

KENAF PLANT AS THE SOURCE OF PAPER PULP

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ABSTRACT

This paper is an experimental project where it was done to determine whether kenaf plant is actually can be used as a source of paper pulp or not. A few tests had been to discover kenaf is suitable or not. A calculation of kappa number is used to determine the yield quality by titration method. The test of the yield strength after milling the pulp were divided into three tests, tensile, tear and burst. The quality of the pulp is by titration method of sodium thiosulphate into the sample where kappa number will show the quality of the pulp or lignin. The kappa number for the 21% NaOH concentration is 13.5 at 90 minutes of cooking time, 16.7 at 180 minutes and 19.9 at 300 minutes. The suitable percentage of active alkali concentration for the pulping process is 21% where 26% is too high which it will disintegrate the cellulosic matter inside the kenaf because cellulose is important for the strength of the pulp and paper. For 21% active alkali concentration, the tensile index is 78.01 N.m²/g, burst index is 4.85 kPa.m²/g and tear index is 28.80 mN.m²/g.

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CHAPTER 1

INTRODUCTION

1.1 RESEARCH BACKGROUND

Trees have been used as the raw materials to make paper since centuries ago. Many types of trees have been used for the paper industry; for softwoods are spruce, pine, fir, larch and hemlock, for hardwoods are eucalyptus, popular, aspen and birch. All the paper industry's people keep on researching for trees that can be cut down and make it as the source of paper pulp. That is why deforestation keeps on increasing all over the world including Malaysia where in 2006, 76.3% of the land area was under forest but in 2009, only 62% the green in Malaysia. For three years, for about 14% of land area has been cut off and the reforestation process takes years to grow. New alternatives need to be done in order to increase the forest in Malaysia and makes it greener again.