



Nanomaterial in food demands that caution be used by manufacturers

Andrew Schneider | December 5, 2011

Research into the use of nanoparticles in food is quietly increasing in laboratories of companies that supply ingredients for some of the nation's biggest food manufacturers.

Environmental and public health experts worry that food processors and manufacturers may not know they're buying subatomic, manmade nanoparticles when they purchase the latest offerings in flavorings, coloring and coatings for use in the food they produce.

At various conferences for food scientists that I attended this year, nanoparticles were being discussed with great excitement in applications like anti-bacterial sprays and coatings for packaging that emit visible color changes if the shipping life or temperature restrictions of food have been exceeded.

But what concerns many health authorities is that untested, nano-containing material are likely to find their way into food ingredients themselves.

A report was issued Tuesday by **As You Sow** saying as "food and food packaging companies explore the use of nano-materials to enhance products, they need also attend to potential risks introduced."

As You Sow is a nonprofit organization dedicated to increasing environmental and corporate responsibility in publicly held companies.

"The real problem is that companies should be required by federal regulation to do these tests before they put products on the market," says Jaydee Hanson, policy director of The International Center for Technology Assessment. "**As You Sow** is pushing these corporations because the government—USDA, FDA, and EPA is not doing its job." Competition in the food industry is enormous and bringing out a new flavor of something or a product that stays crunchy, or appealing or no longer need refrigeration can bring in millions in profits.

Presentations at poster sessions at the scientific conferences show that at least preliminary research is being done with nanoparticles that offer useful applications like these and others.

Within this world of structures a billionth of a meter or less in size, industrial and consumer applications using nanoparticles border on the magical.

But the enthusiasm for nano-product is, or at least should be, tempered by the growing number of peer reviewed studies that have shown that many nanoparticles are small enough to penetrate the skin, lungs and pass through the protective blood-brain barrier. Many public health experts say these findings should justify caution by anyone using nano-material.

The report said that because of their small size, the "intentionally engineered" nanomaterials are able to go places in the body that larger particles cannot, and it warned:

- New "nanofood" products should only be used if safety testing ensures that there are no negative impacts on human health or the environment.
- Current regulatory controls are inadequate to assess or ensure safety.

The scientific consensus is that there is a lack of knowledge regarding how nanomaterials interact at the molecular or physiological levels and their potential impacts on health and the environment.

The report, with its almost incomprehensible title – “*The Sourcing Framework for Food and Food Packaging Products Containing Nanomaterials*,” was created with food companies including Kraft, McDonald’s, Whole Foods, Yum! Brands, and Pepsi. It said the safety concerns raised by the rapidly evolving nanotechnology have yet to be fully understood. The organization said the study can help food companies develop safeguards on how to identify the presence of nanomaterials in products.

Evaluating nano safety

“Consumers should be concerned that these tiny chemicals may already be in foods and food contact materials, without being publicly disclosed,” says Jennifer Sass, senior scientist and nano authority for the Natural Resources Defense Council.

“Consumers can’t even make informed choices when they don’t know where these chemicals are, what they are, or how toxic they are. It’s an outrageous violation of the public trust that companies are refusing to identify on the label the ingredients or food contact materials that are nano-sized, and FDA is letting them get away with it,” Sass said. Michael Passoff, senior strategist and co-author of the study, said the uncertainty and lack of transparency on the application of nanomaterial poses unnecessary risks for consumers, workers, companies, and investors.

“The FDA is not doing nearly enough,” Passoff said, and added that federal regulators have so far ignored nano-food despite calls for reform by the Government Accountability Office.

The FDA allows too much control over the use of nanomaterial to remain with the food manufacturers, the he said. The agency permits food producers using nanoparticles “to determine what safety testing they should be conducting and how transparent they should be in disclosing the results of safety tests, and if they should inform consumers that they are eating these products,” Passoff said.

He pointed out the stark differences between how the U.S. and other countries handle the issue.

“In contrast to FDA’s approach, all food ingredients that incorporate engineered nanomaterials must be submitted to regulators in Canada and the European Union before they can be marketed,” Passoff said.