

***Quality Control Analysis of Cayenne Pepper Seeds using Statistical Process Control (SPC) Method at PT Benih Unggul Sejati of Jember Regency***

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**ABSTRACT**

*PT. Benih Unggul Sejati is a company engaged in the production and marketing of superior seeds for seasonal vegetables and fruit, one of which is cayenne pepper seeds. PT. Benih Unggul Sejati has been established since 2014 and has a production base around the Jember Regency area. This research aims to determine the application of quality control to cayenne pepper seeds and the causal factors that influence the quality of cayenne pepper seeds. This research uses the Statistical Process Control method as an analysis tool, namely X-bar control charts, R control charts, np control charts, process capabilities, Pareto diagrams and cause-and-effect diagrams. The results of the analysis on the X-bar control chart for testing water content and seed purity found test points that were outside the control limits. The application of the R control chart for testing water content and purity as well as the np control chart for testing germination is within control limits so that the production process can be said to be good and statistically controlled. The results of the process capability values obtained for water content testing were  $C_p = 3.47$ ; seed purity testing, namely  $C_p = 1.85$ ; and germination test  $C_p = 0.94$ . This shows that the company can be said to be capable of carrying out the production process. Based on the cause and effect diagram, the causal factors that influence the quality of cayenne pepper seeds are obtained due to human, tool, environmental and material factors.*

**Keywords:** *Cayenne Pepper Seeds, Quality Control, Statistical Process Control*