



From the Floor

Color tests-quick n' easy

As Seen in
**Snack Food &
 Wholesale Bakery**

When Pepperidge Farm installed Konica Minolta Sensing's BC-10 Baking Contrast Meters, judging the color of baked goods became a cinch. According to Mike Davis, bakery technologist at Pepperidge Farm, evaluating color by eye isn't as easy as many home bakers might think, in fact, he said it was a big challenge.

Visual color judgment, David explains, are affected by factors ranging from plant lighting conditions, the angle of observation and individual perceptions. Before the bakery started using the meter, workers would judge "acceptable color" by comparison with a color photograph of the baked product. Although the photos were taken carefully, with special lighting conditions, Davis says evaluating the actual product was problematic.

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-Mike Davis, Baker Technologist at Pepperidge Farm

Fatigue, personal preference, individual variance in color vision and even a person's age may affect color judgment.

"Until we learned about the Minolta BC-10 instrument we were unable to find an accurate, economical color reader for baked product," Davis notes. Pepperidge Farm, he adds, recognized that consistent color and appearance are important to consumers.

The portable, hand-held and battery-operated meter from Konica Minolta Sensing allows the bakery to judge products subjectively and consistently across production plants.

The marketing department develops figures for acceptable color contrasts standards and send them numerically to every plant, ensuring uniform color in all Pepperidge Farm products. The meters are currently in use at Pepperidge Farm's headquarters and in eight production plants.

Pepperidge Farm now uses Bakery Contrast Units (BCU), with the scale calibrated so that a difference of 0.1 of a BCU corresponds to one perceptible shade difference. The BC-10 Meter also provides the bakery with the commonly used CIE L*a*b* color space and scale system, measuring lightness/brightness in units from the darkest, 0, to the lightest, 100.

Instead of visually evaluating a product as it comes off the baking line, operators simply placed the hand-held meter on the baked goods sample and obtained a reading, signaled by a tone and a red LCD signal. Items within the BCU tolerance figures are approved while others are rejected.

The meter also has a memory for 16 numerical measurements and can display high, low and average reading. An RS232 interface allows the data to be exported to computer archives. Davis says the measurements are particularly helpful for products whose flavor profiles rely heavily on color.