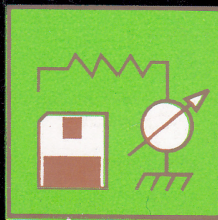
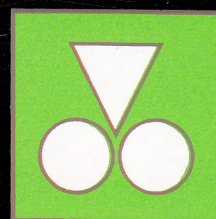
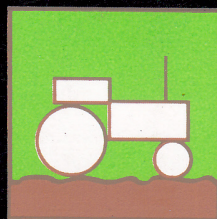
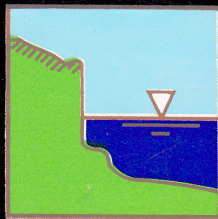


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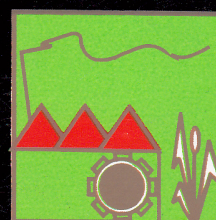
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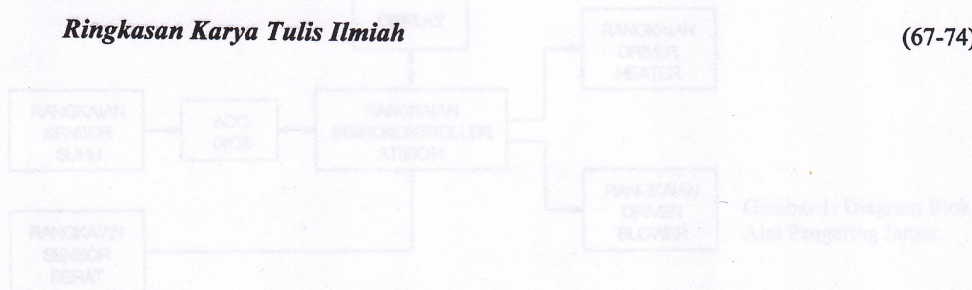
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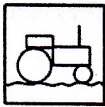
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## Desain Alat Evaporator Nira Kelapa untuk proses pembuatan Gula Kelapa

(Design of palm sugar evaporator for palm sugar processing)

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### ABSTRACT

*In Indonesia, farmers or small entrepreneur in rural area generally does production processes of coconut palm sugar. Processing of coconut palm sugar in big scale is hardly developed. Efforts to improve the production quality of coconut palm sugar are very important to be done. Aspect of Equipments for producing coconut palm sugar is the main priority in this research. In general, the target of this research is to obtain and get the appropriate device for evaporating the sap of the inflorescence of coconut (naira) along the processing of coconut palm sugar. The design and assembling of evaporator for facilitating the process of coconut palm sugar is the main purpose in this research. Evaporator is designed with the cylinder shape that is completed with agitator that periodically rotated during process of coconut palm sugar. Components of its equipments consisted of: evaporator tube, prime mover motor and pressure stove. At functional examination, the evaporator is able to work as the function on the design of evaporator that was planned. Results of elementary test indicate that appliance is able to be powered. As a means of coconut palm sugar processor, the new design of evaporator experienced the improvement of 10%. Interviewing and discussing with students who were involved in the operation of this equipment conduct Ergonomy test. The results test gave the information that this appliance is felt more peaceful and balmy than traditional appliance. At Cost analysis, net earning which this can obtain means still too low if production effort of coconut palm sugar as the main source of the artisans' income. Therefore, it needs to study furthermore regarding the existence in order to complete assembling of coconut palm sugar evaporator. Besides, it needs to modify the evaporator, so it can improve the production efficiency performance as well as depress the production cost.*

*Keywords: Coconut palm sugar, home industry, evaporator, design, assembly, analysis, performance.*

### PENDAHULUAN

Salah satu produk pohon kelapa adalah gula kelapa (Agustono, 1990). Gula kelapa adalah gula yang diproduksi dengan proses distilasi nira kelapa (*Cocos nucifera* L).

Pengolahan dengan pemanasan menyebabkan gula kelapa mempunyai warna yang bervariasi mulai kuning hingga coklat tua, tetapi pada umumnya berwarna coklat kemerahan. Warna gula kelapa terbentuk karena adanya reaksi pencoklatan (*browning*) selama pengolahan. Sifat lunak gula kelapa dipengaruhi oleh kadar air, kadar lemak serta kadar dan jenis zat gula yang terkandung di dalamnya (Suryaningrat, 1997). Kualitas gula kelapa masih sangat membutuhkan perhatian khusus (Agustono, 1990).

Di samping itu ke higienisan pada proses pembuatan gula kelapa dengan cara tradisional ini masih belum terjamin, di mana lingkungan sekitar tempat pemasakan serta asap yang timbul dari hasil penguapan nira sangat berpengaruh selama proses pemasakan.

Berdasarkan permasalahan yang ada, maka perlu dilakukan upaya-upaya peningkatan mutu produksi gula kelapa. Aspek peralatan produksi sebagai penunjang utama dalam proses pembuatan gula kelapa merupakan prioritas utama dalam penelitian ini. Tujuan penelitian ini

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