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Metabolix Wins Grant to Explore PHA Bioplastics for Packaging Film

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Cambridge, Mass., March 2 /PRNewswire/ -- Biodegradable packaging film and other biodegradable disposable packaging products will advance a step closer to commercial reality as the U.S. Army Natick Soldier Center and Metabolix, Inc. of Cambridge, MA team up to work on PHA (polyhydroxyalkanoate) food packaging film for the Navy. The collaboration is supported by the U.S. Navy's Waste Removal Afloat Protects the Sea (WRAPS) Program.

"Metabolix PHAs are excellent candidates for the Navy's research in film applications because this new material combines both barrier properties and biodegradability in the marine environment," says Jo Ann Ratto of the Natick Soldier Center. "Successful completion of this project will lead to further collaboration with Metabolix, as well as promising applications for military use."

Recyclable and/or biodegradable food packaging for the military is important for addressing significant waste problems. According to the Department of Defense Combat Feeding Directorate at the Natick Soldier Center, America's military produces more than 14,000 tons of packaging garbage from the nearly 47 million operational rations it consumes each year. The federal government is committed to moving away from traditional petrochemical plastic items in favor of biobased products.

The joint research focuses on melt-processing PHA films used to enclose many of the fresh foods found in grocery stores. Metabolix will work with the Natick Soldier Center to develop compositions suitable for extrusion processing; determine mechanical, thermal, and barrier properties of these new materials; and conduct biodegradation tests on the films. Investigations may also lead to exploring nanocomposites and co-extruded multilaminate systems incorporating PHAs as potential food packaging film for the Navy as well as the Army.

The federal government currently procures more than half a billion single-use plastic items each year, and switching to renewable PHAs will reduce the detrimental impact of these persistent plastics on the environment. Other candidates for conversion to renewable PHA materials include disposable items such as cutlery, paper cups, and plates.

Metabolix's PHAs are a broad and versatile family of plastics ranging in properties from rigid to highly elastic, making them suitable for film, fiber, adhesives, coatings, and molded goods. Although PHAs are stable to hot liquids such as coffee or tea, once their use is completed, they will biodegrade in fresh and marine water, soil and composting environments, and even under anaerobic conditions making them ideal candidates for this application.

Founded in 1992, Metabolix, Inc. uses sophisticated biotechnology to produce environmentally friendly performance plastics and specialty chemicals from renewable resources. Metabolix is the world leader in applying the advanced tools of metabolic engineering and molecular biology to efficiently produce PHA bioplastics in microbial systems and directly in non-food plant crops. The company is currently commercializing fermentation-based PHAs in applications where they provide unique performance benefits.

For more information on Metabolix, visit www.metabolix.com.