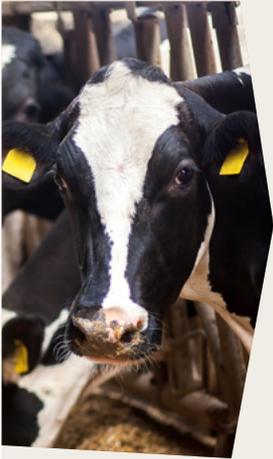


Measuring the impact of carbon avoiding solutions in the agricultural sector: *A Case Study*

Agrifood company Syngenta is creating low-carbon solutions for the agricultural sector



Over 1.9 million tons*

of CO₂e avoided in 2021 -2023 through low-carbon cattle feed

Syngenta has developed Enogen corn for cattle, which can *improve feed efficiency* by around **→ 5%**

Capturing avoided emissions – *assessment details*

- **Functional Unit:** kg CO₂e/kg beef or milk production
- **Impact (kg CO₂e):** beef: 0.50 / kg weight gain; dairy: 0.11/ kg energy corrected milk production
- **Time Period:** Year-on-year
- **Scope:** United States; Canada
- **System Boundaries:** Crop production to milk / meat at farm gate; including upstream inputs

The Business-As-Usual Scenario

- Conventional, non-modified corn hybrids without the alpha amylase trait used for cattle feed
- Meat or milk production in non-grazing animals
- May be fed as corn grain or silage
- Baseline emissions for all corn grown in the regional market are considered consistent

The Low-Carbon Scenario

- The alpha amylase in Enogen corn increases digestibility by improving efficiency of starch conversion to sugars
- Increased digestibility can increase feed efficiency by about 5% in beef or dairy cattle
- The increased digestibility and feed efficiency leads to a decrease in GHG emission intensity in animal production
- Feed efficiency means that less grain or silage is needed to meet the same production level



How It Works

System boundaries



Crop production and processing may be co-located with animal feeding.

More efficient feed use = increased dairy or beef production per unit of feed and reduced effective emissions for the Enogen finished product (meat or milk) when compared with the non-Enogen reference case.

Offers a low carbon cattle feed solution to reduce scope 1 or 3 of livestock and dairy producers.

WBCSD Avoided Emissions Eligibility Gates

- Gate 1 (Climate Action Credibility)
- Gate 2 (Climate Science Alignment)
- Gate 3 (Contribution Legitimacy)

Environmental and Social Side Effects

Reduction in water and land use for crop production due to decreased demand for feed, fewer animals, or fewer days on feed in animal production operations

Third-Party Verification

Yes, for product LCA



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* Based on an updated calculation method as of May 2024

PLEASE NOTE: THE CURRENT VERSION OF WBCSD'S GUIDANCE FOR AVOIDED EMISSIONS IS NOT A STANDARD AGAINST WHICH SOLUTIONS CAN BE VERIFIED. THE INCLUSION OF SOLUTIONS IN THIS USE CASE PILOT IS INDICATIVE AND DOES NOT QUALIFY AS A 3RD-PARTY REVIEW OR VERIFICATION FOR THE UNDERLYING AVOIDED EMISSIONS CLAIMS