

GPEC 2006 Paper Abstract #17B

Title: Metabolix's Natural Plastics: Property Space and Processing Capabilities

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ABSTRACT

The vision of Metabolix is a sustainable future through biotechnology for plastics, energy and fuels. Founded in 1992, Metabolix, Inc. uses microorganisms to produce natural plastics via fermentation. The company is also working on producing its innovative Natural Plastics directly in non-food crop plants. Metabolix formed a strategic collaboration in November 2004 with Archer Daniels Midland to produce its Natural Plastics commercially via fermentation. The company also has collaborative support from British Petroleum to progress the plant research. In June of 2005, Metabolix received the Presidential Green Chemistry Challenge Award for its development of Natural Plastics.

The key to all new polymers is that they need to offer differentiation from the incumbent materials. Most other biobased or biodegradable polymers are difficult to process, often resulting in higher conversion costs or reduced performance against petroleum based resins. Designed to process on existing equipment, these new biobased, sustainable materials are high performing and versatile, making them appropriate for applications such as injection molded and extruded products, paper coatings, thermoformed items, and film. Metabolix Natural Plastics have good water resistance but will readily biodegrade in hot and cold composting, marine and fresh water, soil and anaerobic environments.

This presentation will review the recent development in material properties and conversion techniques.