PEYDAN MCVICKER, MATTHEW SCANLON, & KRISTY HENSON. Natural Science Department, Fairmont State University, Fairmont, WV. The Development and Composting of Cellulose-Based Bioplastic Derived from Hemp Fibers

The consumption and disposal of plastic products in landfills is drastically affecting our planet today. Though many of these plastic items can be recycled, most them are not. A demand for more sustainable products is imminent as the global rates of climate change continue to increase. An analysis of alternatives to plastic products indicates that a better option is the manufacturing and use of the cellulose-rich hemp plastic to increase rates of biodegradability. In this study, cellulose from locally grown hemp is extracted via acid hydrolysis and turned into bio-plastic sheets. The resulting sheets are composted and monitored to analyze and compare the rates of biodegradability compared to that of normal, everyday plastic products. Preliminary results indicate that the bioplastic is compostable and a better alternative to petroleum-based plastic products. *This research was made possible by NASA West Virginia Space Grant Consortium, Training Grant #NNX15AI01H*