Colloquium Papers and Authors

Presiding: Penelope Perkins-Veazie

Human Pathogens and Fresh Produce: Prevention and Damage Control: Introduction to the Colloquium

Penelope Perkins-Veazie

Case Studies in Foodborne Illness in Florida from Fresh Produce

Roberta M. Hammond, Dean Bodager, Kathleen V. Ward, and Alan Rowan

Produce Safety and the Potential for Foodborne Disease: A Public Health Analysis

Sarah Delea

A Case Study of Salmonellosis Associated with Consumption of Fresh-market Tomatoes and the Development of a Hazard Analysis Critical Control Points (HACCP) Program

James W. Rushing

Food Safety and Produce Operations: What Is the Future?

L.R. Howard and A.R. Gonzalez

Human Pathogens and Fresh Produce: Prevention and Damage Control: Introduction to the Colloquium

Penelope Perkins-Veazie¹

*U.S. Department of Agriculture—Agriculture Research Service, South Central Agricultural Research Laboratory,
Lane, OK 74555*

A few years ago, food safety in fresh produce was discussed primarily in terms of pesticide residues. The assumption was that human pathogens just weren't found on fresh fruits and vegetables, at least not in the United States and Canada, where potable water and chemical fertilizers are used for most production. Suddenly, the produce industry found itself caught up in a new definition of food safety, that of the human disease-causing pathogens, that have plagued the dairy and meat industries. The assumption has been that the pH of fruits and vegetables generally is too low to support the growth of human disease-causing pathogens (Beauchat, 1996). The outbreaks of *Escherichia coli* O:157:H7 in nonpasteurized apple juice and cider, and the growth of *Salmonella* on tomatoes (*Lycopersicon esculentum* Mill.), indicate the need for more vigilant attention to production and handling practices. While the incidence of food pathogen outbreaks in fresh produce is still very low compared with that in other foods, the

media attention focused on each new event sparked a new wave of consumer fear about the safety of agricultural commodities.

Where did these organisms come from? Several theories have been advanced. One is that microbes have evolved to more pathogenic forms or to forms that can now survive under conditions that previously checked growth, like refrigeration and acidic substrates (Thayer and Reykowski, 1999). Changes in production practices and increased numbers of people handling the same produce may be other factors (Thayer and Reykowski, 1999). The United States and Canada supposedly have the safest food supply in the world. Certainly, this remains true, but the amount of negative publicity surrounding an outbreak can be devastating for both the individual producer and the industry as a whole. The intent of this colloquium is to better understand how these outbreaks occur, how illnesses are documented and traced back to a source, and how steps can be taken at the grower level to minimize the potential for contamination of fresh produce by pathogens causing disease in humans.

Literature Cited

- Beauchat, L.R. 1996. Pathogenic microorganisms associated with fresh produce. *J. Food Protection* 59:204–216.
Thayer, D.W. and K.T. Reykowski. 1999. Developments in irradiation of fresh fruits and vegetables. *Food Technol.* 53:62–65

Received for publication 7 Feb. 2000. Accepted for publication 8 June 2000. The cost of publishing this paper was defrayed in part by the payment of page charges. Under postal regulations, this paper therefore must be hereby marked *advertisement* solely to indicate this fact.

¹E-mail address: pperkins-usda@lane-ag.org