

The Two Sides to Lab Testing



Donna Berry

When it comes to on-site lab testing of ingredients and just-produced product, the question is not if you should, it is how many tests are enough. There are two areas at stake—quality and safety.

When it comes to quality, compositional analysis is the first step. Near-infrared analyzers offer rapid analysis of solid and semi-solid dairy products with minimum sample preparation. An accurate determination of protein, fat, moisture and solids can often be achieved in less than 50 seconds.



At this year's IFT Annual Meeting & Food Expo in New Orleans, CEM Corp., Matthews, N.C., received special accolades. The company's Sprint Rapid Protein Analyzer won an IFT Food Expo Innovation Award. In only two

minutes, the Sprint Rapid Protein Analyzer accurately determines protein in a wide variety of foods, including dairy products, using CEM's proprietary iTAG Technology. Unlike current testing methods that determine the amount of nitrogen present and then calculate the protein, the Sprint actually "tags" the protein for a direct measurement. Thus, the system avoids the problem of non-protein nitrogen, as can be found in some contaminants, falsely elevating the protein results. This is increasingly important in the wide variety of whey protein-enhanced foods entering the marketplace. Congrats, CEM!

On-site testing for food allergens has become increasingly simple thanks to kits designed for testing products for the presence of allergens during any point of the production process. The test kits can also be used to test for contamination of environmental surfaces, clean-in-place rinse waters and raw materials. Kits are now available to specifically test for the presence of milk, peanut, almond, hazelnut, egg, soy flour and gluten.

Gluten is the common name for a combination of water-insoluble proteins found in various grains. Though not classified as an allergen, consuming gluten by those inflicted with celiac disease is deleterious. New easy-to-use tests can quickly detect the presence of as little as 10ppm gluten in dairy foods. The test can be used on individual ingredients or on finished products.

Just this month, Londonderry, N.H.-based Stonyfield Farm announced that it has been able to certify many of its products to be free of gluten. Nothing in the recipe has changed, and the majority of Stonyfield Farm's products have always been gluten free, but now it is official. "It's a certification that we welcome," says Stonyfield Farm President and CE-Yo Gary Hirshberg. "Now our consumers with gluten intolerance can enjoy these foods without worry." You can bet Stonyfield's quality assistance program includes testing for the presence of gluten.

Flavor and aroma detection is another area gaining attention. Poor quality or defective ingredients can cause significant brand damage, hence the need for rapid and accurate analysis of volatile compounds in ingredients and finished foods. New tests enable scientists and lab technicians to measure and compare food and flavor compounds with no sample preparation and with high accuracy. The tests have high-sensitivity detection of volatile compounds to a parts per trillion by volume level. Tests provide enhanced differentiation between volatile compounds, including quantification and identification of volatile compounds.

When it comes to food safety, the dairy industry has been very fortunate. From spinach to ground beef and most recently jalapeno peppers, food safety is on the mind of all manufacturers and consumers.

Rapid detection systems are able to screen for microbial contamination in a wide range of dairy foods, including those processed under ultra-high heat

treatments and those using extended shelflife technologies. Reducing the time it takes to get reliable microbial results contributes to reduced manufacturing cycle times, improved manufacturing efficiencies and earlier product release, which in turn reduce working-capital and facility requirements and improve profitability. Further, an earlier warning of contamination typically results in more effective troubleshooting and a faster recovery from contamination events when they occur.



Photo courtesy of Celsis

Such rapid detection systems enable dairy processors to isolate a contamination and take corrective action sooner, where the economic impact of contamination events may be significantly reduced. This can yield significant financial savings in inventory and warehousing costs, as well as greatly improve management of contaminated product by providing results in 48 hours versus days.

No one wants a costly recall . . . especially of a product that poses danger to consumers. So remember, the question is not if you should be testing, it's what tests make the most sense for your operation. ■

Donna Berry is the Product Development Editor for Dairy Foods. She can be reached at 312/656-6453 or donnaberry@dairy-food.com.