Banana Peel: The Water Cleaner

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Having in mind one of the most worrying issues of todays and future society, water polution, we intend to use banana peel in the cleaning of contaminated waters with both cationic dyes and heavy metals. In order to start the experiments there was a need to prepare the peels starting by collecting them, then drying and finally grinding. We obtained a small granulation powder, ideal for the adsorption process. For our first experiments testing the banana peels' adsorption capacity we used blue methylene making it pass through a portion of powder and then resorted to a spectrophotometer to obtain the results. As for nickel, an exemple of heavy metal, we used gravimetry by chemical precipitation to test its adsorption. The results were obtained by calculating the difference between the initial and the final mass. Using the spectrophotometer we obtained a graphic with three spectra corresponding to blue methylene, distilled water after passing through the banana peel and blue methylene after this same process. As for nickel we made two tests, one varying the time of adsorption, between 30 and 45 minutes, and the other varying the mass of banana peel being the highest reduction in both cases 75%. Finally, we concluded that our idea is plausible of being applied in the industry market.

Awards Won: