



How  
**COWS** can help us fight  
**climate change**

**Bovaer<sup>®</sup>**

The proven solution to immediately  
reduce enteric methane from dairy  
and beef cattle

dsm-firmenich 



# An urgent focus on methane

At COP26 in Glasgow, more than 100 countries recognized methane reduction as the single most effective strategy to keep the goal of limiting warming to 1.5°C within reach. And there's no time to lose. Rapidly reducing methane emissions from energy, agriculture, and waste can achieve near-term climate goals — with additional benefits for public health and agricultural productivity.

That's why 155 countries, representing over 50% of global anthropogenic methane emissions, have signed the Global Methane Pledge, a collective effort to reduce global methane emissions at least 30% from 2020 levels by 2030. It's estimated that this alone could eliminate over 0.2°C warming by 2050.

**"We have to cut emissions fast. And methane is one of the gases we can cut fastest. Doing that will immediately slow down climate change."**

— European Commission President Ursula van der Leyen, Nov. 2021

**"The world will continue to warm as long as CO<sub>2</sub> is being pumped into the atmosphere. But curbing emissions of methane and other powerful greenhouse gases might reduce the sting."**

— Nature, August 2021





# Taking action to reduce emissions

As population and income levels grow, so do the demands we place on our planet. Developing more sustainable ways is a responsibility we all share. More and more consumers are demanding sustainable options, and food companies are responding. Governments are setting ambitious goals to reduce emissions, and farmers are ready to take action.

## Dairy Net Zero

80+ organizations representing 30% of global milk production have declared their support for the Global Dairy Platform's Pathways to Dairy Net Zero movement.

## Sustainable Beef

The Global Roundtable for Sustainable Beef has committed to reducing the net global warming impact of beef by 30% by 2030.

# Consumer preferences are shifting

# 70%

want retailers to be more transparent about sustainability

# 66%

would pay more for sustainable brands



# Cows can make a difference

Cows have an important role to play in the ecosystem. They digest tough, fibrous plants to produce high-quality nutrients that we need, all while supporting carbon sequestration. Beef and dairy products provide essential, affordable nutrition to billions. And, globally, a billion lives are tied to dairy production alone. Nourishing a growing population while reducing the environmental costs of farming will take smart science and innovative solutions.



# Bovaer® at a glance

Bovaer® is a feed ingredient that reduces enteric methane emissions, contributing to a significant and immediate reduction of the environmental footprint of meat, milk, and dairy products.

## Average reduction of

# 30%

less methane emissions from dairy cows

# 45%

less methane emissions from beef\* cattle

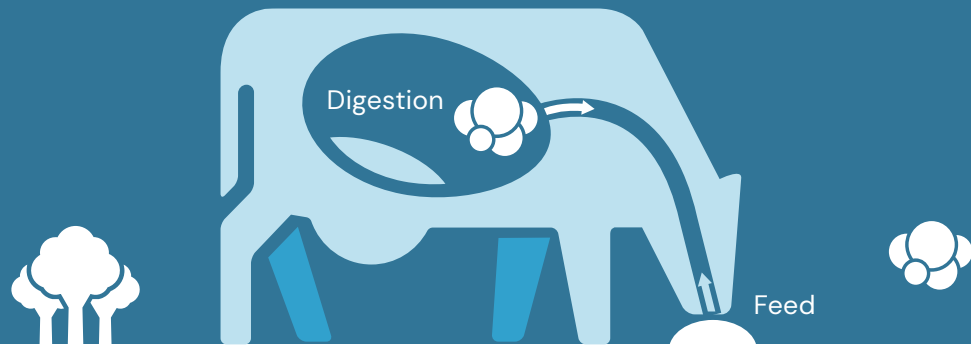
Read more on Bovaer® and its impact at [dsm-firmenich.com/bovaer](https://dsm-firmenich.com/bovaer)

\* Finishing feedlot beef cattle

# Bovaer® the proven solution to immediately and significantly reduce enteric methane from dairy and beef cattle


## How it works?

In a cow's rumen, microbes help break down food. This releases hydrogen and carbon dioxide. An enzyme combines these gases to form methane. Bovaer® is a feed ingredient that suppresses the enzyme, so less methane gets generated. As it acts, Bovaer® is safely broken down into compounds already naturally present in the rumen.





 →  →  generates less methane, on average



**1/4** teaspoon daily in a cow's feed



 takes effect in as little as 30 minutes

**~45%** in Beef cattle  
**~30%** in Dairy cows

## Bovaer® saves about 1 ton of CO2e per dairy cow every year

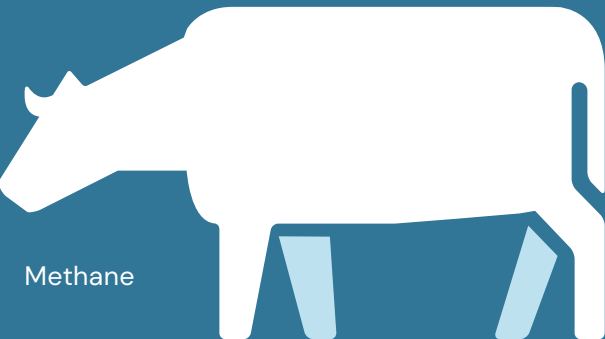
 =   
Feeding Bovaer® to 1 cow saves the equivalent of 127,000 smartphone charges.

 =   
Feeding Bovaer® to 3 cows is like taking 1 family-sized car off the road.

 =   
Feeding Bovaer® to 1 million cows is like planting a forest of 45 million trees.

# 20%

of all methane emissions come from ruminants (beef/dairy cows, goats, and sheep).



proven safe and good for the planet\*

## Bovaer® impact can easily be recognized

Farmers can easily track their impact and communicate this in the value chain.

A simple methodology is available to calculate the methane savings. An app can be used for documentation and verification. Carbon footprint and credit methodologies are available amongst others under both Gold Standard and Verra.

\*According to the CFIA assessment the product is confirmed safe in use and effective in reducing methane emissions, a source of global warming

# Bovaer® FAQs

## What is Bovaer® made of?

Bovaer® is made from two ingredients: nitrate and a bio-based alcohol. After suppressing methane production in the stomach, Bovaer® is broken down into the same natural compounds again, which are already present and processed by the cow's normal digestive and metabolic processes.

## How is Bovaer® made?

Bovaer® is made by heating two ingredients (see above) to bind them temporarily together, resulting in a liquid form. The liquid is then transformed into a powder for convenient use as a feed ingredient.

## What is the environmental impact of production?

Our manufacturing process generates small amounts of CO<sub>2</sub>. This is equal to just 2.4% of the CO<sub>2</sub>e that is actually saved through incorporating Bovaer® in a dairy cow's diet and subsequent reduced methane formation. The total net carbon-equivalent saving of feeding Bovaer® is approximately 1 ton per cow per year.

## Who has evaluated Bovaer®?

Amongst others, Bovaer® received a positive opinion from the Canadian Food Inspection Agency (CFIA) in Canada, and the European Food Safety Authority (EFSA) in the European Union. The CFIA opinion confirms that Bovaer® reduces enteric methane emissions from dairy and beef cattle and is safe for the animal and the consumer. This marks the first time a feed ingredient that reduces methane has been authorized in Canada.

## Where is Bovaer® produced?

Bovaer® is currently manufactured in Germany. An additional large-scale production facility in Scotland will be operational in 2025.

## How can I purchase Bovaer®?

Bovaer® is available through the usual channels or through contact with your regional dsm-firmenich office.

For further information, please contact your regional dsm-firmenich office or [info@dsm-firmenich.com](mailto:info@dsm-firmenich.com)



## Now available: A proven solution

Bovaer® is the most extensively studied and scientifically proven solution to the challenge of burped methane to date. It is now authorized and available for sale in 58 countries including Canada, the EU, UK, most of Latin America, Australia, and select markets in Asia.

## Bovaer® has already saved

# 80,000+

Estimated current savings in tons of CO<sub>2</sub>e

# 70+ 100+ 20+

Peer reviewed  
scientific studies

On-farm trials

Trial countries

16  
North  
America

8 beef and 8 dairy trials  
with up to 82% methane  
reduction

63  
Europe

48 dairy, 4 beef, and  
7 calf trials with up to  
46% methane reduction

8  
Latin  
America

5 beef and 3 dairy trials  
with up to 55% methane  
reduction

15 beef, 6 dairy, and 6  
calf trials with up to 90%  
methane reduction

27  
Oceania



## The journey of Bovaer®

- 2008 DSM initiates Climate Change Induced Innovation program
- 2010 Product first formulated
- 2011 First study results in cattle
- 2016 Registration trials begin
- 2019 Market authorization requests filed
- 2019 Bovaer® product brand introduced
- 2021 First market authorizations received
- 2022 Commercially available in 35+ countries
- 2024 Market authorization Canada, Bovaer® now available in 58 countries globally
- 2025 Additional large-scale production facility opens

\*Check [dsm.com/bovaer](https://dsm.com/bovaer) for our latest numbers



# What people are saying

**“10 Breakthrough Technologies Can Help Feed the World Without Destroying It”**

World Resources Institute

**“...one promising exception is a compound called 3-nitrooxypropanol, which reduces methane emissions by 30%”**

Bill Gates, How to Avoid a Climate Disaster

**“Cutting farming-related methane emissions is key in our fight against climate change and today's approval (of Bovaer®) is a very telling example of what we can achieve through new agricultural innovations.”**

Stella Kyriakides, EU Commissioner for Health & Food Safety

## Bringing progress to life

As innovators in nutrition, health, and beauty, dsm-firmenich reinvents, manufactures, and combines vital nutrients, flavors, and fragrances for the world's growing population to thrive. With growing demand for sustainable animal protein that is safe, nutritious and affordable, we're helping the industry transition to a more sustainable future to meet this complex challenge.

Our Food System Commitments includes a double-digit reduction of on-farm livestock emissions by 2030. The market introduction of Bovaer® is a major step toward delivering on this commitment.

By helping to reduce the methane impact of cattle farming, we are helping to solve a major global sustainability challenge: supplying consumers with sufficient animal protein in a way that is **farm wise and climate friendly**.



dsm-firmenich is a Swiss-Dutch company, listed on the Euronext Amsterdam, with operations in almost 60 countries and revenues of more than €12 billion.

With a diverse, worldwide team of nearly 30,000 employees, we bring progress to life™ every day, everywhere, for billions of people.

# Bovaer®

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