

THESIS TITLE : A COMPARISON STUDY ON WATER QUALITY AND SEDIMENT DUE
TO RETTING PROCESS OF MECHANICALLY RIBBONED KENAF AND
TRADITIONAL PROCESS

AUTHOR : MR. MONSAK VICHATHEP

THESIS ADVISORY COMMITTEE

Winit Chinsuwan

Chairman

(Associate Professor Winit Chinsuwan, Ph.D.)

S. Chusilp

(Assistant Professor Somnuk Chusilp)

Vichian Plermkamon

(Vichian Plermkamon, Ph.D.)

ABSTRACT

The objective of this study is to compare water quality and sediment due to retting process of kenaf with and without ribboning. Retting ratio (ratio between weight of kenaf and weight of retting water) of 1:20, 1:40, 1:60 and 1:80 are used for Local and Nonsoong 2 varieties. The results are as follows:-

- 1) Retting of the kenaf after ribboning by the single drum kenaf ribboner results in lower Biochemical Oxygen Demand (BOD) for retted water than the traditional practice for all retting ratio. The BOD is decreased as the retting ratio increases. For the retting

ratio of 1:60 to 1:80, BOD is 340 mg/l for Local variety after ribboning and 285 mg/l for Nonsoong 2 variety after ribboning compared with 835 mg/l and 705 mg/l for those without ribboning respectively.

2) The acidity level of retted water is not affected by retting ratio. However, the level is slightly lower for retting kenaf ribbon.

3) Retted water of both retting processes has the same level of odor.

4) Both processes result in the same amount of sediment of 20.16 kg/ton of kenaf (dry weight). However, if all woody central cores are not removed from retting pond the sediment due to the traditional process is 351.88 kg/ton, while the sediment due to the ribboned kenaf is only 20.16 kg/ton.