

Is there consumer demand for certified safer pork?

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Introduction

A number of new product labels for different foods have been developed to assure consumers that food has been produced and handled in a particular manner (e.g. “responsibly grown” apples; “natural” beef). Mechanisms are being developed to enhance safety of pork products, such as the efforts of the Trichina Working Group. Recently the USDA/AMS Quality Systems Certification Program (QSCP) certified a fully integrated pork producer / processor as producing under consistent procedures; some of these procedures relate to food safety. Some pork producers believe that there is market advantage to be gained from enhanced pork safety (1).

If producers are able to improve the safety of pork products and to certify improved safety, a key question for the industry is how much market advantage could be gained. One potential market for a certified safe label is the domestic market among consumers who purchase for at-home consumption. There are many unanswered questions related to this market, including: will consumers pay more for such a label, will consumers increase their consumption of pork because of such labels, and what kind of label will consumers trust?

Pork safety includes both biological safety and residue avoidance. Pork is a potential source of several economically important pathogens(2). These biological hazards can occur at any point along the pork chain, from production, through processing and finally at the consumer end, either in the restaurant or home. Drug residue avoidance is the primary responsibility of pork producers, because this potential hazard enters the food through specific actions by producers. In contrast, biological hazards can be prevented or reduced at any point in the food chain from the farm to the table. Who should play a primary role in avoiding risks from biological aspects of food safety is a point of controversy, because avoiding or reducing risks has costs for producers, processors, and consumers. Avoiding biological risks at the consumer end requires time, and care in preparation, as well as potentially decreasing product quality because products must be more thoroughly cooked. Thus, consumers who are fully informed about food safety risks have incentive to purchase products which will either directly or indirectly decrease their biological risk or decrease the time necessary for preparing products which are still safe.

Food safety perceptions and their impact on consumption patterns is a relatively new area of research focus, and frequently relies on non-market valuation methods. Hayes, et al used experimental auctions to elicit the value of reduced microbial pathogen risk in a meat sandwich (3). They found that subjects were willing to pay between \$0.42 and \$0.86 per meal to reduce the normal risk of microbial pathogens down to a 1 in 100,000,000 risk. Their overall results suggested that an average subject would pay a 15-30% premium per meal for safer food.

Many studies have examined the nutritive value of food, rather than safety hazards. Halbrendt et al examined demand for leaner pork produced (4). They found that consumers would eat more of the leaner pork or would pay more per pound for a reduction of 25 to 50 percent in saturated fat in pork. Respondents with higher incomes were willing to pay more. Midwest respondents were less willing to pay more, and these respondents already consumed more pork than other regions. Their survey also indicated the importance of appropriate labels to indicate how the product is different.

The objectives of the study reported here are to describe some basic consumer attitudes about pork safety as a first step in determining the relationship between perceived pork safety and consumer demand for certified pork.

A priori hypotheses, based on previous studies of food safety, are that:

1) Concern about pork safety is related to willingness to pay or to purchase more pork. Willingness to pay for safer pork or to eat safer pork reflects the value consumers place on avoiding illness. This willingness to pay is the value of the safety characteristic of pork.

2) Consumers place greater confidence in third party certification than they do in self-certification by industry. Given the difficulty of identifying microbial food safety in products, even after they are eaten, we hypothesize that consumers would look for an independent source of verification for a label.

Materials and Methods

A statewide telephone survey of 605 Illinois households by the University of Illinois (Chicago) Survey Research

Laboratory was completed in spring, 1999. The methodology was designed for the profile of respondents to be reflective of the general population of Illinois residents with a small margin of error. The CASES software developed by the Computer-assisted Survey Methods Program at the University of California (Berkeley) was used to assist in conducting the interviews, capturing data real-time, and preventing data errors.

Questions administered included frequency of fresh pork consumption, consumer concerns about pork products and their safety, consumer willingness to pay for or to purchase more of a certified pork product, and consumer confidence in certifying institutions. In addition, the respondents provided socioeconomic and demographic data.

The data were weighted to account for gender, education, age and racial differences of the sample of respondents compared with census data for these factors throughout the state; thus these weighted data should be representative of the general population of Illinois. All summary statistics presented were calculated using SAS (5).

Results

Only a small percentage of respondents did not eat meat, or did not eat pork but did eat other meats. About a quarter of respondents ate pork 1-2 times per month, another quarter ate pork 3-4 times per month, and another quarter ate pork 5 or more times per month.

Illinois consumers were concerned about foodborne illness from microorganisms in pork. Over half of respondents said that they were either very concerned or somewhat concerned about pork safety.

Consumers had more confidence in a food safety label for pork if the product were certified by the U.S.D.A. than if the product were certified by the pork industry. However, almost 10% said that they would not have greater confidence in pork product safety with either group providing certification.

Approximately a quarter of respondents would be willing to pay \$1.00 more per pound for a certified enhanced safety pork chop. Approximately another quarter of respondents would be willing to pay \$.50 more per pound. A third quarter of respondents would be willing to pay either \$.25 or \$.10 more per pound.

Discussion

Our results suggest there is potential for enhanced demand for pork products within the U.S. market through certification programs. Roughly a quarter of Illinois household consumers would be willing to pay an additional

\$1.00 per pound for a certified safer pork chop. This is an increase in retail price of approximately 50%. Only about a fifth of consumers are not willing to pay an increase of even \$.10 with other consumers willingness-to-pay falling in between \$1.00 per pound (the highest amount asked in the survey) and \$.10 per pound increase. Expressed in the market place, this would result in an expanded demand for pork, and improved consumer welfare. The results related to label certification show that there is a role for USDA in fostering a market for certified safer product.

The results for the price premium are high, although they are in the range found by Hayes et al in their experimental auctions. Future analyses will identify the characteristics of consumers willing to pay the premiums of \$1.00 and \$0.50, and how they differ from consumers willing to pay less than \$0.50. Identifying the niche market for a certified safer product will help the industry to capture value from improved food safety.

Some hypotheses regarding the characteristics of the niche market consumers are:

1) Pork safety concern is positively correlated with education, income, and frequency of pork consumption. Education and income are frequently correlated with greater nutrition and safety knowledge, which is hypothesized to influence behavior. Greater income provides greater ability to pay for desirable characteristics like safety. Greater frequency of pork consumption increases the value of safety to the consumer.

2) Pork safety concern is greater among women with children present in the household and among senior citizens. Small children and senior citizens are at greater risk for foodborne illness, and we hypothesize that this risk influences behavior.

The impact for pork producers, or others in the production chain, from this enhanced demand, would depend on the costs associated with production of the certified product. The benefit that might be gained would also relate to who/where along the production chain was able to capture this enhanced value. Benefits might be captured by producers who closely align themselves with particular packers by various mechanisms (for example through contracts). These producers might find it easier to certify their production processes as providing a safer product.

These data relate to only a portion of the market for enhanced safety pork products. First, the small but growing export market demands a high degree of safety for product shipment over long distances and for meeting the competition from other pork exporting nations. This market provides incentives for improving safety. Second, within the U.S., the at-home market is declining relative to the away-from-home market. Third, a large potential market for certified pork products might exist through institutional outlets. Data from this survey of household consumers

cannot be used to assess this potential market. Institutional markets, in particular hospitals, and retirement homes or other locations with people who might be at increased risk for foodborne illness, might represent a large part of the demand for certified product and could have an even more important role in the demand for certified product than household consumers.

Henson and Traill suggest that government intervention in food policy in the UK must be done with care to avoid unnecessary and undesirable costs to society (6). As the focus on food safety and the U.S. food-producing industries comes under increased scrutiny, the intricacies and interrelationships at every level in the pork chain become more important to elucidate. Also, government is playing an increasing role in food safety issues. Simultaneously, regulations have been put in place for benefit-cost analyses within government to justify programmatic changes. Thus, the work on the economics associated with food safety is only beginning.

References

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