

DUAL PURPOSE CORN PRODUCTS VS. ENOGEN® CORN

Corn products containing the Enogen® trait are transgenic and contain an event that produces the enzyme, alpha amylase. The function of alpha amylase is to break down starch and convert it to sugar. This product was originally developed for the ethanol industry to replace the reliance on added alpha amylase in the ethanol production process. Syngenta® is promoting Enogen corn products as an improvement over non-Enogen corn products for use in dairy rations. The assertion is an increase in starch and sugar availability while improving fiber digestibility.

One study indicated that dairy cows fed an Enogen corn silage compared to an isoline (related corn product without the Enogen trait) corn silage increased milk yield and feed efficiency and decreased methane (CH₄) emission intensity.¹ Another study compared the silage and grain from an Enogen corn product to the silage and grain of an isoline. The Enogen corn product tested increased dry matter intake but only milk yield increased for Enogen corn silage ration when compared to the isoline. In conclusion, the Enogen corn silage increased milk and protein yields and lowered methane compared to the isoline; however, the Enogen corn silage and grain ration had only numerical (not statistically significant) increases on milk and energy corrected milk yield when compared to the isoline.²

It is important to recognize that these studies compare two corn products with the same base genetics and does not compare an Enogen corn product with a broad representation of available corn silage products.

Growing Requirements for Enogen corn products:³

- Based on the stewardship requirements for Enogen traited corn products, it would be difficult to conduct a head-to-head comparison as Enogen traited products must be separated by a 30-foot border from other annual crops including non-Enogen corn products.
- All equipment must be thoroughly cleaned that was used to plant, harvest, store, or transport Enogen traited seed or grain.
- All Enogen grain or silage must be identified and segregated from non-Enogen grain or silage.
- All unplanted Enogen seeds must be returned to your seed retailer or disposed of properly.
- Complete all necessary documentation associated with growing Enogen traited corn.
- Allow Syngenta to inspect and collect samples to verify compliance.

Sources

¹ Welchez, S.F.C., Stefenoni, H., Melgar, A., Lage, C.F.A., Räisänen, S.E., Wasson, D., Fetter, M.E., and Hristov, A.N. 2020. Effect of high-amylase corn silage on lactational performance and enteric methane emission in dairy cows. *J. Dairy Sci.* 103 (Suppl. 1): 68.

² Rebelo, L., Lee, C., Weiss, W., and Easteridge, M. 2020. Effects of Enogen feed corn silage and corn grain on nutrient digestibility, production, and enteric methane emission in lactating cows. *J. Dairy Sci.* 103 (Suppl. 1): 174

³ Enogen® value preservation stewardship guide. 2018 Syngenta® 1-19 pages.

Legal Statements

Performance may vary, from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields.

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