

Enogen corn hybrids can improve feed efficiency and reduce environmental impact in livestock production

Agricultural production systems have been implicated as significant sources of environmental impacts, including increased climate change or global warming potential due to methane and other greenhouse gases generated by livestock, particularly dairy and beef cattle. Livestock production is increasing globally in response to growing demand for high quality protein in emerging economies, while the imperative for management of climate change has simultaneously risen to worldwide attention and international calls to action. Development and adoption of sustainable intensification technologies is critical to our ability to balance these conflicting societal demands. Enogen® hybrid corn, expressing one of the few true output traits in commercial use today, is a unique example of bio-innovation with potential for significant sustainability advantages in animal feed. Enogen corn hybrids are genetically modified to express a robust alpha-amylase enzyme in the starchy endosperm tissue of corn kernels and the event has been fully deregulated in the US since 2011. Research trials at leading universities have documented improved feed efficiency and reduced feed waste when Enogen corn is fed to cattle, as the amylase renders the starch more available and readily digestible. Life cycle assessments (LCAs) based on these controlled studies have been completed for Enogen corn in both beef and dairy production. Each LCA was conducted in compliance with ISO standards, including an independent review. These LCAs confirm that use of Enogen corn as a feed component in beef or dairy production shows quantifiable benefits in the sustainability metrics of primary interest: climate change potential, water use, land use and fossil fuel use, among others. These improvements in feed conversion ratio at the feed yard or dairy result in 4 to 6 percent improvements in each of the four key environmental performance metrics, demonstrating real potential for the livestock sector to meet its sustainability targets.