Novozymes and Terranol to market advanced biofuel yeast

Partners aim to accelerate the development of C5 yeast to ensure fast commercialization of advanced biofuels made from agricultural waste, energy crops and other types of biomass.

COPENHAGEN, DENMARK – Aug. 28, 2012 – Novozymes, the world leader in bioinnovation and industrial enzymes, and Terranol, a Denmark-based biotechnology company specialized in yeast, today announced an agreement that will ensure the final optimization of the Terranol C5 yeast strain and give Novozymes the rights to register and market Terranol's C5 yeast technology. C5 yeast is an essential component in the production of cellulosic ethanol, and the partnership will allow Novozymes to speed up global rollout of Terranol's yeast to customers in the cellulosic ethanol industry. Wide availability of a high-performing and cost-efficient yeast will enable the nascent industry to fast-track the transition from today's demonstration-scale production to large-scale commercialization.

"We want to make sure there are no biotech-related hurdles to the creation of a cellulosic ethanol industry," says Poul Ruben Andersen, Vice President Bioenergy at Novozymes. "Terranol's C5 yeast is currently one of the best strains developed, and by getting it registered and marketed around the world, we can help make it available to the biofuel industry. This will provide a higher degree of certainty in the commercialization of cellulosic ethanol."

"With our combined R&D capabilities we can ensure the final optimization of the strain in order to achieve maximum economic performance for our cellulosic ethanol customers," says Claus Crone Fuglsang, Vice President R&D at Novozymes.

C5 yeast key to advanced biofuel

Advanced biofuels are approaching large-scale commercialization, but various steps in the production process can still be improved to make production cheaper and more efficient. When producing cellulosic ethanol, enzymes convert cellulose and hemicellulose in biomass such as corn stover and wheat straw to sugars, which are then fermented into ethanol. To obtain optimal yields it is important to ferment not only the easily accessible C6 sugars (glucose), but also the more difficult C5 sugars (xylose and arabinose).

"A yeast that ferments C5 sugars is essential to cost-efficient production of cellulosic ethanol," says Birgitte Rønnow, CEO of Terranol. "Our C5 yeast is among the furthest developed in the industry and by leveraging Novozymes' global marketing muscle we can speed up its commercialization."

In February, Novozymes launched Novozymes Cellic® CTec3, the best-performing enzyme on the market for production of cellulosic ethanol. The first commercial-scale cellulosic ethanol plants are scheduled to open later this year.

About Terranol

Terranol A/S is a research and development company dedicated to developing and commercializing C6/C5 fermenting yeasts, first and foremost for cellulosic ethanol production.

By applying proprietary technologies, genetically optimized yeasts have now been designed and demonstrated to fulfill the requirements in industrial settings with respect to robustness, performance and productivity, enabling increased yields of ethanol production.

Terranol A/S is based at the Technical University of Denmark and was formed in 2007 by three founders experienced within industrial biotechnology. The work is supported by Danish Energy Authority´s Programme for Energy Technology Development and Demonstration (EUDP). For more information, please visit www.terranol.com

About Novozymes
Novozymes is the world leader in bioinnovation. Together with customers across a broad array of industries we create tomorrow's industrial biosolutions, improving our customers' business and the use of our planet's resources.

With over 700 products used in 130 countries, Novozymes' bioinnovations improve industrial performance and safeguard the world's resources by offering superior and sustainable solutions for tomorrow's ever-changing marketplace. Read more at www.novozymes.com