: Donald Bruce