

Advance in detecting melamine-adulterated food

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Scientists are reporting that gene-altering substances called alkaloids are released in forest fires. Credit: Wikipedia Commons

Researchers in Indiana are reporting an advance toward faster, more sensitive tests for detecting melamine, the substance that killed at least 6 children and sickened 300,000 children in China who drank milk and infant formula adulterated with the substance. The improved tests may ease global concerns about food safety, the researchers say. Their report is scheduled for the May 27 issue of ACS' *Journal of Agricultural and Food Chemistry*.

In the new study, Lisa Mauer and colleagues note that tests already exist for [melamine](#), which is widely used in plastics. Certain food manufacturers, however, have added melamine to food products marketed for humans and domestic pets to boost apparent protein content. Conventional tests, however, tend to be too slow, insensitive, and too complex for large-scale food screening applications. Researchers say that better detection tests are needed, particularly in the wake of new U.S. [Food and Drug Administration](#) (FDA) guidelines limiting melamine in dairy products to 1 part per million (ppm) or less.

The scientists describe a trio of promising detection methods based on near- and mid-infrared spectroscopy, analytical techniques that identify a substance based on its chemical fingerprint when exposed to specific kinds of light. In laboratory studies, the scientists used these tests to screen [infant formula](#) spiked with different concentrations of melamine. They found that these methods accurately detected the substance at levels as low as 1 ppm, meeting the new FDA detection guidelines. The techniques take as little as 5 minutes to detect melamine and are relatively simple to use, requiring little or no sample preparation.

More information: *Journal of Agricultural and [Food](#) Chemistry*,
“Melamine Detection in Infant Formula Powder Using Near- and Mid-Infrared Spectroscopy”

Provided by American Chemical Society ([news](#) : [web](#))

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