

**Application *Statistical Process Control* (SPC) of Sugar Production at
Grinding, Purification, and Evaporation Stations PT Sinergi Gula Nusantara
Glenmore Sugar Factory**

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ABSTRACT

Sugar is a source of energy and a key player in the planting sector. Statistical Process Control (SPC) is a statistical technique used to determine whether the analytical data is within the control boundaries. The research aims to explore the application of quality control and statistical process control (SPC) as well as follow-up solutions for sugar loss during the production process. Data is tested with X and R control charts for grinding nira and I-MR charts for raw nira, filtrate, encerate, and thickness. Data analyzed with X and R control charts does not fall outside the UCL and LCL, indicating that the production process is controlled. However, data analyzed with I-MR control charts shows points outside the UCL and LCL, necessitating the elimination of out-of-control data. Based on the analysis of the cause-and-effect diagram, several factors influence the sugar loss during the production process: humans, methods, machines, and materials.

Keywords : *Statistical Process Control*, Brix, Pol, HK