

Take a step back and add value

Martyn Gill, InfinityQS Europe general manager, explains how collecting and using data intelligently can increase its value and meaning, allowing any quality control or production issue to be addressed effectively

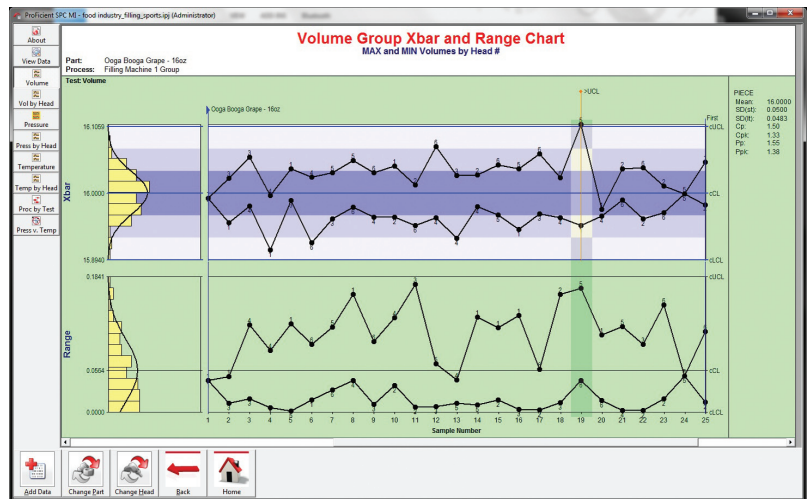
Food and pharmaceutical manufacturers and processors are all too familiar with the task of collecting and managing large amounts of data. As ingredients are blended together, sensors in the equipment are providing a constant stream of measurements and transmit flow rates, temperatures, pressures and a variety of other parameters. Having a control system in place that sends out this type of data in millisecond intervals is all well and good, but what happens when it comes to analysing the data, especially when it comes from disparate machines or systems?

In order to make improvements to your processes, you need to take a step back and look at your production process as a whole, rather than the individual pieces. Real-time alerts on the shop floor allow operators to quickly remedy a situation, but deeper analysis into these irregularities reveals the causes of the problems and highlights areas for improvement.

While a centralised quality hub or repository is a powerful tool for manufacturing intelligence, you must first understand which data should be collected. This is best determined by seeking input from staff members at each level of your organisation. Ask them what type of information would be most useful to each of them.

Most likely, C-level executives will be interested in more advanced data summaries that can help lead to overall cost savings. For example, percentages and predictions in scrap reduction or waste are highly valued. For quality professionals and plant managers, defect rates and overall equipment effectiveness (OEE) metrics are key. Plant operators are more focused on real-time alerts for out-of-spec events and other product-specific information.

A sample screenshot, showing control charts which display the maximum and minimum fill height levels produced by each filler head during production

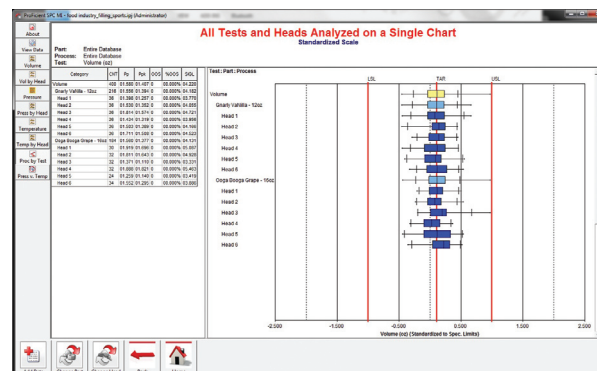


As part of its continuous improvement efforts, the global beauty and fragrance company, Coty, determined that its filling process was generating a higher level of waste than expected. After performing an initial analysis of the product lines,

the manufacturing team discovered that the machines were overfilling the containers, wasting expensive and vital ingredients. They needed to gather more information to find the root cause of this overfilling, but they did not have the historical data on these lines to do so. Coty found that it could consolidate their necessary key performance indicators (KPIs) for easy interpretation and analysis.

The processing industry has a tendency to rapidly collect vast amounts of data. There is a fine line, however, between the necessity in collecting data in real time, and collecting data too fast. The secret to finding a middle ground is to collect data in different, yet reasonable, time intervals, to allow for variations to occur.

Another sample screenshot which shows analysis of production data to provide a deeper understanding of the performance of each fill head across multiple products, in relation to their targets



After collecting meaningful data in rational intervals and assimilating them into your hub, you can take the next step. A manufacturing intelligence hub, powered by statistical process control (SPC) allows for easy analysis and reporting. Utilising data analysis tools — such as root cause analysis, Pareto charts and box and whisker charts — offers the opportunity to find the true meaning and value in the data, while presenting it in the best format for each audience.

After consolidating its production data, Coty used SPC analysis to gain a more precise understanding of the issue on their fill lines. Using this information, the company was able to eliminate overfilling the containers and reduce the amount of liquids they needed to produce. This also eliminated time-consuming post-production quality checks.

The quest for manufacturing intelligence means investing the time and resources (the right people and technology) needed for optimal results. Coty trained more than 100 users — from line operators and quality inspectors to managers and directors — on the ins-and-outs of SPC.

Remember that quality initiatives don't come full circle overnight. Therefore, initially, keep the scope of your implementation manageable. Home in on an area that will produce quick and significant results. By focusing on filling levels, Coty was able to see benefits across the entire supply chain, including accuracy for quality professionals, to executives seeing financial savings. Coty was also able to ask the packaging design engineers to review the bottle designs and ensure ideal liquid fill amounts without comprising the overhead space.

InfinityQS
T: 0800 888 6200
www.infinityqs.co.uk

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