

***Optimization of temperature and drying time
Fruit Leather Great Banana With Taguchi Method***
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ABSTRACT

Great banana is a leading variety of Lumajang Regency which has the potential to be processed into fruit leather. This study aims to optimize the temperature and drying time in the process of making fruit leather from bananas using the Taguchi method and confirm the best treatment with the TOPSIS method. The parameters observed included moisture content, hardness, color, organoleptic color, aroma, taste, texture and hedonic test (preference). The experimental design used an L9 orthogonal array with two factors (temperature and time) and three levels (temperature 50°C, 60°C, 70°C and time 6 hours, 7 hours 8 hours). The results of the optimization of the Taguchi method showed that the drying temperature had a significant effect on the moisture content test with a p-value (0.008), hardness with a p-value (0.000), color with a p-value (0.019), color hedonic quality with a p-value (0.011), hedonic quality of aroma with a p-value (0.005), hedonic quality of taste with a p-value (0.046), texture hedonic quality with p-value (0.022), and hedonic test with p-value (0.013). Meanwhile, drying time had a significant effect on hardness with a p-value (0.001), color hedonic quality with a p-value (0.030), and aroma hedonic quality with a p-value (0.006). The best treatment based on the TOPSIS analysis was a combination of 50°C temperature and 7 hours (T1W1) with the highest preference value of 0.935. The combination produces a moisture content of 15.77%, a low hardness value of 0.195 N, a bright yellow color, a typical aroma of bananas, a typical taste of bananas and the most preferred level of preference.

Keywords: Fruit Leather, Great Banana, Taguchi, Drying Temperature, Drying Time.