



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Oxygen Delignification of Wheat Straw Organosolv Pulp

Hüseyin KIRCI, Mustafa USTA Karadeniz Teknik Üniversitesi, Orman Fakültesi, Orman Endüstri Mühendisliği Bölümü, Trabzon - TÜRKİYE Mehmet AKGÜL Sütçüimam Üniversitesi, Orman Fakültesi, Orman Endüstri Mühendisliği Bölümü, Kahramanmaraş-TÜRKİYE Abstract : In this study, in order to determine optimum conditions for peroxide reinforced oxygen delignification of wheat straw organosolv pulps, five experiments were carried out changing the alkali ratio, peroxide charge and reaction time. After the statistical evaluations of the data obtained, optimum delignification conditions were found to be as follows: NaOH ratio 6%, H₂O₂ ratio 2.5%, reaction temperature 80 °C, reaction time 60 min., oxygen pressure 10 kg/cm², concentration 16%. Thus; yield, viscosity and tear index of wheat straw organosolv pulps delignified with oxygen added peroxide decreased by 18%, 20% and 18% respectively. In addition, residual lignin content of delignified pulp decreased by 60% and brightness, breaking length and burst index of the pulp were found to be respectively 65%, 10% and 52% higher than those of non-delignified wheat straw organosolv pulps. Consequently, it is concluded that oxygen delignified organosolv pulp has similar strength properties except brightness compared with wheat straw alkaline (soda, soda-oxygen and kraft) pulps.

Key Words: Oxygen Delignification, Wheat Straw, Bleaching, Organosolv Pulping

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