

Case Study 1: Color Analysis of Buns and the Resulting Impact on Quality

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In response to a request from a major bakery, our application engineers worked to adjust their process for the production of buns. Previously they had been using only manual inspection of the final products color, and were forced to work with limited historical data.

Week 1

Using a vision inspection system providing color data with the output in L*a*b* units, the producer began altering their process based on the calibrated, repeatable results. The first weeks results can be found in Figure 1.

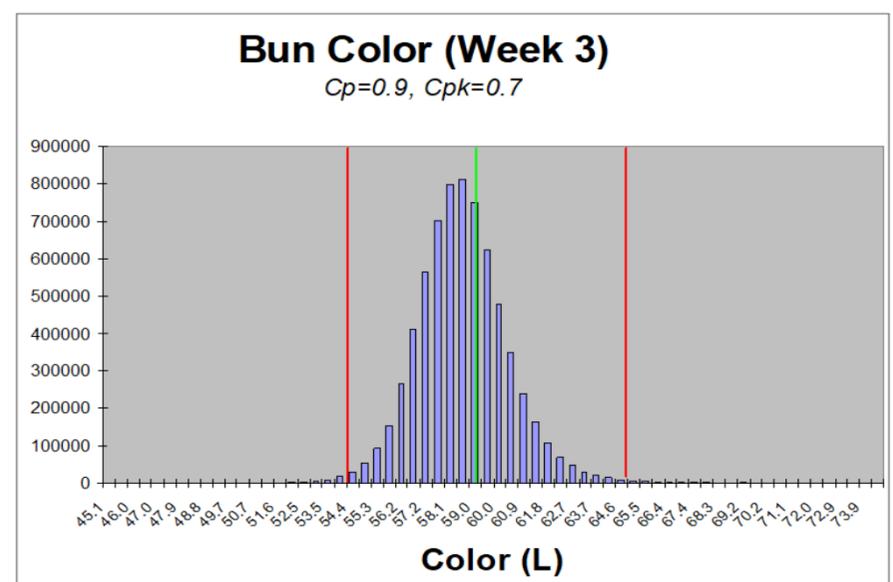
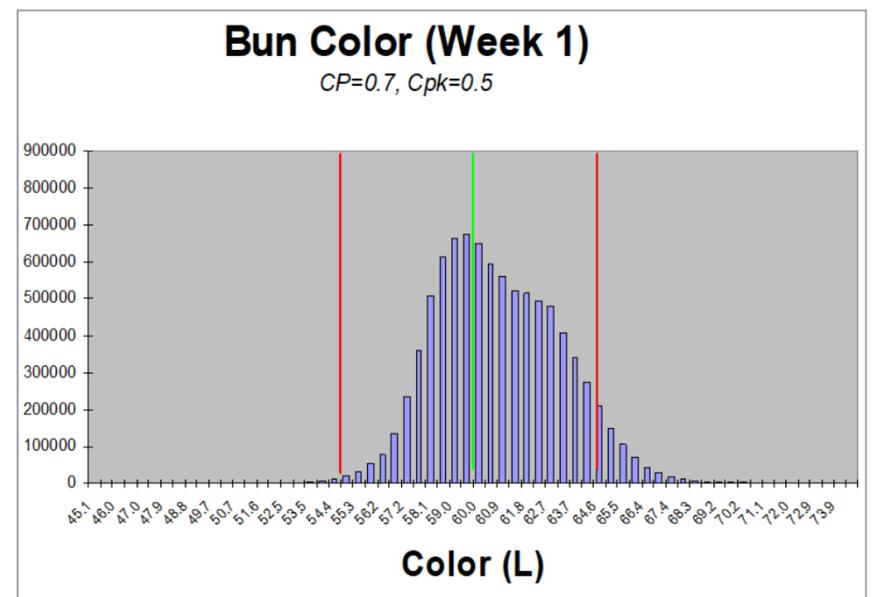
The customer found that the results had a looser distribution than they were hoping for and were not centered around the color they had in their specifications.

Week 3

After changing their process, a second batch of buns were run with the results found in Figure 2. When compared to their first weeks results there was a dramatic tightening of the color distribution of the final product as well as a bun color that was much better centered around the specified color point.

Production managers noted that operators were no longer “flying blind” and were able to attain a better understanding of how their process affects their product. They were able to quantify what normal variation was, judge the impact of setting changes and validate the success or failure produced. Previously this had not been possible with manual inspection systems as results were not consistent and for high speed lines only sample inspections were performed.

Calibrated vision inspection systems automatically generate and distribute accurate production, quality and rejection reports allowing operators to pinpoint problems and identify opportunities for cost reductions and process improvements.



	Cp	Cpk	% Out
Week 1	0.7	0.5	7.7
Week 3	0.9	0.7	1.4
Week 20	1.0	0.8	1.0

- Higher Cp = tighter distribution
- Higher Cpk = better centered

About Montrose Technologies

Built on the legacy Dipix brand, the innovative new Montrose systems provide customers with solutions that reduce operating costs, improve product quality, and generate critical production data. At the core of our expertise is a unique 2D/3D/color imaging engine that provides accurate size, shape and color information for randomly-oriented, fast-moving objects. This core technology is used in all of our inspection systems and ensures that every product is identified, analyzed and, if necessary, individually removed or diverted from the product stream.