

Cellulose Extraction from Pomelo Peel: Synthesis of Carboxymethyl Cellulose

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Abstract : The cellulose was extracted from pomelo peel and an etherification reaction used for converting cellulose to carboxymethyl cellulose (CMC). The pomelo peel was refluxed with 0.5 M HCl and 1 M NaOH solution at 90°C for 1 h and 2 h, respectively. The cellulose was bleached with calcium hypochlorite and used as precursor. The precursor was soaked in mixed solution between isopropyl alcohol and 40%w/v NaOH for 12 h. After that, chloroacetic acid was added and reacted at 55°C for 6 h. The optimum condition was 5 g of cellulose: 0.25 mole of NaOH : 0.07 mole of ClCH₂COOH with 78.00% of yield. Moreover, the product had 0.54 of degree of substitution (DS).

Keywords : pomelo peel, carboxymethyl cellulose, bioplastic, extraction

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