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# Experimental Investigation of Interactions in Willingness to Pay for Certified Organic and Non-Genetically Modified Foods

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Changing consumer demands have the potential to greatly influence commodity production and the competitiveness of the U.S. food system. Two major recent trends within the U.S. food system affecting consumer demand have been the spread of organic foods and the appearance of genetically modified foods. The U.S. government has responded by introducing a labeling and certification program for organic foods, including a non-GM requirement, but not for non-GM foods. Given these government policy decisions and industry response, the only certified method for consumers wishing to avoid GM foods is to buy organic. Part of the organic-food demand as observed in grocery stores may therefore include the demand for the missing non-GM food market, and so it may not accurately reflect consumer preferences. Not having a separate non-GM market may therefore be distorting the food system, incorrectly shifting resources to higher-cost organic production methods.

## Objectives

This research project seeks to investigate consumer interest in organic, genetically modified, and non-genetically modified food markets and the effects of some consumers' desire to avoid GM foods on organic demand. To achieve the overall objective, the project will be broken down into four specific research objectives. The first is to determine consumer willingness to pay (WTP) for non-GM and certified organic foods. Secondly, the research will be used to determine the amount of organic-food demand generated by those wishing to avoid GM foods. The third objective is to see how either of the first two objectives changes between fresh and processed versions of food from the same genetic modification category. The fourth objective involves analyzing the research itself, specifically determin-

ing if the WTP for non-GM food versions stems from the attention the experiment itself brings to the issue.

## Significance

The results of this study would benefit those at all levels of the food system. Starting on the farm level, farmers would have a better understanding of what consumers want and what types of premiums may be possible from either an organic or a non-GM operation. Food companies would know better what new types of products to develop and how to market them. Consumers would perhaps benefit the most from a better, more accurate understanding of their changing food preferences and demand. Additionally, government policy makers and other researchers would benefit since the research can be applied to labeling issues and future experimental design.

## Experimental Plan

The goal of the research is to run 300 people located at different areas through the experiments. Experiments will be conducted on groups of 15 at a time, necessitating 20 sessions. Recruiting for these sessions will be done through a combination of random telephone solicitation and advertisements placed in local media. Recruitment will occur in the northeast region, including Delaware, Maryland, Pennsylvania, New York, and New Jersey. Subjects will each be financially compensated for the opportunity cost of participating in the research.

Both contingent-valuation (CV) and experimental-auction methods will be involved. Specifically, a session will consist of an experimental auction and both pre- and post-experiment questionnaires. The experimental design will consist of two treatment variables: food category and degree of processing. For the former, three categories of food produced using modern biotechnology will be investigated: milk, corn, and potatoes. Degree of processing will

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have two levels: fresh and processed. For the fresh level, the food products used will simply be those just listed, while the corresponding processed food products will be milk chocolate, tortilla chips, and potato chips.

Subjects will first be asked to fill out a CV questionnaire. Open-ended questions regarding willingness to pay for the food items in the study with different production attributes will be presented. Following the pre-questionnaire, the subjects will be asked to participate in a Vickrey uniform price auction. Next there will be a description and explanation of the auction. This will be followed by two practice auctions and a brief presentation to describe GM and organic foods. The actual food auctions will follow. Subjects will be informed in advance that only one auction will be binding. There will be eighteen food auctions divided into groups

of three, one group for each food. While earnings are calculated, subjects will fill out the last questionnaire.

### **Expected Results**

For the first objective, subjects in pilot experiments have been willing to pay a significant premium for non-GM and organic versions over conventional and for organic over non-GM foods. For the second objective, it is expected that the non-GM attribute of organic foods will not be an overriding factor in consumers' WTP. For the third objective, it is expected that premiums will be higher for fresh than for processed foods. Lastly, it is expected that for the fourth objective the indicated WTP will increase with the focus on the GM component.