

Consumers choose locally grown and environmentally friendly apples

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When asked to compare apples to apples, consumers said they would pay more for locally grown apples than genetically modified (GMO) apples. But in a second questionnaire consumers preferred GMO apples - that is, when they were described, not as GMO, but as having a Reduced Environmental Impact. The research conducted by University of Illinois economist Michael Mazzocco and Augustana College marketing professor Nadia Novotorova demonstrated that product labeling makes a difference when it comes to consumer acceptance.

Mazzocco says it's about selling the benefits. "When GMO crops were first introduced, people called them 'Frankenfood' and emphasized the laboratory processes used in breeding. The benefit seemed to be for farmers who saved money by not having to spray their crops with chemicals."

The reality is that apples can be bred to be disease-resistant, so they don't have to be sprayed with fungicides and other chemicals 15 to 20 times per growing season. This attribute gives them reduced environmental impact, and that's a benefit consumers can wrap their teeth around, as well as their wallets.

"One thing we learned was that if you're going to get any benefit from technology, you're going to have to communicate the benefits of it," Mazzocco said. "People aren't willing to pay you for the technology just so they can have another attribute. There's an equal trade-off. But, when you don't call it GMO and instead you communicate the benefit to the

environment, it's more than a one-to-one trade-off and consumers are willing to pay more for it."

No apples were tasted, handled or even seen. "In both questionnaires, people rated apples based on a description. We were trying to identify where the trade-offs are between the attributes," Mazzocco said. "People don't want an apple. What they want is the attributes of the apple - nutrition, flavor, color, etc.

"But, an apple also comes with other attributes. Like the guilt from using all of that [diesel fuel](#) from transporting it from the state of Washington to Illinois or the fear of feeding your children what might be Frankenfood," Mazzocco said.

Both surveys began by giving the participants the identical short lesson in apple growing which included information about apple diseases and pests and how disease-resistant apples are developed. One apple is made through laboratory techniques where a naturally occurring scab-resistant gene from an apple was inserted into another variety of apple that's your favorite - the one you would normally buy. This apple that has the gene inserted in a laboratory can reduce apple spraying 15 to 20 times per season in an orchard in the Midwest for an apple grower that's susceptible to apple scab.

"A conventional apple, a non-cloned apple, grown in a typical apple growing region in Washington, Michigan, or New York, probably is not susceptible to apple scab and has fewer sprays. So in order to have a locally grown apple in the Midwest you're going to have to do something about apple scab otherwise you may not have a crop," Mazzocco said.

Given that information, 200 people rated 12 combinations of attributes of apples. For example, one might be \$1.39 a pound, produced far away, and conventionally grown. Another apple might be \$1.59, locally grown,

and GMO. For the second study, a separate set of 200 people's questionnaire described the attribute as "reduced environmental impact" rather than GMO. Everything else was the same.

"Looking at the rankings of all of the combinations of attributes, and the comparison of the weightings of the importance of the various factors - what it boils down to is that people will pay more for reduced environmental impact. When you call it a GMO, there are some who will steer away from it, but on average they're indifferent. They'll trade local for GMO," Mazzocco said.

"We concluded that the benefits of genetic modification are something that consumers can get their arms around. People understand the benefit that with these apples you have fewer fungicide sprays around your neighborhood and your waterways in order to enable locally grown apples - grown in the Midwest."

The study also found that people aged 65 and older have a stronger preference for conventional apples. "When we called it a GMO apple, the people aged 65 and older reacted to that. When you call it reduced [environmental impact](#), they didn't react to it as much and younger people trend towards it.

"The message is that we need to be careful what we label things and to communicate the benefits," Mazzocco said.

More information: Consumer Preferences and Trade-Offs for Locally Grown and Genetically Modified Apples: A Conjoint Analysis Approach appeared in a 2008 issue of *International Food and Agribusiness Management Review*.

Impact of Product Attribute Wording on Consumer Acceptance of Biotechnology Applications in Produce appears in the November 2009

issue of *Journal of Food Distribution Research*.

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