



BEYOND ENZYMES

A NATURAL ALTERNATIVE TO FERTILIZERS

Fertilizers are becoming more and more expensive, but farmers may not need them at all if they can use natural microorganisms to achieve the same effect. Novozymes Biologicals now supplies different strains of microorganisms known as "inoculants" to farmers. These microbial products stimulate the growth of certain crops by enhancing their absorption of nitrogen and phosphorus.

Novozymes Biologicals expanded into this area when Philom Bios in Canada was acquired in late 2007. The company was founded in 1980 and develops, manufactures, and sells proprietary microbial inoculants to the agricultural industry.

This new acquisition opens up the agricultural market for Novozymes BioBusiness and will be the center of Novozymes Biologicals' future bioagriculture business. The acquired company is strong in research and will now benefit from access to Novozymes' resources, giving greater opportunities for growth, and a larger network for entering into the US and international agriculture markets.

The microorganism area is not new for Novozymes. Novozymes Biologicals in Salem, Virginia, USA, is already the world's leading supplier of microorganisms for plant care, wastewater treatment, institutional and industrial cleaning,

aquaculture, and other areas. Like Novozymes Biologicals in Canada, their products are based on naturally occurring microorganisms that offer effective biological solutions for a variety of applications.



Strains of microorganisms can make phosphorus and nitrogen in the soil more available to plants.

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HYALURONIC ACID – A NATURAL PART OF OUR BODY



The solution in which contact lenses are stored often contains hyaluronic acid.

mer hyaluronic acid (HA), also known as sodium hyaluronate. This molecule has the special ability to bind water and is very compatible with the body's cells. HA is found naturally in a number of places in our bodies, so our bodies are well accustomed to the molecule.

This makes hyaluronic acid ideal for biomedical purposes. As examples, Novozymes is currently collaborating with partners to explore the product's use in the delivery of anti-cancer drugs, and in tissue engineering applications such as in skin engineering, cartilage repair, and bone regeneration. It will take several years for these developments to reach the market, but in the meantime sales of hyaluronic acid under the brand name HyaCare®

have taken off in eye care and other topical application areas.

Novozymes' HyaCare is made from the GRAS (Generally Recognized As Safe) bacterium strain *Bacillus subtilis*, whereas other producers still extract hyaluronic acid from rooster combs or use *Streptococcus* bacteria to ferment hyaluronic acid.

Novozymes' HyaCare has unique properties that make it ideal for use as a packaging solution that surrounds soft contact lenses. Hyaluronic acid lubricates, moisturizes, and rehydrates. It can be thought of as a substitute for tears. In fact, hyaluronic acid can be used anywhere in the body where a liquid is required to fill out a cavity or where moisture must be retained. ■

The BioBusiness division of Novozymes is a supplier of the biopoly-

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