Removal of Lignin From Varied Biopolymers

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This study was performed to investigate the efficiency of different methods to extract lignin, which is used for many different purposes in industry. Six types of wood were used. All types of wood were soaked in a solution of 25% sodium hydroxide, 12.5% sodium thiosulfate, and 62.5% water, which was used in all methods. The methods used were one, soaking the wood in the solution for one week; two, boiling the wood in the solution for seven hours; and three, soaking the wood in the solution for one week and boiling it for seven hours. All methods were finished by rinsing the wood in purified water. In the testing, the lignin removal was most effective on balsa. Other wood types tested were cottonwood, aspen, oak, cedar, and white pine. Overall, all types of wood had lignin removed within acceptable ranges, although treatments were least effective on white pine. The most effective method for lignin removal was method three, which removed a larger percentage of lignin in most types of wood than the other methods. Other methods were effective, with method two removing similar amounts of lignin as method three; however, method one was less effective in removing lignin than the other methods, as the smallest percentage of difference between method one and method two was 8.7%, a significant percentage in this experiment, as wood is only comprised of up to 35% lignin.

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