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Q&A: CSPI's Jaffe Talks

GMOs From Farm to Food

Genetically modified organisms (GMOs) have long been a part of our food supply, providing benefits to farmers that are passed through the supply chain. However, confusion surrounding GMOs and their purpose in foods and beverages has caused an uproar among consumers and consumer activist groups. Misinformation has led to concern about the safety of GMOs and GMO ingredients causing consumers to rally against products that contain them. In addition, heated legislation surrounding GMOs—specifically regarding mandatory labeling of products containing them—has heightened consumer awareness, calling on the food and beverage industry to take an active role in educating consumers about GMO ingredients.

Food Product Design spoke with Gregory Jaffe, director, biotechnology project, Center for Science in the Public Interest (CSPI), Washington, D.C., and featured speaker at Ingredient Marketplace, June 2-3, on the topic, diving into why GMO ingredients are important in the supply chain and how companies can work toward absolving consumer concerns surrounding such ingredients.

What role do GMOs play in our food supply?

GMOs play an important role to farmers. The majority of acreage of corn, soybean, cotton and sugar beets are farmed with genetically engineered (GE) seeds. Farmers choose those varieties because they are beneficial to them. Depending on the crop and the trait that has been added, some farmers might reduce their pesticide inputs while others might be able to practice no-till farming. Some GE seeds allow farmers to spray a more environmentally-benign herbicide. There is even evidence that planting certain GE seeds simplifies farming so farmers have more time to earn off-farm income. So the most important role that the current GE crops play in the food supply is at the beginning with the farmers.

After harvest, those GE crops enter the food supply in most cases as a processed food or ingredient in a processed food. For example, GE corn can enter the food supply as corn oil, corn starch, high-fructose corn syrup, and numerous other processed corn products. Similarly, GE soybeans become products such as soybean oil and soy lecithin, while GE sugar beets become table sugar. So any processed food products that have ingredients made from commodity corn, soybeans or sugar beets is likely to have that ingredient made from a GE crop. The food industry estimates that as many as 70 percent of all processed food products in supermarkets contain at least one ingredient from a GE crop. That is not because so many different crops are genetically engineered, but solely because many food products contain at least one ingredient that came from either corn or soybeans or sugar beets.

What should food companies be aware of when it comes to ingredients in the supply chain, as it pertains to GMOs as well as increased demand for non-GMO ingredients?

Obviously non-GMO foods are an increasing category of specialty foods. However, it does take significant effort to eliminate ingredients derived from GMOs in many products, and that may be hard for many companies to do in an economical fashion. While there will continue to be demand for non-GMO ingredients, I do think it will continue to be a small specialty market. Cheerios cereal recently altered two ingredients in its original brand cereal to make that product non-GMO, but all the reports in the press suggest that the change has had no positive impact on product sales.

What are the major consumer misconceptions surrounding GMOs?

When I talk with consumers, I hear three major misconceptions about GMOs. First, many consumers don't know what GMOs are and how genetic engineering compares to other scientific breeding methods. They don't realize that when scientists engineer a crop, they are adding one or two new genes in a very precise way to a crop that already has thousands of genes. They don't understand that this is just one of many different scientific techniques—such as chemical mutagenesis, X-ray mutagenesis, cloning and marker assisted breeding—that scientists have been using for decades to manipulate crop varieties to develop beneficial traits.

Second, consumers don't fully understand how the current GMOs end up in our foods. Many consumers think that many whole fruits and vegetables have been engineered. In reality, the only food crops with commercial GE varieties are corn, soybeans, cotton, canola, sugar beets, squash and papaya. Those crops (with the exception of squash, papaya and sweet corn) enter the food supply primarily as highly processed ingredients, such as corn oil, soybean oil, sugar or high-fructose corn syrup. Consumers also do not realize that some highly processed ingredients are actually biologically and chemically identical to the same non-GE processed ingredient. In other words, corn oil made from GE corn and corn oil made from non-GE corn are identical because to make oil, all the corn's DNA or protein is eliminated (including what was added by scientists when the crop was engineered).

Finally, some consumers incorrectly believe that foods made from the current GE crops are not safe to eat. Actually, there is a strong international consensus from both scientific regulatory bodies, such as the Food and Drug Administration and the European Food Safety Authority, as well as scientific societies, such as the National Academy of Scientists, that the foods made from the current GE crops are safe to eat. Despite what one might read on the internet, for the current GE crops grown in the U.S., there are no food-safety risks.

What should companies be doing to rectify these misconceptions about GMOs?

Food companies need to do two things. First, they need to provide factual information about GMOs and the foods made from them. They need to explain why GE crop varieties are important to farmers and the environment and how they fit into the food supply. Secondly, they need to acknowledge that some of the ingredients used in their foods are made from GMOs. It's important not to hide their use from the public. When you hide something, it suggests that you're concerned about it, or it's something to be worried about. So, don't hide information, but explain it to the consumers in a neutral and factual manner.

Why is it important to correct these misconceptions about GMOs?

Our food system is complex. Many consumers do not know how the crops farmers grow end up on the supermarket shelves in thousands of different products. Every company and person who works in any part of the food chain has a role to play in helping educate the public about how our food gets produced, including the use of GE crops. If companies don't explain the importance of GE crops and their benefits, many consumers will think companies are hiding from this issue and worry that this is something they should be concerned about.

Do you think federal legislation for GMOs will pass this year?

No, I don't think legislation will pass this year. This is a controversial subject. Both the proponents and opponents of GE crops have introduced diametrically opposed legislation on the issue of mandatory labeling of foods made from GE crops. It is unlikely that Congress will take up this debate in 2014.

Do you see any benefits to labeling food and beverage products that contain GMOs? What are the potential disadvantages?

At this time, I don't think there is a lot of benefit to companies labeling products containing GMOs, since the current GE crops provide no obvious consumer benefit. Unfortunately, many consumers don't understand what a GMO is, so providing that information isn't necessarily valuable to them. Instead, without that education, a label with "genetically engineered" or "GMO" on it may sound scary, causing them to avoid that food. In addition, many organizations have provided misinformation to consumers suggesting that the ingredients made from GMOs are harmful. Putting even neutral information about GMOs on food labels might be harmful to a product's marketability because of the misinformation that many consumers may have been exposed to.

What are the challenges facing food and beverage manufacturers that stand behind biotechnology, and plan to continue its use in products?

One challenge is to be transparent and provide information to the consumer about how GMOs are used in their products and that they are safe to eat. That information needs to be provided in a factual manner that is accessible to consumers who want this information for the products they purchase. At the same time, companies need to acknowledge that some consumers may want to avoid GMO ingredients for non-safety reasons and can do that by purchasing other safe products, such as organically labeled foods. This dialogue with consumers, which could be conducted on websites, through product literature, or on product packaging, needs to begin the education process about not just genetic engineering, but more generally about where our food comes from and the role of the many different technologies and people involved. The conversation needs to be not just about the GMO ingredients in a particular product but about GE ingredients in the context of our food supply, including their value to farmers and the environment.

A second challenge to companies using GE ingredients will involve international trade. If companies export products, they need to ensure that they meet any specific GMO-labeling requirements in the importing country. In addition, the GE crop variety that ends up in their food product must have been approved for food use in the importing country. Recently, China has not approved several GE corn varieties being planted by U.S. farmers. Food products exported to China cannot contain ingredients made from those specific GE corn varieties or they will be in violation of Chinese law and refused entry at the receiving port. ■

Gregory Jaffe will present on the topic of biotechnology and the future of the ingredient supply chain at Ingredient Marketplace at Jacob Javitz Center in New York, June 2-3. Ingredient Marketplace, a SupplySide event, is built around the fact that "What's Inside Matters" as consumers seek products that are healthy, safe, effective and sustainable. To register to attend Ingredient Marketplace, visit http://marketplace.supplysideshow.com/attend.aspx.