

Social media contributes to increased perception of food technology as risky business

December 11 2019

When it comes to food technology, the information shared on social media often trumps the facts put out by the scientific community and food experts, leading to the dissemination of disinformation, "fake news" and conspiracy theories. Nowhere is this more evident than consumers' mistrust of genetically modified organisms (GMOs), despite assurances from the scientific community and food experts. Several studies covering this widespread risk perception of food technologies will be presented during the Visual Cues and Perceptions of Risk: Modern Agriculture in the Era of Social Media symposium on Wednesday, Dec. 11 at the 2019 Society for Risk Analysis (SRA) Annual Meeting at the Crystal Gateway Marriott in Arlington, Virginia.

Food technologies offer agricultural benefits, including greater global [food](#) security and sustainability, yet consumers continue to perceive them as risky and prefer organic and less efficient, traditional techniques, despite assurances from food experts. What many people don't realize is the amount of disinformation that is shared about GMOs in the media for the sole purpose of gaining attention which can be monetized, rather than providing education. Social media campaigns, which also stir up [conspiracy theories](#), rely on this attention which can be quickly obtained by disseminating salacious headlines and compelling information, often lacking in factual accuracy. In other words, disinformation has become a form of currency for many vendors.

Camille Ryan, Ph.D., Bayer Crop Science, used GMOs as a [case study](#) to examine this phenomenon. Her study, "Monetizing disinformation in the attention economy: The case of genetically modified organisms (GMOs)," analyzed 94,993 unique online articles about GMOs and found that a small group of alternative health and pro-conspiracy sites received more total engagement on [social media](#) than media outlet sites. It is no wonder, therefore, that social and political controversy continues to surround the GMO narrative despite the scientific consensus of the safety and benefits of this technology.

A second study by Eleni Galata Bickell, Ph.D., University of Missouri-Columbia, also investigated how genetically modified (GM) crops are portrayed in the media compared to how they are reflected in the [scientific community](#). The study, "The framing and agenda-setting effects of the mass media on the farm-level impacts of GM crops," analyzed more than 300 articles published by the New York Times and the Washington Post between 2000 and 2018. The analysis revealed a huge disconnect between the tone and complexity of the American media and the consensus among scientific media and experts.

"Our research helps us better understand how information can affect our decisions about [food technology](#). Most of us have no direct exposure to how food with new technology is produced. Therefore, we rely on the information sources of the [media](#) to understand our food better," said Galata Bickell.

In a third study Tyler Davis, Ph.D., Texas Tech University, titled "Risk perception and attitudes predict brain response to food technology infographics," used [functional magnetic resonance](#) imaging to understand how parts of the prefrontal cortex (the region of the brain involved in day-to-day cognitive and emotional processes) contribute to how people process infographics about food technologies, and their positive attitudes and risk perceptions.

"Understanding the neural underpinnings of risk perception can help people design more effective communication campaigns aimed at improving attitudes about food technologies. This can lower the cost for bringing technologies to market and possibly reduce consumer rejections," said Davis.

Behavioral science has highlighted the fact that the human mind evolved for action and reaction, not for thinking critically about risk. Therefore, society must develop communication skills to inform people who, by nature, are not prepared to think critically about risk. Brandon R. McFadden, Ph.D., University of Delaware, developed a framework to assist with conversations when critical thinking is necessary. His presentation, "How can behavioral science help with critical thinking about risk?" will explore three dimensions of the framework—diligent clarification, logical reasoning and humble self-reflection—all of which are needed to avoid critical thinking failure.

Provided by Society for Risk Analysis

Citation: Social media contributes to increased perception of food technology as risky business (2019, December 11) retrieved 18 April 2024 from <https://phys.org/news/2019-12-social-media-contributes-perception-food.html>

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