



NSA Policy Position

NSA position on reducing greenhouse gas emissions in the UK sheep Industry

Background

- Greenhouse gases (GHGs) are gaseous compounds in the Earth's atmosphere which absorb infrared radiation, trap heat and contribute to the greenhouse effect.
- Since the industrial revolution, human activity has increased the concentration of GHGs in the atmosphere, leading to a period of significant global warming. Governments around the world have committed to finding ways to reduce GHGs.
- Sheep (ruminants) have methane-producing microbes in their rumen as they ferment feed). Feed with lower digestibility produces more methane than higher quality feeds, therefore improving feed digestibility reduces methane emissions.
- The critical difference between methane from sheep and other ruminants is that they produce biogenic methane. This is from carbon circulating in the atmosphere, as opposed to releasing carbon from coal, oil, or gas which has been sequestered for millions of years.
- Methane is 28 times more potent than carbon as a greenhouse gas, but is in the atmosphere for only 12 years on average, and, if the forage the sheep ate was left to rot, it would still break down and release methane.

NSA Believes

- The UK sheep industry has a role in reducing GHGs to meet national targets.
- Several management practices must be considered together to improve livestock efficiency and performance that can cut emissions i.e. days to slaughter, soil organic matter, nutritional methane inhibiting additives.
- On-farm estimates of methane and nitrous oxide emissions can be determined using an appropriate GHG accounting tool (i.e. Farm Carbon Toolkit and Agrecalc), although more harmonisation is needed between tools.
- Further reducing GHG emissions could help stabilise climate change, or at the least stabilise extremes.
- Global Warming Potential (GWP) methodologies have viewed ruminant agriculture unfairly. Climate modellers and policymakers use GWP* (Star) as opposed to GWP100.



Reasoning

- Methane is produced by sheep, and while it is 28 times more warming than carbon dioxide, it has a much shorter lifespan of around a decade (CO₂ is around 1000 years).
- Methane is broken down into carbon dioxide and water, with the carbon dioxide returning to the plants or grass the sheep ate, through photosynthesis.
- In the UK greenhouses gases from livestock production totals 6% (versus a global figure of 14%)
- NSA acknowledges how farming systems produce GHGs, which are absorbed and released over different time scales and in a range of quantities. The GHGs are:
 - Carbon dioxide (CO₂) gas, mainly released through:
 - burning of fossil fuels
 - plant decay
 - insect and microbial activity in soils.
 - Methane (CH₄) gas, mainly released from:
 - ruminant livestock such as cows and sheep (following digestion of plant matter).
 - rice paddies
 - coal mining
 - landfill sites
 - Nitrous oxide (N₂O) gas, mainly released through:
 - soil disturbance
 - nitrogen fertilisers
 - urine
 - dung.

Future

- Farmers have a plethora of options to reduce their carbon emissions and improve flock carbon efficiency by producing more from less, including machinery use and power, renewable energy, reducing bought in feed and fertiliser, and genetic and grassland gains.
- The key areas the sheep industry is working on are:
 - **Nutrition** - Improving forage quality through use of modern hybrid grasses, rotational grazing and feedstuffs. Reducing feed spoilage and maximising silage and hay quality can help cut a sheep system's carbon footprint.
 - **Genetics** - Breeding to increase daily liveweight gain to meet market specifications.
 - **Health** - Hygiene, flock health, fertility and body condition all drive production from the same or fewer resources. Healthy animals improve carbon efficiency.
 - **Nutrient management** - Test manure for nitrogen content and follow RB209 guidelines.

Updates:
April 2025