Novozymes Fermax™ is an enzyme that replaces chemicals in the sugarcane ethanol production process.

COPENHAGEN, Denmark – November 8, 2016 –Â Today, Novozymes launches Fermax, an enzyme protease that prevents foam development during the sugarcane ethanol fermentation process, while delivering improved control and replacing chemicals. For an average size plant, trialing partners also experienced a cost reduction of up to 20 percent when using Fermax, as compared with use of chemicals.

“This is the first ever biological solution that prevents foam development during the fermentation process, which is a critical issue for producers,” says Daniel Cardinali, Novozymes’ Head of Sugarcane Platform and Biorefining for Latin America. “With Fermax, sugarcane ethanol producers can use sustainable enzyme technology to lower their costs, reduce the need for harsh chemicals, and increase the amount of ethanol they can produce in their fermentation tanks.”

Foam develops during the fermentation process as the yeast produces ethanol and carbon dioxide. The carbon dioxide creates foam, which can cause overflow of the fermentation tank and lead to production losses. Excessive foaming also forces plants to increase fermentation time and operate at lower capacity.

100% dispersant reduction, 70% anti-foam chemicals reduction
Ethanol producers typically use a combination of anti-foam and dispersant chemicals to reduce the formation of foam, but their performance varies according to process and feedstock conditions.

Fermax delivers predictability and consistency. It helps stabilize the fermentation process to remove the variation seen in current, chemical-based technologies.
Unlike traditional anti-foam products, Fermax does not remove the foam, but prevents it from forming in the first place. The enzyme changes the foam structure by breaking down the

stabilizing proteins to make it lighter and less dense. This enables better fermentation control, which allows producers to operate their plants more efficiently.

Fermax can completely replace, or work in combination with, traditional dispersant chemicals to boost their activity. It can also save up to 70 percent of anti-foam chemicals.

“This enzyme is a very cost-efficient solution, competitive with harsh chemicals, but without all their hidden costs, including supply issues, yeast damage, and incrustation,” explains Cardinali. “Sugarcane ethanol producers have traditionally not used enzymes. With Fermax, we start to apply the fascinating power of nature also within this growing industry to further improve production economics.”

Fermax is easily applicable across a variety of plant configurations, i.e. continuous/batch fermentation and continuous/batch yeast treatment.

Sugarcane ethanol: Quick facts

•Â Â Â Fermax is the first in a series of new Novozymes products for sugarcane ethanol, that will look to support producers become even more competitive

•Â Â Â The Brazilian sugarcane ethanol industry consists of some 380 production units, with more than 1,000 municipalities with activities related to the industry. The sector directly employs more than 950,000 people.

•Â Â Â Brazil is the world’s largest producer and exporter of sugar and second largest ethanol producer. The country has reduced CO2 emissions by more than 350 million tons since the introduction of flex-fuel vehicles that can run on any combination of ethanol and gasoline. There are more than 26 million such vehicles in Brazil.

•Â Â Â Novozymes is the leading technology provider for biofuel industries. It is the market leader in starch-based ethanol and developed the first commercial enzyme solution for cellulosic ethanol. The company currently supplies most of the cellulosic ethanol plants in place around the globe.

•Â Â Â Novozymes offers comprehensive trial programs along with extensive data analysis by experienced application specialists, where the results are thoroughly discussed with the potential partner.

About Novozymes

Novozymes is the world leader in biological solutions. Together with customers, partners and the global community, we improve industrial performance while preserving the planet’s resources and helping build better lives. As the world’s largest provider of enzyme and microbial technologies, our bioinnovation enables higher agricultural yields, low-temperature washing, energy-efficient production, renewable fuel and many other benefits that we rely on today and in the future. We call it Rethink Tomorrow. www.novozymes.com

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