

Optimasi Pasteurisasi Metode *Pulsed Electric Field* Sari Tebu Terhadap Sifat Mikrobiologis Dan Organoleptik Produk (*Optimization Of Pulsed Electric Field Pasteurization Method Of Sugar Cane Juice On The Microbiological And Organoleptic Properties Of The Product*)

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ABSTRACT

Sugarcane juice is easily damaged and has a short shelf life due to fermentation by microorganisms, which means that sugarcane juice is still not widely commercialized on a mass scale and can only be sold directly by traders. Sugarcane juice processing processes such as thermal pasteurization can help increase shelf life, but there is the possibility of damage to nutrition, taste and physicochemical properties. The thermal process can be combined with non-thermal processes, one of which is a pulsed electric field. This research aims to determine the effect of temperature and contact time of the pulsed electric field and to determine the optimization of temperature and contact time of the pulsed electric field on the microbiological and organoleptic properties of the product. The method used is Response Surface Methodology (RSM) with Central Composite Design. The factors in this research are pasteurization temperature of 60,65,70°C and pulsed electric field contact time of 4,6,8 minutes with responses to the number of coliforms, color hedonic quality, taste hedonic quality and aroma hedonic quality. The research results showed that the optimal value was at a temperature of 60°C and a pulsed electric field contact time of 8 minutes. The resulting response was a total of 17.96 APM/ml coliform bacteria, a color hedonic quality score of 2.96, a taste hedonic quality score of 3.44%, and an aroma hedonic quality score of 3.4%.

Keywords: *Sugar cane juice, Pulsed electric field, Response Surface Methodology*