ANALYSIS OF PEANUT COOKIE PRODUCT QUALITY CONTROL USING STATISTICAL PROCESS CONTROL METHOD AT V-BIE COOKIES MICRO ENTERPRISE, JEMBER REGENCY

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ABSTRACT

This study aims to analyze the quality control of peanut cookie products at the V-Bie Cookies micro-enterprise in Jember Regency using the Statistical Process Control (SPC) method. The analysis methods used include control charts (p-chart), Pareto diagrams, and fishbone diagrams to identify and reduce the defect rate of products, as well as process capability analysis. The data used were obtained through 25 direct observations of the peanut cookie production process, focusing on the attributes of shape, texture, and color.The results show that the peanut cookie production process is statistically controlled for all observed attributes, as most of the defect proportion points fall within the Upper Control Limit (UCL) and Lower Control Limit (LCL) on the control chart. However, the Pareto diagram reveals that shape defects are the most frequent (34.21%), followed by texture defects (33.01%) and color inconsistency (32.78%). The fishbone diagram analysis identifies the main causes of product defects as human factors (lack of worker accuracy, errors in ingredient mixing), method factors (non-compliance with baking SOPs, non-homogeneous mixing), and machine factors (unstable oven temperature, inaccurate oven timer).The process capability (Cp) calculations show values of 0.9539 (95.39%) for shape conformity, 0.9556 (95.56%) for texture conformity, and 0.9559 (95.59%) for color consistency. Although the process capability values indicate that most products meet quality standards, improvement efforts are still needed, particularly in the shape and doneness aspects of the cookies, to reduce defects and improve overall product quality.