

Abstract

Durio zibethinus or Durian is known as the king of fruits. The fruit has several distinct characteristics of its strong smell, creamy soft texture and rich sweet taste. In Thai fresh fruit markets, there are many varieties of durian sold from Chanee, Monthong, Kanyao to Kratumthong from which each variety possesses its own unique characteristics.

One distinct characteristic of durian that differentiates it from other fruit is its thick thorny rind, making it is difficult to consume durian. So it is common for a merchant to peel durian to remove its fruits and pack before selling. During durian season, many rinds are discarded as garbage and subsequently burnt or buried which will eventually cause more problem as air pollution or water pollution of the rotten discharge.

This project proposes to study a possibility of producing pulp from the durian rinds which contained approximately 65 -80% of total weight by using chemical pulping and bleaching process. In the pulping process, durian rind pulp was extracted with 10% NaOH solution to give an appropriate pulp. In contrast, at 5% NaOH solution could not degrade the pulps from thorns and other components of the rind. For high concentration of NaOH solution, 15% could produce the same result as those from 10% solution. For the bleaching process, the most efficient process was integration between 2% Sodium Hypochlorite and heat to give an appropriate bleached pulp and reduce the bleaching time. After producing the bleached paper from 100% durian rind pulp, the paper was easily torn so Po krasa Pulp was brought to incorporate in the durian rind pulp. By measuring the tensile strength of the incorporated paper, it was found that incorporating 10% and 25% Po krasa could improve the tensile strength of the paper more than 100%, 0.72 g/m² and 1.23 g/m².