

2011 Tomato Industry Fresh Produce Safety Survey Results

North Carolina produces 4,230 acres of tomatoes with a farm gate value of \$115 million (NASS, 2008). National outbreaks associated with tomatoes underscore the issue of food-borne illness and food safety, which pose immediate risks for tomato farmers in the areas of economics, consumer demand and market access. As tomato production is an integral part of agriculture within North Carolina, it is important to gain a better understanding of current knowledge and practices from our growers.

This survey was developed to help address food safety, beginning with field preparation and ending with the consumer's table. This survey assessed the current knowledge and application of practices, using participants' input to further develop an educational program in fresh produce safety. More information about the current program can be found at: www.ncfreshproducesafety.org or by contacting diane_ducharme@ncsu.edu.

This survey was available at the N.C. Tomato Growers Association's Winter Vegetable Conference in 2010 and 2011. It was also made available online. It was sent to the following listservs: ASAP, Growing Small Farms, Local Foods Action Plan, Sustagchatham and NC Farmers Market. In 2010, the survey was electronically available to be taken from May 10 to June 15. There were 53 submissions of the survey in 2010. In 2011, the survey was handed out at the Winter Vegetable Conference on February 16. It was made available electronically from February 15-21, 2011. Ten individuals responded electronically and 10 individuals responded to the hand written survey. In total, there were 73 respondents from 2010 to 2011. Following are summarized results of the survey organized by topic.

Demographic Information

When respondents were asked about what counties they lived in, the respondents listed over 24 counties in North Carolina, from which their opinions were representing. Almost 50 percent of the respondents considered themselves to be "full-time farmers." Over 20 percent of the respondents had been farming 11 to 20 years and another 40 percent had been farming over 20 years. Not only were these respondents full-time farmers, but most had been farming for a majority of their lives and were part of the older generational demographic. Of the participants polled, 46 percent were between the ages of 50 and 64; greater than 20 percent were over the age of 60. Over 73 percent of the participants farmed less than five acres of tomatoes. During the peak harvest, most of the participants (68 percent) have less than five employees.

Seventy-eight percent of participants do not represent a commodity association board. However, the majority of participants represent small-scale farms (less than five acres), which are farmed by an aging population. The majority of participants have internet access. When asked about what types of markets are primarily utilized, the majority of participants responded that it was a mixture of direct and wholesale markets. A unanimous 100 percent of participants said they utilized direct markets as their primary market, while 91 percent utilized wholesale markets. When looking at the breakdown of responses, it is clear that most of the farmers are using a mixture of wholesale and direct sales to market and distribute their tomatoes.

Fresh Produce Safety Knowledge

From this point forward, the survey was geared toward fresh produce safety. Participants were asked to indicate their level of knowledge about fresh produce safety, using the scale of 1 (Don't know anything about this topic) to 5 (Know almost everything about this topic). The results indicated a perceived moderate (44 percent) to high (43 percent) level of knowledge, indicating that participants felt that they knew something about the subject but there was an opportunity to learn more.

The participants were asked to indicate the main areas of potential food safety concerns that dealt with their farm or their packing house. The top two issues as indicated by the farmers were concerns with Good Agricultural Practices (GAPs) or Global GAPs certification (100 percent of participants) and concerns with water (90 percent). Eighty-four percent of participants were concerned with traceability issues, 78 percent were concerned about handling a food safety crisis or outbreak, and 65 percent were concerned about worker hygiene and training. Some of their other concerns were manure, chemicals and microbial testing. Thirty-nine percent of the participants reported not having any concerns, and transportation issues appeared to be the area of least concern for these farmers. Sixty percent of the participants thought that the risk of tomatoes being involved in a food-borne illness outbreak was “low,” while 28 percent thought that it was a “medium” risk.

Irrigation Waters

Forty-seven percent of participants drew their water from wells, while 41 percent used surface water during field operations. During harvest and packing activities, 63 percent of the farmers surveyed drew water from wells, 20 percent drew water from municipal water systems, and 16 percent drew water from surface water. The majority of the farmers (97 percent) had their agricultural waters tested for generic *E. coli*. Eighty-seven percent of the farmers did not perform any other type of microbial testing for their products, water or environmental surfaces. The farmers relied predominantly on *E. coli* testing as their only verification practice.

Worker Health and Hygiene

In addressing their knowledge of worker health and hygiene, farmers were asked about their behaviors on having hand-washing and bathroom facilities available for workers. Seventy-seven percent of the farmers reported having the facilities available for their workers. The farmers were pretty evenly matched when asked about training for their workers. Forty-seven percent of the participants conducted trainings with their workers on proper hand-washing, bathroom use, illness and injuries, break areas and worker hygiene practices. Fifty-three percent of the farmers did not offer such annual trainings.

In addressing the traceability practices of the participants, they were asked if they had performed a mock recall on any of their products. Ninety-percent had not. Sixty-seven percent did not have a traceability program/system that uniquely identified their product to the field and date of harvest. Over half of the participants reported storing their traceability information in forms other than “electronic” and “paper.” In looking at the individual responses, the majority of the participants reported the question not being applicable or that there was no storage of information.

When addressing the transportation of produce, 98 percent of participants reported not having concerns with the shipment of their produce to packinghouses or retail/wholesale outlets.

Good Agricultural Practices

In the final section of the survey, Good Agricultural Practices (GAPs) were addressed along with crisis communication and recall. Seventy-eight percent of the participants did not have a GAPs food safety plan, which holds supporting documentation for an operation. Twenty-three percent of the farms had such a food safety plan. Ninety-four percent of the farmers had not been third-party audited for GAPs certification. Eighty-six percent of participants had not developed or implemented a recall plan on their farms. When asked about crisis communication statements, 82 percent reported not having a statement or plan for their farm in the event of a crisis such as a food-borne illness outbreak, pesticide contamination or injured worker. Ninety-five percent of the farmers reported receiving less than five inquiries a week about their food safety practices from their brokers or end markets.

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