FACTORY OF PULP FROM KENAF STEM WITH KRAFT PROCESS USE OF BLEACHING THE ENZYME LACCASE

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ABSTRACT

The factory of pulp is founded to fulfill requirement of pulp (raw material paper), in this moment increasing as according to industrial growth of paper in Indonesia. The factory of pulp from kenaf stem with kraft process have product capacities 63380 kg pulp/day. The factory of pulp is located in Kutai, Kalimantan Timur.

Making process of pulp from kenaf stem consists of five stages: pre-treatment stage, cooking, washing, bleaching, and drying. The stage of pre-treatment of kenaf stem peeled is hereinafter brought to go to the Disk Chipper to be cutted ±2 cm, then the fiber is transported to go to the last Chip Bin enter the Digester. The cooking stage, chip is cooked with the condensation of cooker NaOH, Na₂S, dan Na₂CO₃ 10% with the ripening temperature 170°C and ripening time 2 clock. The comparison sum up the raw material of kenaf stem with the cooker condensation = 1 : 5. After ripening finish, the result of this section is poured into in Blow Tank. After from Blow Tank go to the Knotter. The washing stage, cake is washed from Washer I poured into Washer II by fresh water which is have temperature 50°C. Hereinafter cake conduct into Storage Tank. The bleaching stage, condensation pumped to bleaching to whiten the fibre pulp. The drying stage, dryer of sheet pulp have the rate irrigate 8%.

The plant is planned to operate semi-continuously for 330 days / year, 24 hours / day, thus requiring wood of kenaf stem 120000 kg / day with supporters of raw materials namely NaOH, Na₂S, dan Na₂CO₃. Water sanitation utility requirement is for 40 m³/day, boiler makeup water for 3772.21 m³/day, 7869.99 m³/day of process water.

Keyword: pulp, kenaf stem, kraft process, NaOH, enzyme laccase