

# **ABSTRACT**

## **DETERMINATION OF OPTIMUM TEMPERATURE AND ENERGY USAGE IN MAKING WATERMELON CRACKER USING *VACUUM FRYER***

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Watermelon is a fruit that is abundantly produced in Indonesia. Various product appearances produced from this commodity promises good markets. Diversification of products is an effort that is possible in the handling of the abundance of the harvest by making in other forms. A problem in making watermelon cracker with using vacuum fryer is improper frying temperature. The optimum required vacuum frying temperature would produce a good texture watermelon cracker. The optimum temperature should produce watermelon cracker with favored crispness, color and taste criteria.

This research was conducted to determine the optimum temperature on the quality of frying chips, watermelon and know the needs of energy at the temperature of 75°C, 80°C, 85°C, and 90°C in the manufacture of chips, watermelon with vacuum frying equipment. Watermelon chips are expected to increase the added value of watermelon fruit in the form of chips.

The temperature frying process treatment were divided into 4, they are 75°C, 80°C, 85°C and 90°C with 4 kg load. Every treatment was repeated 3 times. Watermelon that has been cut and then put into freezer to be frozen. Freezing to improve the texture of the material. Freezing of material taken for 12 hours with the temperature of -10 °C.

The organoleptic test of watermelon cracker with crispness criteria obtained at 90 °C temperature, 85 °C for taste and color criteria, with energy efficiency of 26.88% and 23.18%. The acceptance of all organoleptic tests indicated that watermelon cracker with 85 °C temperature frying was more favored by the panelist with crispness criteria, red t are preferred by the panelists with the criteria of crisp, red brown to brown, and slightly o brown color, and a little bit sweet until sweet taste.

The optimum frying temperature watermelon chips using vacuum frying at the temperature interval 75-90 °C in a mathematical calculation is 85.9 °C.

Keywords: watermelon, vacuum fryer, frying temperature optimum