

A GUIDE TO Animal Management and Sustainability



OVERVIEW

The United States has made significant strides in dairy productivity, with more milk being produced and lower greenhouse gas (GHG) emissions per unit of milk than ever before.

With an increasing focus on sustainable agriculture, the dairy sector should continue to explore opportunities to reduce emissions intensity (GHG emissions per unit of milk) and absolute emissions (total GHG emissions over a period of time).

Improved animal health may result in increased absolute emissions at the animal level due to higher feed intake, increased milk production, and longer lives. At the supply chain level, emissions may decrease due to improved productivity and a reduced need for replacement animals.¹ Therefore, approaches to lowering emissions should consider the entire supply-chain.

WHY FOCUS ON ANIMAL HEALTH?

Focusing on improving animal health has benefits for the sustainability of the dairy industry in three areas: environmentally, economically, and the societal perception of the industry.

IT IS ALL INTERCONNECTED

The health of cows is impacted by the environment (e.g., hot environments can cause heat stress in cows) and the environment is impacted by the health of cows (e.g., healthier cows release less GHG emissions into the environment). A resilient dairy sector needs to consider both sides when making decisions about animal care.

OPPORTUNITIES

Improving animal health

Reducing the incidence of disease in a herd is a great way to both reduce emissions and improve a farm's bottom line. Disease often reduces cows' productivity, making them less efficient. A sick cow requires more resources and produces more GHG per unit of milk compared to a healthy cow. Many diseases put cows at greater likelihood of developing other diseases, further exaggerating productivity and efficiency issues. This also translates into less profit due to reduced productivity, the cost of treatment, and increased likelihood of culling.

DISEASE	ESTIMATED LOSSES/CASE* 2	GHG IMPACT 3-6
Mastitis	\$325 - \$457	For every 1% decrease in clinical mastitis prevalence, GHG emissions per unit of milk decreases by 2% and total herd GHG emissions decrease by 1%
Lameness	\$120- \$333	For every 1% reduction in overall herd lameness, total herd GHG emissions decrease by 1.5%
Ketosis	\$111 - \$232	For each case of subclinical ketosis prevented, the GHG emissions per unit of milk decreases by 2%
Displaced Abomasum (DA)	\$325 - \$457	For each DA that is prevented, the GHG emissions per unit of milk decreases by 8%

* Estimated losses include direct costs (e.g., veterinarian and producer labor, supplies, medication) and indirect costs (e.g., non-saleable milk, decreased milk production, reduced reproductive performance).

Note: Other diseases, such as metritis and hypocalcemia, are also expected to have significant impacts on emissions, but research has not been completed to quantify the impacts.

Cows are at the heart of dairy production, and improving animal health and management is a method of improving sustainability that is accessible to every farm.

Adult cow management

Beyond reducing disease, there are many other opportunities for sustainable management on a farm. Achieving higher reproductive efficiency (i.e., higher pregnancy rate) means less emissions. Improving the pregnancy rate in adult cows by 5% (going from 20% to 25%) can reduce herd methane emissions by 10%.⁷ Additionally, it's important to watch for, and mitigate, environmental conditions that make cows less productive. For example, heat stress makes cows less productive and can have long-term repercussions on their health, depending on the length and severity of the stress. Heat stress can also impact the health of unborn calves if heat stress occurs during pregnancy.

Improving youngstock management

The management of youngstock can have life-long impacts on sustainability. Good colostrum management and feeding practices early in life results in better pre-weaning daily gains. This translates into faster time to breeding age and greater milk production. Good ventilation is also important for youngstock. Better ventilation means less respiratory diseases like pneumonia. Early pneumonia in calves leads to lifelong reductions in productivity, which means greater GHG emissions.

References

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THE BOTTOM LINE

Improving animal health and management can have real and meaningful benefits to the sustainability and profitability of dairy herds. Farmers can talk to their veterinarians about making improvements to disease prevention. With healthier cows, we can collectively have a major impact on the sustainability of the dairy sector.