Minitab

Bottling Plant Quality Improvement

Products

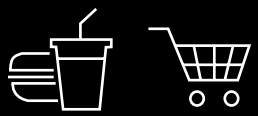
Minitab Statistical Software,
Minitab Real-Time SPC

Personas

Quality

Verticals

Food & Beverage
Consumer Goods



CHALLENGE

A bottling plant Quality Engineer struggles with inconsistent product quality due to reactive problem-solving. Issues like fill levels that are too low or too high, misaligned labels, and inconsistent carbonation are often identified after significant scrap and rework have occurred, leading to lost time and money. Outdated reports and manual data compilation hinder timely identification of root causes.

TOOLS

Control Charts (X-Bar, R, I-MR), Capability Analysis, Regression Analysis, Design of Experiments (DOE)

EXAMPLE KPI'S

Fill level, label alignment accuracy, carbonation levels, defect rate, scrap rate, rework rate, production time

SOLUTION

Minitab Real-Time SPC provides instant visibility into production data, enabling the Quality Engineer to detect deviations in fill levels, carbonation, and capping processes in real time. Control charts alert to shifts and trends, allowing for proactive intervention before defects accumulate. Integrated with Minitab Statistical Software, the Quality Engineer can perform advanced analysis directly from the Real-Time SPC dashboard.

RESULTS

The bottling plant experienced a significant reduction in scrap and rework due to early detection and correction of process deviations. Improved fill level consistency led to significant savings and higher customer satisfaction. Proactive identification of issues minimized production downtime. The Quality Engineer gained greater control over the production process and can make data-driven decisions to optimize quality and efficiency. The plant also saw a decrease in customer complaints related to inconsistent product quality, enhancing brand reputation and customer loyalty. The standardized process enabled by Minitab allowed for consistent communication about quality issues across departments, fostering a culture of continuous improvement.