

New enzyme technology increases yield, decreases energy consumption

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This enzyme is said to help starch processors make significant cash savings through increasing yield and reducing energy, water and chemical use.

The solution is designed to break down starch in a way that creates more dextrose compared to conventional alpha-amylases, resulting in higher yields, and chemical, water and energy savings.

The combined benefits can enable a starch processor save up to 1 USD per metric ton of substrate.

"LpHera brings the liquefaction pH level as low as 4.5-4.8. This means you can reduce your use of pH chemicals in some instances by more than 50%," says Mr Thomas Nilsson, global launch manager for food, Novozymes.

"It also prolongs the ion exchange service cycle, which in turn enables more savings on chemicals, water and wastewater."

Running at pH 5.5, the enzymes used for conventional starch liquefaction require addition of chemicals to raise pH levels before liquefaction.

Chemicals are added again at the end of the process to ensure lower pH, necessary for the next step in starch processing, i.e., saccharification.

Liquefaction with LpHera also increase dextrose yields by 0.2 % points.

As starch customers process large amounts of starch every day, this is seen to be significant.

"Starch plants vary in size and can process from 0.2 to over 1 million ton of substrate each year," says Mr Thomas Nilsson.

"So if a plant processes 0.5 million ton of substrate, the additional yield coupled with the energy, water and chemical savings associated with LpHera means that such a plant can save up to 0.5 million dollars per year compared to today's technology."

"We see LpHera as bringing value beyond liquefaction," explains Mr Thomas Nilsson.

"Producers of high fructose syrup benefit from more efficient evaporation and water and energy savings. In crystalline dextrose production, it ensures higher crystallization yield, and when producing fermented products, it achieves higher yield and better byproducts with lower salt levels. LpHera is just the beginning of new and needed innovation for the starch industry."