

Activists take aim at nanomaterials in Dunkin' Donuts

The donut giant - along with Kraft and McDonald's - faces challenges over microscopic materials in its food chain. Is this the next GMO crisis?

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The activists at environmental nonprofit As You Sow want you to take another look at your breakfast doughnut. The organization recently filed a shareholder resolution asking Dunkin' Brands, the parent company of Dunkin' Donuts, to identify products that may contain nanomaterials and to prepare a report assessing the risks of using these substances in foods.

Their resolution received a fair amount of support: at the company's annual general meeting in May, 18.7% of shareholders, representing \$547m in investment, voted for it. Danielle Fugere, As You Sow's president, claims that it was the first such resolution to ever receive a vote. Though it did not pass, she says that she is encouraged by the support it received.

"That's a substantial number of votes in favor, especially for a first-time resolution," she says.

The measure was driven by recent testing sponsored by As You Sow, which found nanoparticles of titanium dioxide in the powdered sugar that coats some of the donut chain's products. An additive widely used to boost whiteness in products from toothpaste to plastic, microscopic titanium dioxide has not been conclusively proven unsafe for human consumption. Then again, As You Sow contends, there also isn't proof that it is harmless.

"Until a company can demonstrate the use of nanomaterials is safe, we're asking companies either to not use them or to provide labels," says Fugere. "It would make more sense to understand these materials before putting them in our food."

As You Sow is currently having 16 more foods tested. The result should be available later this summer, Fugere says.

Differing corporate responses

Nanoparticles are tiny pieces of matter measuring less than 100 billionths of a meter – one-thousandth the thickness of a sheet of newspaper – on at least one dimension.

Nanotechnology is often hailed for its potential to advance medicine, environmental clean-up, energy efficiency, and even theft prevention. In food, these particles promise creamier textures, longer freshness, and more vivid colors. But Fugere and others are wary about the dangers of having customers consume particles that have not been proven safe.

These worries will sound familiar to anyone who has followed the rising tide of concern about genetically modified organisms in the foodstream. But the difference with nanoparticles, Fugere says, is that use of these materials is not yet widespread.

"The concern has been to avoid what has happened with GMOs, where you've got something that becomes part of the food system that's very difficult to remove," she says.

In a statement, Dunkin' Donuts argues that the titanium dioxide identified by As You Sow does not qualify as a nanomaterial according to European Union rules or draft US Food and Drug Administration regulations. The company also points out that there is no agreed-upon standard method for identifying nanoparticles in food.

"Dunkin' Brands continues to monitor research being conducted on nanomaterials, and we are actively engaged in discussions on the topic with our suppliers and leading researchers in the field," the statement claims.

In 2008, As You Sow filed nanomaterial labeling resolutions with McDonald's and Kraft Foods. In response, McDonald's released a statement declaring that it does not support the use of nanomaterials in its food, packaging or toys. Kraft responded that it would make sure to address health and safety concerns before ever using nanomaterials in its products.

Inconclusive studies

In some studies of nanoscale titanium dioxide, "it has been shown to exhibit toxicity in cell cultures and in animals at high doses," says Geoffrey Bothun, director of the Rhode Island Consortium for Nanoscience and Nanotechnology. Those results, however, don't necessarily mean that the additive poses a threat to humans. As Bothun points out, "I don't believe humans would be exposed to such doses in their food products."

Other studies have raised concerns about the safety of some nanomaterials. Research recently conducted by the Massachusetts Institute of Technology and Harvard University's Center for Nanotechnology and Nanotoxicology suggests that some nanoparticles could cause significant damage to DNA. Another study by researchers at Indiana University-Purdue University Indianapolis indicates that carbon nanoparticles can have an adverse impact on kidney cells.

Part of the problem is that nanoparticles are a relatively recent addition to the food stream. "I don't think the long term studies have been conducted, [so] we cannot yet draw concrete conclusions," Bothun explains.

Nanotechnology's small size, the very feature that makes it so potentially powerful, might also be what makes it hazardous, the thinking goes. Materials that tiny may be able to move through and affect the human body in ways that larger particles of the same substance do not.

Research into nanomaterials by academia, industry, and the government is ongoing and widespread, Bothun says. The field is a large one, encompassing many different materials, and it is therefore difficult to make any generalizations about the safety of nanoparticles for humans, he says.

"Consumers should be aware of if and how nanomaterials are currently used in their foods, but not overly concerned about problematic nanomaterials," he says. "The issue is that in some cases we don't know if a nanomaterial is problematic because the long-term research hasn't been conducted."

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