

SIX-FIGURE ANNUAL SAVINGS ON A SINGLE FILLING LINE



PRODUCTS

Minitab Real -
Time SPC



PERSONAS

Quality Engineer
Process Engineer



VERTICALS

Food and Beverage
Manufacturing

CHALLENGE

Our customer is a global manufacturer of alcoholic and non-alcoholic beverages. Their filling operations manage a wide range of products – from lower-end non-alcoholic mixers to premium spirits. The company had key areas of concern that it wanted to address: no maximum allowable variance (MAV) violations and maintaining an overfill of less than 1.0%.

TOOLS

The company assessed statistical process control (SPC) solutions to improve performance. Minitab RealTime SPC was selected for a proof of concept on one filling line at their Toronto, Canada operation. The trial was designed for a limited number of products, but included quality, safety and packaging concerns using the check sheet data collection feature included in Minitab Real-Time SPC.

RESULTS*

The company selected Minitab Real-Time SPC based on overall ease of use, electronic check sheet capabilities, and real-time event notifications. In addition, improved visibility into content control performance was a key factor in system approval.

During the proof of concept, operators adopted standardized, portable data collection that streamlined daily quality checks. Real-time notifications helped prevent potential packaging errors, including mismatched divider trays identified before shipment. SIP/CIP and verification data were accessible within minutes, enabling faster management review and reporting.

Net content analysis revealed a significant opportunity to reduce material giveaway while maintaining compliance with Maximum Allowable Variance requirements.

Following implementation, 200 subgroups of five samples were monitored for net content on a 750 ml single malt product. Initial performance met the company's goals of zero MAV violations and less than 1.0% overfill.

Further statistical analysis indicated that reducing average overfill by 0.50% could materially improve cost performance without increasing compliance risk. The fill target was adjusted, and an additional 200 subgroups were evaluated.

Modeling based on observed process performance demonstrated that resetting the target to 751.87 ml maintained greater than 95% probability of remaining within MAV limits. Under these operating conditions, the projected material savings equate to approximately \$18,000 per week for a single production line.

Based on 48 production weeks annually, this represents an estimated annual savings potential of approximately \$800,000 per line for the evaluated product mix. Actual savings will vary depending on production volume, product cost, and process stability.

With successful proof of concept, the company is moving forward with a full site roll out of Minitab Real-Time SPC. The scope will be increased to include the bottle preparation area along with the filling, labelling, packaging, lab, and quality areas.

*Certain operational and financial figures have been anonymized or adjusted for illustrative purposes. Reported savings are modeled estimates derived from observed process improvements. Actual results will vary.