Eco-Friendly Fabric: Use of Algae and Seagrass in Paper Production

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The purpose of this study was to evaluate algae and seagrass as potential alternatives to wood in paper production, considering its high cellulose content. This topic was chosen as an alternative solution to reduce deforestation, since over 40% of the total global industrial wood harvest is used to make paper (DoSign, 2021). Also, to reduce the overpopulation and decomposition of sargassum and seagrass present in beaches all over the Caribbean, which disrupts communities and touristic economy. A species of brown algae, Sargassum sp., and a species of dried and beached seagrass, Syringodium filiforme, were selected for testing purposes. As part of the experiment, several methods and variables were tested. These were combined to produce paper with similar texture, consistency, and durability, to that of recycled paper used as the control variable. After six (6) weeks of experimentation, we were able to produce a sheet of paper using Syringodium filiforme. This sample resulted with texture, consistency, durability and color resembling paper products. Additional studies and improved equipment are recommended to further optimize the process and use algae and seagrass as viable alternatives to wood in the paper production industry, while reducing deforestation and cleaning the environment. Also, it has the potential to expand in other areas such as the medical, construction and textiles industries.

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