Controlling livestock diseases like bird flu would avoid millions of tonnes of greenhouse gas emissions, finds study

New paper quantifies greenhouse gas emissions associated with outbreaks of animal diseases, finding significant environmental benefits to vaccinating livestock.

LONDON, UNITED KINGDOM, December 8, 2023 /EINPresswire.com/ -- Preventable livestock disease outbreaks such as the recent bird flu epidemic in Europe and North America are generating millions of tonnes of avoidable greenhouse gas emissions, according to a new paper.

> “Preventing disease outbreaks holds significant potential for greenhouse gas emissions reductions in livestock systems.”
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> *Prof. Jude Capper*

The study, published in One Health Outlook, analysed emissions caused by some of the most damaging, but preventable, livestock diseases around the world, including foot and mouth disease and porcine reproductive and respiratory syndrome (PRRS), which costs the US pork industry an estimated US$664 million every year.

Livestock farming is estimated to contribute around five per cent of direct global greenhouse gas emissions, mostly through methane produced during digestion, or 14.5 per cent when including indirect emissions. Emissions are increased by animal disease because greater resources are needed to maintain food production, the paper said.

According to the study, every 100,000 sows spared from PRRS prevents more than 420,000 tonnes of CO2e emissions, meaning that limiting the spread of PRRS in the most vulnerable pig populations would reduce emissions per unit of pork by 22.5 per cent. This is equivalent to removing more than 230,000 cars from the road.

Meanwhile, controlling high pathogenicity avian influenza (HPAI) in high prevalence areas would reduce emissions by almost 16 per cent.

“With global food systems generating around a third of the world’s greenhouse gas emissions, improvements in animal health would help to significantly reduce livestock production’s contribution to climate change,” said Professor Jude Capper, an independent livestock

sustainability consultant and author of the study.

Prof. Capper, who is also the ABP Chair of Sustainable Beef and Sheep Production at Harper Adams University and holds a PhD in Ruminant Nutrition and Behaviour, added: “Increasing livestock vaccination will be instrumental in meeting the dual challenge of halving global greenhouse gas emissions by 2030, while feeding nearly nine billion people.”

The paper analysed the effects of livestock disease on greenhouse gas emissions across different species and production systems, from backyard poultry in low-income countries to large-scale, commercial swine production.

More than 80 per cent of farms in low-income countries are smallholder or backyard operations, often characterised by greater greenhouse gas emissions per unit of meat, milk or eggs often because of resource, infrastructure, economic and political limitations.

Controlling lumpy skin disease, which is endemic in most African countries, in just one 200-cow beef herd saves 114 tonnes of CO2e emissions. For countries like Ethiopia, which has the largest livestock population in Africa at 65 million cattle and where livestock infections cause losses of up to 50 per cent, preventing animal disease would dramatically reduce emissions associated with agriculture.

“Livestock disease has a particularly high environmental burden in low-income countries, where a lack of access to veterinary services limits the ability to control or treat livestock diseases,” said Prof. Capper.

“And as we have seen with Covid-19, a disease anywhere in the world is a potential global threat. Controlling animal disease also means less zoonotic disease risk to people and wildlife, and production of more food to help combat global hunger.”

As well as reducing direct emissions from livestock, disease control would also reduce the greenhouse gas emissions and environmental impacts associated with zoonotic disease, antibiotic resistance and food insecurity.

“Preventing disease outbreaks holds significant potential for greenhouse gas emissions reductions in livestock systems,” said Prof. Capper. “Building on this modelling with further on-the-ground research could provide valuable lessons as climate strategies evolve in the years ahead.”

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