

Factsheet: The Role of Livestock Management in Reducing Farm Emissions



The management of ruminant livestock plays an important part in addressing emissions from agriculture. Greenhouse gas emissions from the beef, sheep and dairy sectors contribute considerably to agriculture's carbon footprint due to the release of methane by ruminant livestock. Livestock manures also contribute to greenhouse gas emissions however these emissions are covered by the nutrient and manure management series of factsheets.

Methane (CH₄) is a powerful greenhouse gas, 25 times more potent than carbon dioxide and therefore a significant contributor to climate change. It is produced naturally in the rumen as a result of enteric fermentation, part of the natural digestive process and released into the atmosphere when the animal belches. In addition to its impact on the environment, methane losses also represent a loss of energy which could otherwise be used for milk or meat production. Any reduction in methane emissions therefore has both positive environmental and economic benefits.

The process of enteric fermentation and methane release is a natural process which cannot be eliminated, however measures can be taken to improve and optimise production efficiency so that methane release is minimised per kg of beef or lamb or per litre of milk. Work carried out by EBLEX and DairyCo over recent years highlights the beneficial impact of combining the efficient use of resources with management techniques to deliver the greatest efficiency from an enterprise. This not only improves efficiency and returns but also a lower carbon footprint and impact on climate change overall.



Opportunities

The best opportunities to reduce emissions from ruminant livestock are through improved breeding and fertility, feeding and general management and husbandry. In maintaining a high level of health and welfare and optimising production efficiency of your livestock the intensity of emissions related to their production is reduced. Management therefore needs to be focused on optimising livestock production efficiency. It is important to note that a balance needs to be struck to ensure that production is optimised as opposed to maximised – this requires a holistic approach to management to make sure that all aspects of the enterprise and environment complement each other and that any potential negative knock-on effects are avoided.

Another aspect of ruminant livestock systems which is often ignored is their carbon sequestration ability. Grassland based systems hold huge potential in terms of their capacity to store carbon. Effective management of grassland areas and grazing livestock can maximise an area's potential as a carbon sink.

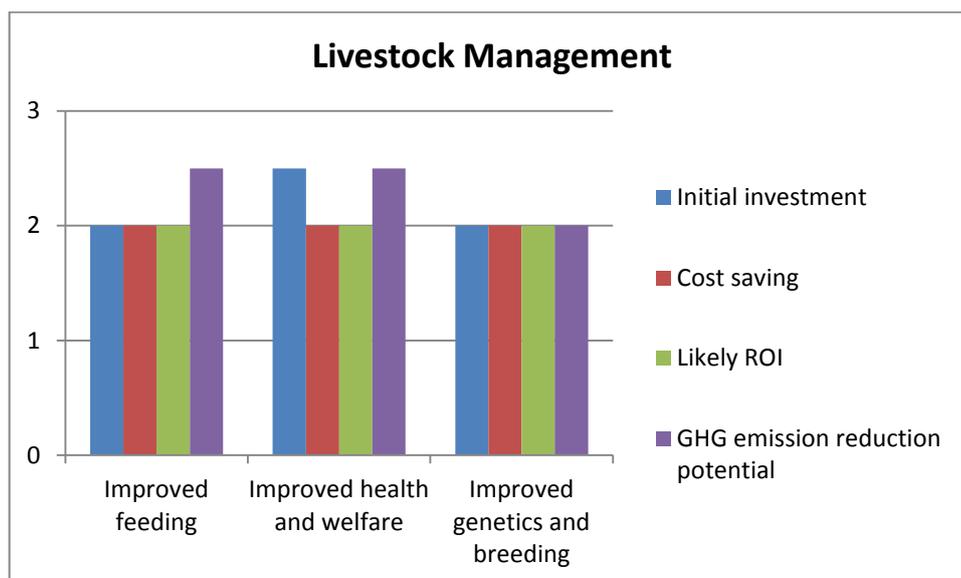
The main sector bodies (EBLEX and DairyCo) have produced a vast amount of literature which covers all aspects of production and provides a vast amount of technical information on improving production efficiency. The factsheets in this series draw on published information, summarising the key points and signpost to further and more detailed information for you to explore.

Economic Benefits of Livestock Management

We have researched three of the most popular livestock management options and assessed their relative benefits based on:

1. Initial investment
2. Cost saving
3. Likely ROI
4. GHG emission reduction potential

The graph below shows the results of the research.



Results: Again, a fairly equal playing field with low carbon livestock practices. The top scorer is improving animal health and welfare, which scores good/excellent for all four areas. In second place is improving the diet, followed closely by improving genetics and breeding.

Economic verdict: a blend of these practices makes the most sense, but it seems that the focus should be on improving animal health and welfare.

Further Information

For more information on the carbon footprinting work carried out by EBLEX and DairyCo see below:

DairyCo Carbon Footprint Report 2012: Greenhouse gas emissions on British dairy farms

<http://www.dairyco.org.uk/resources-library/technical-information/climate-change/carbon-footprint-report-2012/>

EBLEX The Beef and Sheep Roadmap – phase three: Down to Earth

http://www.eblex.org.uk/documents/content/research/rd_cc_g_f_fr_-_roadmap_3_-_down_to_earth_180112.pdf

THE ASHDEN TRUST



European Agricultural Fund for Rural Development: Europe investing in rural areas.

The Low Carbon Farming Project is part financed by the European Agricultural Fund for European Development 2007-2013: Europe investing in rural areas