

**PENGARUH WAKTU PEMASAKAN PADA DUA CARA PENGOLAHAN PULP TERHADAP RENDEMEN DAN SIFAT FISIK PULP DAUN NANAS (*Ananas comosus* (L) Merr.)**

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**INTISARI**

Meningkatnya permintaan bahan baku industri pulp telah memunculkan suatu pemikiran untuk mencari alternatif bahan baku. Daun nanas yang tersedia dari perlakuan pemangkasan di perkebunan nanas telah diproses menjadi pulp dengan menggunakan dua metode pulping, yaitu mekanik-soda dan soda-mekanik.

Daun nanas dari Nglegok, Blitar, Jawa Timur, dipotong menjadi chip dengan ukuran panjang 5 cm dan lebar mengikuti lebar daun. Pada proses mekanik-soda, chip terlebih dahulu diberi perlakuan mekanis, kemudian dikering udarakan. Chip yang telah kering udara dimasak dalam digester-autoclave pada suhu maksimum 170<sup>0</sup>C dan alkali aktif 10%. Pada proses soda-mekanik, chip langsung dikering udarakan, kemudian dimasak dalam digester-autoclave pada suhu maksimum 170<sup>0</sup>C dan alkali aktif 10%, setelah itu diikuti dengan perlakuan mekanis. Data yang diperoleh dianalisis menggunakan percobaan acak lengkap (*Completely Randomized Design*) yang disusun secara faktorial 2x3 dengan tiga ulangan. Faktor pertama adalah cara pengolahan, yang terdiri dari cara mekanik-soda dan cara soda-mekanik. Faktor kedua adalah faktor waktu pemasakan yang terdiri dari 30, 60, dan 90 menit setelah mencapai suhu maksimum.

Hasil penelitian menunjukkan bahwa daun nanas yang diproses dengan cara mekanik-soda memiliki hasil rendemen yang lebih tinggi dibandingkan dengan cara soda-mekanik. Dari hasil penelitian tidak ditemukan adanya interaksi antara cara pengolahan dan waktu pemasakan. Rendemen yang diperoleh berkisar antara 20,07 - 35,09%; bilangan Kappa 1,34 - 2,8; indeks tarik 9,81 - 13,40 Nm/g; indeks jebol 0,57 - 0,88 kPa.m<sup>2</sup>/g; indeks sobek 3,41 - 4,91 mN.m<sup>2</sup>/g.

**Kata kunci:** daun nanas, waktu pemasakan, mekanik-soda, soda-mekanik, NaOH.

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**EFFECT OF COOKING TIME ON TWO METHODS OF PULPING  
PROCESS TO PULP YIELD AND PHYSICAL PROPERTIES OF  
PINEAPPLE LEAF (*Ananas comosus* (L) Merr.)**

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**ABSTRACT**

Anticipating the increasing needs of pulp and paper raw materials in Indonesia, alternative materials have been searched. Pineapple leaves, what are left from treatment cutting are available in large amount. An effort has been done to increase the use of the waste as an alternative source of pulp and paper raw materials. Study of processing pineapple leaf into pulp has been done using two chemi-chemical process, mechanical-soda and soda-mechanical.

Pineapple leaves from Nglegok, Blitar, East Java, were cut first into chips of 5 cm length and as wide as the leaf's width. For mechanical-soda process, chips were given mechanical treatment then they were air-dried. Air-dried chips were cooked by active alkalie 10% using digester-autoclave on maximum temperature 170<sup>0</sup>C. For soda-mechanical process, chips were air-dried instantly, then cooked by active alkalie 10% using digester-autoclave on maximum temperature 170<sup>0</sup>C, followed by mechanical treatment. Data obtained were analized using Completely Randomized Design with factorial experience 2 x 3. First factor was processing method, including mechanical-soda and soda-mechanical method. Second factor was cooking time including 30, 60, and 90 minutes after reaching maximum temperature.

The result of this study showed that pineapple leaves processed with mechanical-soda method could be good alternative for pulp raw material. There was not any interaction beetwen processing method and cooking time. The average of yield were 20,07 - 35,09%; Kappa number 1,34 - 2,8; tensile strength 9,81 - 13,40 Nm/g; bursting strength 0,57 – 0,88 kPa m<sup>2</sup>/g; and tear strength 3,41 – 4,91 mN.m<sup>2</sup>/g.

**Keywords:** pineapple leaf, cooking time, mechanical-soda, soda-mechanical, chemi-mechanical pulp, NaOH.

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