

Consumers willing to pay premium for healthier genetically modified foods: study

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Wallace Huffman, distinguished professor of economics, shows off some produce enhanced with consumer traits through intragenic means. Huffman's research shows consumers are willing to pay a premium for enhanced produce. Credit: ISU photo by Bob Elbert

Consumers are eager to get their hands on, and teeth into, foods that are genetically modified to increase health benefits – and even pay more for the opportunity.

A study by Iowa State University researcher Wallace Huffman shows that when [consumers](#) are presented with produce enhanced with consumer traits through intragenic means, they will pay significantly more than for plain produce.

The research is published in the current issue of the *Journal of Agricultural and Resource Economics*

Intragenic modification refers to plants that are [genetically modified](#) with genes from other plants within their own species.

Transgenic foods refer to plants that are modified with genes from other species.

Consumer traits are those modifications that are seen as a benefit to the consumer, such as enhanced levels of vitamins. Farmer traits refer to traits that benefit farmers, such as pest and drought resistance.

"What we found was when genes for enhancing the amount of antioxidants and vitamin C in fresh produce were transferred by intragenic methods, consumers are willing to pay 25 percent more than for the plain product (with no enhancements). That is a sizable increase," said Huffman, distinguished professor of economics.

Improving plants by using intragenic methods is very similar to cross breeding plants, a process very commonly used by backyard gardeners trying to improve their irises, and was the main method used by hybrid seed corn businesses prior to genetic modification.

Some plants, however, are difficult to cross breed for a variety of reasons.

There are thousands of types of potatoes, for instance, each having some unique genetic traits. But since they reproduce by using an internal seed or eye of the potato, improving them through cross breeding with other potatoes is difficult.

By using the tools of genetic engineering, the intragenic process allows

plant breeders to improve produce using within-species transfers.

Consumers' acceptance of genetically modified plants is a real turnaround from previous research.

In 2001, Huffman first researched consumers' willingness to pay for transgenic foods. At that time, he showed that consumers would pay 15 percent less for foods made from or containing farmer traits introduced by transgenic methods, compared with produce that was not genetically modified at all.

If there remains any hesitation by consumers to eat genetically modified foods, it is difficult to say, said Huffman.

"There still could be a little bit of negative feelings toward a genetically modified product, but they (consumers) see real value being created in enhanced consumer traits, and they are willing to pay for those enhancements that are introduced by intragenic methods," said Huffman.

It does seem that buying foods made healthier through intragenics does not make consumers uneasy, he said.

Huffman's experiment involved consumers bidding on both genetically modified and non-modified fresh potatoes, tomatoes and broccoli.

The intragenically and transgenically modified products had increased levels of antioxidants and vitamin C.

"The basic idea is that when consumers saw that the intragenic produce had elevated healthful attributes, they were willing to pay more for them," said Huffman.

Consumers were not willing to pay more if those enhancements were

introduced through transgenic methods, he added.

Participants were also given information – positive, negative and neutral, and in combination – on genetic modification from scientific, human, financial, environmental and general perspectives.

The positive information on the food was given from the point of view of the food industry. The negative information was presented from the perspective of environmental groups. The neutral information was given as from the scientific community. The industry and neutral perspectives contained definitions of intragenic and transgenic modifications.

Huffman said that information from the food industry was usually given more weight by consumers than the information presented by environmental groups. The neutral information moderated the negative effect of environmental group [information](#).

Provided by Iowa State University

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