

## Pemodelan Sorpsi Isotermik dan Pendugaan Umur Simpan Gula Kelapa Kristal dalam Kemasan Plastik

<b>Title</b>	Pemodelan Sorpsi Isotermik dan Pendugaan Umur Simpan Gula Kelapa Kristal dalam Kemasan Plastik
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<b>Abstract</b>	<p>Crystalline coconut sugar is a product that is thought to have a short shelf life. The high water content of crystalline coconut sugar will trigger the occurrence of sugar clumping (clumping), this will also reduce the physical quality of the product. The isothermic sorption of water is a curve that relates the water content data to the water activity of a material at the same temperature. Knowledge of isothermic sorption of a food ingredient can help determine the type of packaging needed and predict the characteristics of suitable storage conditions and shelf life. The shelf life of crystalline coconut sugar is also greatly influenced by the type of packaging used. Improper packaging will cause a decrease in the quality of the food product. Determination of isothermic sorption of Crystal coconut sugar water using the GAB model (Guggenheim, Anderson, de Boer) using saturated salt in the range of <math>a_w</math> 0,05-0,9 at 30 <math>^{\circ}\text{C}</math>. Estimation of shelf life uses coconut sugar that has been dried and then packaged using HDPE (high density polyethylene), PP (polypropylene), and LDPE (low density polyethylene) packaging then stored at 30 <math>^{\circ}\text{C}</math> for 5 weeks and observed every 7 days. The results showed that the value of the equilibrium moisture content increased with increasing the value of <math>a_w</math> at constant temperature. The GAB model is a rather precise model in describing the ISA characteristics of crystal coconut sugar. The shelf life of Crystal coconut sugar for 5 weeks at a storage temperature of 30 <math>^{\circ}\text{C}</math>, namely LDPE packaging 143 days, PP packaging 528 days and HDPE packaging 310 days. From the results of the calculation of shelf life using ASLT with the Arrhenius approach Crystal coconut sugar stored using PP (polypropylene) packaging has a longer shelf life than LDPE (low density polyethylene) and HDPE (High Density Polyethylene) packaging.</p>
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