

ABSTRACT

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UTILIZATION OF RED DRAGON FRUIT (*HYLOCEREUS COSTARICENSIS*) PEELS FLOUR AS DIETARY-FIBRE SOURCES IN PREPARATION OF GLUTEN-FREE COOKIES

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Lack of dietary fibre consumption, especially by people suffering celiac disease, has been a major concern due to an increase risk of chronic diseases. This research was aimed to study the incorporation of red dragon fruit-peel flour to gluten-free cookies to improve the cookies dietary fibre content. Effect of blanching methods and drying temperature on red dragon fruit-peel flour's yield, hue degree, dietary fibre content, and moisture content were evaluated. Flour of red dragon fruit-peel treated with steam blanching and 65 °C drying temperature was chosen as the best red dragon fruit-peel flour which had high yield $66.951 \pm 0.464\%$, better hue degree 9.463 ± 0.247 , high dietary fibre content $58.040 \pm 0.872\%$, and moisture content $6.158 \pm 0.106\%$. Evaluations were also conducted upon effect of ratio of corn flour to red dragon fruit-peel flour on gelatinization states of corn flour on cookies physical characteristics including hardness, lightness, dimension, dietary fibre content, and consumer acceptance. Cookies made with 90 : 10 either non-gelatinized or gelatinized corn to red dragon fruit-peel-flour ratios were selected as best cookies which had hardness of 589.671 ± 15.799 g and 410.125 ± 10.373 g, lightness value 60.585 ± 0.850 and 33.203 ± 0.965 , diameter increase $97.573 \pm 0.626\%$ and $91.802 \pm 0.594\%$, thickness increase $75.736 \pm 0.827\%$ and $44.308 \pm 0.890\%$ and dietary fibre $14.609 \pm 0.005\%$ and $13.814 \pm 0.012\%$ for non-gelatinized and gelatinized corn to red dragon fruit-peel flour cookies, respectively. Based on panel acceptance such as scoring and hedonic test, the most accepted cookies produced was made with 90 : 10 cookies of non-gelatinized corn flour to red dragon fruit-peel flour ratio, containing $14.609 \pm 0.005\%$ of dietary fibre which can be claimed as "source" of dietary fibre that can be recommended for consumption by people with celiac disease.

Keywords: Red dragon fruit-peel, red-dragon fruit-peel flour, corn flour, non-gelatinized corn flour, gelatinized corn flour gluten-free cookies, dietary fibre.

References: 41 (1994-2017)