

Food: Microscopy for Thought

Scientists and engineers employed in the food industry must address a number of key issues concerning food production and safety. More than ever, they find themselves in need of advanced technical training to meet today's industry demands. Advocates of food safety (aren't we all?) will be glad to know that pathogens are a chief concern among industry and regulatory agencies—for the obvious purposes of improving food safety and human wellbeing—while contamination remains a common cause of product-related consumer complaints.

In the late 1980s, McCrone Research Institute (McRI) introduced a course, "Microscopy in the Food Industry" (No. 502), for scientists working in food research, who must analyze food ingredients in new product research and development, quality control, competitive analysis and cases of suspected contamination. The course taught techniques required for the microscopical examination of foods.

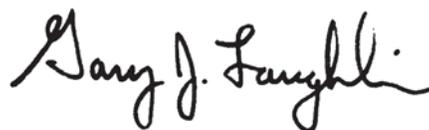
Today, the McRI food course continues in great demand. Now called "Microscopy of Food and Foreign Body Identification" (No. 1560), this latest version covers food plants, cereal grains, starches, flours, doughs, premixes, leavening agents, meat, bone, additives, the analysis of competitor products and the identification of contaminants such as glass, hair, blood, metal and black particles. Stereo, polarizing, phase contrast and fluorescence microscopy are used in class lessons and experiments. Think of it as forensic microscopy for food scientists and technologists. (For a complete course description, please visit the McRI website, www.mcri.org.)

Also of interest to food technologists are several other specialized courses specific to the industry that

McRI is currently offering, including "Glass Contaminant Identification for Food Scientists." This course assists the analyst in determining the origin of glass contaminants frequently encountered in food and food-related products. Students will learn how to positively identify a foreign substance as glass—distinguishing it from other transparent, shiny substances that break easily—and then determine the source of the glass, whether it be from food and beverage containers, sheet glass from a window or mirror, or glass from light bulbs, fluorescent lights and other sources.

McRI plans on expanding its microscopy curriculum to meet the specialized needs of food scientists with courses on black particle identification, hair identification and metal identification. We will also add other analytical procedures such as electron microscopy, infrared and Raman microspectroscopy, fluorescence microscopy, microchemistry and more.

After all, food is fascinating. It persists as headline news of interest to everyone, whether it involves fad diets, allergies, foodborne bacteria, additives and pesticides, or even the lethal threat of bio-terrorism. With all these life-impacting concerns, there is seemingly no end to food research. We will continue to do our part in training individuals to properly perform the vital research required for keeping our food supply as safe as possible.



Gary J. Laughlin, Editor