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CIRAS USDA BioPreferred℠ RESEARCH REPORT ANNOUNCEMENT

Mechanical Characterization of Commercial Biodegradable Plastic Products for Market Viability

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Currently many governments are regulating greenhouse emissions by penalizing polluters and trying to minimize greenhouse gas emissions by implementing carbon credits. In partial response, institutions and corporations in the U.S. are developing biodegradable plastics based on naturally occurring polymers and those that can be derived from renewable feed stocks.

- The characterization of material properties of selective commercially-available, biodegradable polymer, PLA (2) were detailed.
- Material properties included: tensile strength, elongation of material at failure, impact resistance, tear resistance, glass transition temperature, melt temperature, crystallinity temperature and material composition.
- In response to the results reported by Cortec Corporation ("Evaluating/Comparing Mechanical Properties of Compostable Films", White Bear Lake, MN; 01/23/2006).
- Comparison of material before and after one year of exposure to normal environmental conditions.
- Followed ASTM standardized testing.
- Differential Scanning Calorimetry (DSC) and Thermogravimetric Analysis (TGA) of product.