

Reinforced Oxidative Extraction Stage With Higher H₂O₂ Dosage- A Mill Experience To Reduce The Bleaching Chemical Cost And Chlorinated Compound For Cleaner Environment.

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ABSTRACT

In order to reduce the bleaching cost and problem of organochlorine compound during bleaching of pulp, it has become necessary to reduce the use of chlorine dioxide in existing bleaching sequence without affecting the pulp quality. This study examines the effect of higher dosage of hydrogen peroxide in oxidative extraction (Eop) stage of four stage C/DEopD₁D₂ bleaching sequence. The objective was to determine the impact of increased hydrogen peroxide dosage in Eop stage on chlorine dioxide reduction, final pulp brightness, brightness reversion and effect on effluent quality. Lab results showed that hydrogen peroxide found to be a promising bleaching chemical, increase in peroxide dosage from 0.5% to 1.0% (100% H₂O₂) in Eop stage reduced the usage of chlorine dioxide in subsequent D₁ & D₂ stage by approximately 4.0kg/MT with improved final pulp brightness and whiteness by 0.4 and 0.6 points respectively and reduced effluent color and AOX by approximately 15% and 6% respectively. However, COD and BOD of effluent were more or less similar. Based on the lab findings, a plant trial was taken by increasing the hydrogen peroxide dosage from 0.6% to 0.9% (100% H₂O₂). Similar observations were found, reduction in of ClO₂ from 14.5kg/MT to 12.0kg/MT with final pulp brightness and whiteness increase by 0.4 & 0.6 point respectively. It also helped in reducing effluent color about 19%.

Key Words: Oxidative Extraction, H₂O₂ bleaching, AOX, Effluent color