Development of Value-Added Product Cellulose Fibers Obtained From Agro Industrial Waste of Peanut Shells

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This experiment consists of the waste of peanut shells being used to retain water and preserve cellulose fibers. The experiment aims to see if peanut shells can help retain the water in the cellulose fibers for biomass waste and economic development. In my experimentation, I used cellulose nano-fibers and nitric acid with distilled water and added oven-dried cane powder. Then, the product is washed, filtered, and stored in refrigeration. Using the Reactive Cellulose and taking it through a process called Periodate Oxidation. Once finished, the Periodate Oxidation and the Reactive Cellulose process with Chlorite Oxidation. The method of using carboxymethylated chitosan, dissolving sodium hydroxide in propanol, and adding the weight of chitosan will allow the hydrogel samples to swell. Three samples of the hydrogel cellulose fibers were used to see which is more beneficial through a water retention value (WRV) system test. We go through the process of weighing wet hydrogel and then drying it. Then, the damp and dry hydrogel were measured and compared through the WRV process. Examining cells through a microscope and taking photographs of the cells cross-linking. The Commercial Hydrogel Weight increases when it is left alone to swell depending on the percentage of peanut shell waste inside of the hydrogel. In conclusion, hydrogel cellulose fibers can swell, and peanut shell waste can become useful for other needs that benefit the agricultural business. Value-Added Cellulose Fibers are Effective in Agro-Industrial Business and benefit the hydrogel production process. Agro-industrial companies can now use peanut waste to preserve and retain water from other products.

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