

REDUCING METHANE OUTPUT

Three types of feed additives, three mechanisms of action



SYNTHETIC FEED ADDITIVE

It acts directly in the rumen to inhibit the enzyme responsible for methane production.

- Rapid and measurable effect
- Strong potential scientifically proven
- Most effective in confined systems with controlled diets



FUNCTIONAL FEED

Dietary lipids reduce rumen fermentation and thereby lower methane emissions.

- Holistic herd management approach
- Often integrated into sector-wide initiatives
- Less direct effects (to be combined with other mitigation strategies)



PLANT-BASED ADDITIVE

The high tannin content in these additives alters digestion and thereby reduces methane production.

- Methane reduction coupled with increased milk production
- Variable results depending on conditions

**THESE SOLUTIONS DIFFER:
THEIR USE VARIES DEPENDING ON THE FARMING SYSTEM.**



Each of these solutions can **reduce methane emissions**. They are **still under development** and can be **used in combination with other strategies**, such as forage quality or herd management.

ANTI-METHANE FEED ADDITIVES: BARRIERS TO ADOPTION

ECONOMIC BARRIERS

Currently, the farmer bears the cost... without direct benefits



The cost of the additive is borne by the farmer (although some initiatives provide compensation through incentives).



No existing or widespread mechanism to reward methane reduction.



Other stakeholders in the sector contribute little.

TECHNICAL BARRIERS

Lack of recognition and established references



Limited integration into carbon assessment tools (e.g., CAP'2ER)



Scientific references still limited for some plant-based additives



Variable results depending on farming systems

HUMAN BARRIERS

A topic not yet fully embraced by stakeholders



Distrust among farmers toward certain additives perceived as chemical or controversial



Advisors lack training



Low consumer demand



The **barrier** is not just technical: it is also **economic, sociological**, and linked to **stakeholder practices**.

DEVELOPING ANTI-METHANE FEED ADDITIVES

KEY CONDITIONS

SHARING THE COST

Farmers cannot bear the cost alone

- ✓ Involve dairy processors and manufacturers
- ✓ Establish incentives or subsidies
- ✓ Draw inspiration from existing examples in other countries

TRAINING AND SUPPORT

Farmers need concrete benchmarks

- ✓ Train advisors
- ✓ Share field results
- ✓ Facilitate farmer-to-farmer exchanges

RECOGNIZING THESE LEVERS

What is not recognized is rarely used

- ✓ To be integrated into carbon assessment tools
- ✓ To be included in sustainability indicators
- ✓ Obtain clear scientific validation

THESE ADDITIVES ALONE ARE NOT SUFFICIENT

They must be integrated into **a comprehensive approach**: feed, animal health, and economic performance



Their **development is likely**: **climate pressure, regulations, and industry expectations** will accelerate their adoption