

How a genetic tweak boosted ethanol production and serendipitously yielded beef and dairy sustainability benefits

Enogen corn was developed using genetic engineering to add a gene for the enzyme alpha amylase which breaks down starch into its sugar components... It digests the corn starch into sugars that can then be used by the yeast in a biofuel fermentation to produce the ethanol. It more effectively and efficiently serves the function of added enzymes from some other source. This technology was first approved for commercial sales in 2011.

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The economic and environmental significance of Enogen feed advantages was evaluated by the University of Wisconsin-Madison's Animal and Dairy Sciences and Agronomy Departments along with Rock River Laboratory. They looked at milk content and expected revenue as well as corn silage costs. What they found was that by using Enogen corn, a dairy could save \$132 to \$208 per milking cow per year.

...

[They also found] several environmental advantages. These are described below on the basis of what they would mean per year for a herd with 1000 milking cows:

- A greenhouse gas reduction of more than 1.4 million kilograms of CO₂ equivalents – equivalent to taking 314 passenger vehicles off the road
- A reduction in land-use by 249 acres – the equivalent of 189 US Football fields
- A reduction in water-use by 13 million gallons – enough to fill 21 Olympic swimming pools
- An energy savings of 220,000 kW hours – enough to power 19 average US homes

[**This is an excerpt. Read the original post here**](#)