Analysis of Product Quality Control of Tofu
Using Statistical Process Control (SPC)
at UD Tata in Sidoarjo Regency
Rahmat Dhandy S.TP., M.Tr.P as Chief Counselor

Ega Fadhilah Akbar
Off-Campus Study Program in Agroindustry Management
Department of Agribusiness Management

ABSTRACT

UD Tata was one of the tofu producers in Sidoarjo Regency that frequently faced challenges and issues related to product quality deviations, such as soft texture, physical damage, or contamination. This study aimed to analyze the quality control of the tofu production process using Statistical Process Control (SPC) analysis. A quantitative method was used to identify the defect rate based on samples representing the population at UD Tata. The results from the check sheet indicated three main defect criteria: soft tofu texture with 596 occurrences, visually damaged tofu with 486 occurrences, and contaminated tofu with 443 occurrences. The np control chart analysis showed that, in general, the quality control of tofu products at UD Tata was within statistical control limits. However, the np chart indicated one point beyond the Upper Control Limit (UCL) for the cleanliness attribute, suggesting the need for corrective action, while the other two attributes remained within control limits. The Pareto diagram identified that the highest defect level was the tofu texture issue, with a percentage of 40%. The cause-and-effect diagram revealed five key factors contributing to the low quality of tofu at UD Tata: human factors, methods, materials, machines, and environment. Process capability analysis for the three criteria showed the following results: soft tofu texture at 97%, visually damaged tofu at 97.6%, and contaminated tofu at 98%. The overall production process at UD Tata was categorized as good. The implementation of Statistical Process Control (SPC) in quality control at UD Tata was considered essential for monitoring production process stability and served as a basis for evaluation to reduce variation and defect levels in the products.

Keywords*: Quality, Tofu, SPC*