Penggunaan Xilanase pada pemutihan Dissolving pulp Accacia crassicarpa

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Abstrak

The use of xylanase in pulp bleaching process is intended to reduce chemicals consumption in pulp industry that still using chlorine compounds (chlorine dioxide), so the bleaching stage needs to be modified without reducing the quality of dissolving pulp. Dissolving pulp was produced from six-year-old Acacia crassicarpa as raw material by the Prehydrolysis-Kraft process, then the pulp was bleached with the ECF (elemental chlorine free) process using xylanase (X) and oxygen (O) as comparison at the early stage of bleaching. The sequences of process include X/ODEDED (xylanase or oxygen; chlorine dioxide; extraction-1; chlorine dioxide-1; extraction-2; chlorine dioxide -2). Results showed that the dissolving pulp with active alkali of 22%, sulphidity of 30%, the temperature of 165o C, and the ratio of 1:4 is the optimal condition. Cellulose content, viscosity and brightness were above 94%, 6.2 cP and 88% ISO, respectively. The dissolving pulp produced with the application of xylanase has better quality than the oxygen one, and meets the requirement according to Indonesia National Standard (SNI 0938:2010, pulp rayon).