

Quality Control of Milkfish Cracker Production Process Using SPC (Statistical Process Control) Method at UMKM Qonjamadu Sidoarjo.

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ABSTRACT

UMKM Qonjamadu is a milkfish cracker producer in Sidoarjo facing challenges in maintaining consistent product quality, such as defects including crushed shapes, burnt colors, and non-uniform crispiness. This study aims to identify quality control implementation, determine dominant defect criteria, analyze Statistical Process Control (SPC) application, and provide quality improvement recommendations. This descriptive quantitative research utilized a direct observation approach with simple random sampling of 10% from daily production (5.5 kg of 55 kg) over 20 observation days, reaching a total sample of 110,000 grams. Analytical tools included check sheets, p-control charts, Pareto diagrams, Ishikawa diagrams, and process capability analysis. Check sheet findings indicated total defective products reached 7,816 grams (7.11%) of the total sample. Defects were dominated by shape integrity at 3,366 grams (43.06%), followed by cracker crispiness at 2,474 grams, and color uniformity at 1,976 grams (25.29%). The p-control chart analysis for shape integrity yielded a center line (CL) of 0.0306, upper control limit (UCL) of 0.0376, and lower control limit (LCL) of 0.0236. The overall process remained statistically controlled, although two observation points (4th and 14th) exceeded the UCL due to assignable causes. Ishikawa diagram identified root causes including inconsistent manual slicing thickness, lack of worker care, and physical collisions during frying and packaging. Improvement recommendations involve establishing written SOPs, controlling oil temperature and drying duration, and providing worker training for careful product handling.

Keywords: *Quality Control, Milkfish Cracker, SPC, P-Chart, UMKM Qonjamadu.*