

## How to change consumer perception of crop biotechnology and GMO foods



Genetically modified (GM) foods for human consumption have long been a subject of [intense public debate](#), as well as academic research.

Despite [the lack of scientific evidence to suggest GM foods are less safe](#) than conventional foods, [previous studies have shown](#) that consumers are reluctant to fully embrace them and are wary about the technology that produces them.

In our upcoming article in the *Journal of Commercial Biotechnology*, we show that consumers' attitudes toward GM foods, their willingness to purchase them and the price they are willing to pay could be significantly improved if GM products had a direct benefit to them personally.

Our findings at the University of Saskatchewan's Edwards School of Business have the potential to change how agriculture biotechnology companies promote their products —while also creating significant value.

Particularly, we found that consumers are willing to accept and pay premiums for GM foods that have value that's personally relevant to them.

In other words, changing the value proposition from industry-centric to consumer-centric may help to mitigate the negatives associated with GM food.

### **Food insecurity is critical**

In 2009, the Food and Agriculture Organization of the United Nations [identified global food security as an increasingly critical issue](#) as the world population grows, and said that meeting the growing demand for food will require agricultural biotechnology. Therefore it's necessary to build widespread consumer support for GM foods.

Creating GM food with direct consumer benefits could play a pivotal role in gaining such support. Not only does promoting direct consumer benefits have the potential to change perceptions, as shown by our study's data, it may also be a profitable endeavour.

We surveyed 750 Canadian consumers on different ways of presenting GM foods.

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The first group of consumers saw ads for GM foods that promoted several industry-oriented benefits that might indirectly appeal to consumers, such as higher yield, less pesticide usage and enhanced global food supply. These messages were similar to those typically promoted by GM food proponents.

The second group of consumers saw ads focusing on direct consumer benefits, such as better taste and enhanced nutrition.

The third group of consumers saw ads for GM foods that promoted both direct and indirect consumer benefits.

The result of the survey showed that, not surprisingly, the participants in the first group were less inclined to buy GM foods even at a price that was significantly lower than comparable non-GM foods.

The consumers who were accepting of GM foods appreciated that GM technology had positive benefits and was creating value. However, they believed that the technology has only benefited the industry, and demanded that a portion of the value is passed onto the consumers.

In contrast, the participants who were presented a value proposition that directly benefited both the industry and consumers reported better attitudes toward GM foods, expressed higher purchase intentions—and they were willing to pay a premium for such products.

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## **Why consumers do, or don't, accept GM foods**

These findings suggest that how consumers assess the value of GM foods to themselves personally, as opposed to solely how or why the food is made, is fundamental to consumers' attitudes, purchase intentions and willingness to pay.

Many previous studies have examined consumer perceptions of GM foods and explored why or why not consumers were reluctant to accept them.

[A 2016 study](#) conducted meta-analyses that reviewed hundreds of prior studies and how consumers' personal characteristics could influence their acceptance of GM food. Those factors included gender (men

might be more likely to accept genetically modified foods than women), education, income (consumers with higher income might be less likely to accept GM foods), prior knowledge and family situations, etc.

In other words, the emphasis has been on figuring out how to change consumers so that they would accept GM foods.

But our research points to the need for the GM industry to change how it's promoting the products, and to begin producing foods that directly benefit consumers. The agricultural biotechnology industry needs to place consumer interests at the centre of their focus, not only at the time of selling their products, but also during the research and development processes.

Indeed, in a [previous University of Saskatchewan study](#), we found that in Canada, consumer-oriented biotechnology companies generally outperform those that aren't consumer-oriented.

## Healthier rice

The idea of a second generation of GM products — the kind that could hold real appeal to consumers — [is now gaining momentum](#).

Earlier this year, [the Canadian government approved the sale of a vitamin-fortified golden rice](#) that contains higher levels of Vitamin A. It's potentially beneficial to those consumers who may suffer from Vitamin A deficiencies.

Nonetheless, promoting direct consumer benefits is not a total panacea.

Even while successfully showing consumers how GM foods can benefit them personally, there were still a substantial portion of the participants in our study (35 per cent to 50 per cent, depending on the products presented) who refuse to purchase GM foods no matter the price.

This indicates that consumer acceptance of GM foods is a complicated matter. There's still a long road ahead to convince shoppers at the grocery stores to consider genetically modified foods as personally beneficial.

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