

ABSTRACT

STUDY ON THE CHEMICAL AND SENSORY QUALITY OF LIQUID SUGAR BASED ON THE POSITION OF OLD OIL PALM TRUNK SECTION

By

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Old oil palm trunks contain sap with a total sugar content of 17.60% that can be utilized for the production of liquid sugar. The total sugar content in the old oil palm trunks varies at different positions along the trunk, which can affect the characteristics of the resulting liquid sugar. This study aims to determine the influence of the trunk's position and identify the section that yields liquid sugar with the best chemical and sensory properties. The research was designed using a non-factorial Completely Randomized Design (CRD) with five replications. The treatment consisted of three different trunk positions: 2-3, 3-4, and 4-5 meters from the ground. The trunks were pressed to extract the sap based on the treatment positions. The extracted sap was then evaporated using a stove and an open pan until the total dissolved solids reached 70°Brix. The results showed that the trunk position significantly affected the moisture content, total phenol, color, and taste of liquid sugar. The best chemical and sensory properties were found in the liquid sugar produced from the section of the trunk 4-5 meters above the ground.

The best liquid sugar had characteristic of 35.05% moisture content, 3.36% ash content, 40.95% reducing sugars, 35.09 mg GAE/100g total phenol, a brown color, a sweet taste, a slightly distinctive palm aroma, no bitter taste, and was overall preferred by the panelists.

Keywords: old oil palm trunk, liquid sugar, trunk position

ABSTRAK

KAJIAN MUTU KIMIA DAN SENSORI GULA CAIR BERDASAR POSISI BAGIAN BATANG KELAPA SAWIT TUA

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Limbah batang kelapa sawit tua mengandung nira dengan total gula sebesar 17,60% yang dapat dimanfaatkan untuk pembuatan gula cair. Kandungan total gula dalam batang kelapa sawit tua berbeda-beda pada setiap posisi bagian batangnya sehingga dapat berpengaruh terhadap karakteristik gula cair yang dihasilkan. Penelitian ini bertujuan untuk mengetahui pengaruh dan memperoleh posisi bagian batang kelapa sawit tua yang menghasilkan gula cair dengan mutu kimia dan sensori terbaik. Penelitian ini disusun secara non-faktorial dalam Rancangan Acak Lengkap (RAL) dengan 5 kali ulangan. Perlakuan berupa 3 taraf posisi bagian batang kelapa sawit tua yaitu 2-3, 3-4, dan 4-5 meter dari tanah. Batang kelapa sawit tua berdasarkan perlakuan dilakukan pengepresan untuk diperoleh nira. Nira yang dihasilkan kemudian dilakukan penguapan menggunakan kompor dan panci terbuka hingga total padatan terlarut mencapai 70°Brix. Hasil Penelitian menunjukkan posisi bagian batang kelapa sawit tua berpengaruh terhadap kadar air, total fenol, warna dan rasa gula cair. Perlakuan yang menghasilkan gula cair dengan mutu kimia dan sensori terbaik diperoleh pada gula cair dari bagian batang kelapa sawit tua 4-5 meter dari tanah. Gula cair yang terbaik mempunyai karakteristik kadar air 35,05%, kadar abu 3,36%, gula pereduksi 40,95%, total fenol 35,09 mg GAE/100g, warna coklat, rasa manis, aroma sedikit khas sawit, tidak memiliki rasa pahit dan penerimaan keseluruhan disukai oleh panelis.

Kata kunci: batang kelapa sawit tua, gula cair, dan posisi bagian batang