PLASTICS LAND TO SEA

Regenerated cellulose fibers: Are they the future?

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Regenerated cellulose is a man-made fiber produced by breaking down natural cellulose from wood pulp in organic solvents and extruding it to obtain fibers.[1] They are a versatile class of materials known for their biodegradability, fineness as textiles, and potential to reduce environmental harms caused by synthetic fiber production.[1] Generally, the major classes of these fibers are viscose, modal, and lyocell, all of which are forms of rayon and are generally more absorbent than cotton.[2] Lyocell, known under its trade name Tencel™, is a material under special consideration here for the recyclability of the solvent in its formation. As it is largely produced by the Austrian manufacturer Lenzing, this project seeks to answer whether a circular economy in the U.S. could implement its production more widely. To move toward the recycling and reuse of waste rather than its disposal as in the case of a linear economy, a major aim of this project is to see if lyocell and regenerated cellulose fibers in general can be scaled up more widely in the U.S., recycled more, and be a frontrunning candidate to replace synthetic fibers in the long term.

For HPR224G "From Mars to South County: Creating a Circular Textiles Economy in Rhode Island" (TMD & Honors Program: Dr. Karl Aspelund, Associate Professor, Department Chair, Textiles, Fashion Merchandising and Design.)

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