

# JOURNAL OF ANIMAL SCIENCE

*The Premier Journal and Leading Source of New Knowledge and Perspective in Animal Science*

## **The real story about food safety**

C. L. Kastner

*J Anim Sci* 1995. 73:2741-2743.

The online version of this article, along with updated information and services, is located on the World Wide Web at:  
<http://jas.fass.org>



**American Society of Animal Science**

[www.asas.org](http://www.asas.org)

# The Real Story About Food Safety<sup>1,2</sup>

Curtis L. Kastner

Department of Animal Sciences and Industry, Kansas State University, Manhattan 66505-0201

**ABSTRACT:** Students should be thoroughly aware of the safety issues that affect the food industry and we should be prepared to summarize the issues in our classes. Food safety covers areas including nutrition, chemical residues, physical contaminants, and food-

borne diseases. The real and perceived issues relating to each of these areas are summarized along with thoughts of how to address those issues. The information could be used to initiate classroom discussions about food safety and enhance understanding.

Key Words: Teaching, Food, Safety, Chemicals, Pathogens

J. Anim. Sci. 1995. 73:2741-2743

## Introduction

Most people recognize that food safety covers a variety of areas including nutrition, chemical residues, physical contaminants, and food-borne diseases (bacteria, yeasts, molds, viruses, and parasites). The "real" and "perceived" issues relating to each of these areas have a dramatic impact on the image of animal agriculture. Both types of issues must be addressed. The purpose of this paper is to summarize the status of each of the areas of food safety.

## Issues

Animal products are very nutrient-dense and provide, per calorie, significant percentages of dietary requirements for essential amino acids, biologically available iron, zinc, B vitamins, and other nutrients. The most reasonable recommendation from a dietary standpoint for normal, healthy individuals is to eat a variety of foods in moderation. Most nutritionists would agree that animal products should be part of the consumption mix.

Consumers frequently perceive chemical residues as being the most important food safety issue. However, violative residue levels for drugs and pesticides in 1991 were less than .26% of the red meat and poultry

samples tested. Chemical residues from animal and facility treatment are less of a health hazard than naturally occurring toxicants in the food supply. The industry and regulatory agencies need effective testing procedures and monitoring programs to demonstrate that residues are not problems or, in those cases in which violative residual levels are detected, to initiate actions to correct the situation (American Meat Institute, 1993).

The potential for physical contamination is always a concern to the food industry. Existing safety measures for controlling physical contaminants are reasonably effective. For example, metal detectors minimizing the incidence of contaminated products before they reach the consumer. This area is normally less visible as a food safety issue than nutrition, chemical residues, and food-borne disease.

The most costly safety issue relates to food-borne diseases. The United States' food supply is among the safest in the world. Still the cost of food-borne disease reaches over 20 billion dollars annually in the United States. Most cases of food-borne disease are traced to improper handling and preparation at the retail, food service, and home levels, and not to the processor (American Meat Institute, 1993). However, enhanced food safety practices (i.e., pathogen reduction) at the processor level can facilitate subsequent safety efforts. Such efforts need to consider where the problems occur most frequently and what needs to be done to help ensure wholesomeness. For example, more extensive safety training and evaluation of food service personnel may be among the most fruitful safety efforts. Additionally, those food service establishments that can demonstrate progress in this area will probably have a competitive advantage. Consumers will patronize establishments that verify that their employees are properly trained.

<sup>1</sup>Presented at a symposium titled "Animal Agriculture's Image: Issues of Concern to Society" at the ASAS 85th Annu. Mtg., Spokane, WA.

<sup>2</sup>Contribution no. 94-82-A from the Kansas Agric. Exp. Sta., Manhattan.

Received September 22, 1993.

Accepted March 29, 1995.

Most of these areas of food safety have reduced the consumption of animal products. Food Safety must be addressed for the accountability and well-being of animal agriculture and the nutritional needs of the population. What can be done to address concerns about the safety of animal products? The following summarizes a number of issues that affect the real and perceived issues relative to food safety.

The recent Food Animal Integrated Research (FAIR) '95 meeting was designed to establish research priorities for food animal agriculture. Communication was one of the priorities listed along with research needs (FASFAS and FFAA, 1993). The following thoughts came from the FAIR '95 meeting and discussions with food safety communication specialists, regulatory personnel, researchers, and industry personnel.

1. We need to assist in developing factual, positive, educational messages for consumers about animal agriculture. Most of our resources are spent responding to negative issues. Positive, educational messages are not as frequently used by some of the media as are the negative and sensational. However, this must not keep animal agriculture from seeking every opportunity to work with communication specialists to communicate a fair message about animal agriculture. Agriculture should also be willing to recognize problem areas and outline resolutions to those problems. The livestock and animal products industry should consider putting additional efforts into communication.
2. We need to communicate that consumers play a critical role in ensuring food safety and need to assume a significant portion of the responsibility for food safety. Then we may be able to communicate difficult messages such as there is no such thing as "zero" risk or absolute safety. The real story about food safety cannot be effectively communicated to uninformed consumers. We have failed to teach the most recent generations about proper handling and preparation of food and that has complicated the food safety picture, particularly in the home. Few pre-college students are exposed to good food handling practices and the nutritional benefits of animal products. Lack of understanding not only affects handling and preparation practices, but also perception. For example, if consumers don't understand food, then their perception of its safety and nutritional value will not be as good as it would be if they are informed. Additionally, uninformed consumers are more susceptible to misinformation. We should consider structuring education to address and regain some lost ground relative to a topic that affects all of us: the safety of what we eat.
3. Some individuals will not change their position as a result of educational efforts. These individuals

see animal agriculture as having a major negative impact. Food safety may not be their primary agenda, but food safety issues will help them enlist others in their cause. Additionally, these individuals are not often concerned about presenting factual information. To achieve their end they misrepresent facts to support a pre-set agenda. On the other hand, animal agriculture leaders need to also re-evaluate those production and processing practices that are questionable or highly visible and viewed most negatively. The long-term impact on food safety and the status of the industry of those practices would be determined.

Additionally, the animal agriculture industry needs to eliminate commodity-oriented conflicts and work toward a common end: food safety for the consumer and well-being of animal agriculture. Conflict dilutes the strength of the industry and leads to consumer confusion. One commodity area should not advance its cause at the expense of another, or let mis-information be perpetuated. The trend for more food companies to be involved with more than one commodity can help minimize this difficulty.

The scientific and educational community can play an important role in reducing commodity area conflicts and working toward a common end for animal agriculture. Additionally, it can help provide scientific input required to evaluate the effectiveness of safety regulations, Hazard Analysis Critical Control Point requirements, and industry compliance with scientifically valid regulations. Procedures and requirements for food safety regulation must be meaningful, uniformly administered, and realistically complied with by industry. In short, the industry, scientific and educational community, and regulatory agencies must work in concert to ensure food safety for the consumer and industry competitiveness.

Scientific and educational groups are working to meet consumer and industry food safety needs. For example, scientists at the University of Arkansas, Iowa State University, and Kansas State University are involved in the Food Safety Consortium. This Consortium is funded by the Cooperative State Research, Education and Extension Service of USDA and focuses on poultry, pork, and beef product safety at the respective universities.

The Consortium efforts include 1) risk assessment, 2) investigation of technologies that improve safety and help manage food safety risks, 3) development of techniques needed to detect chemical and microbial hazards, 4) technology transfer, 5) risk communication and education, and 6) interaction with industry, regulatory agencies, and consumers to facilitate food safety efforts and the image of animal agriculture.

Our efforts at Kansas State University are complemented by on-campus interaction. Extension communication, food science, veterinary medicine, and agricultural economics, scientists and educators make up the Food Safety Forum at Kansas State University.

The forum interacts on a regular basis to address food safety issues.

I have identified some issues and potential approaches to addressing those issues that will impact real and perceived food safety concerns. I hope this summarizes ideas that will facilitate our understanding and actions relative to resolution of food safety issues. These ideas can also be used as a basic summary approach to introducing food safety in our classrooms. Our students must be aware of all issues that target their industry.

### Implications

I have identified nutritional, chemical, physical, and microbial issues and some potential approaches to

address those issues that do affect real and perceived food safety concerns. Ideas relating to communication, industry cooperation, scientific input, and education that will facilitate our understanding and actions relative to resolution of food safety introducing food safety in our classrooms. Our students must be aware of all issues that target their industry.

### Literature Cited

- American Meat Institute. 1993. Issues Briefing Book. American Meat Institute, Arlington, VA.
- FASFAS and FFAA. 1993. Linking Science and Technology to Societal Benefits: Research Priorities for Competitive and Sustainable Food Production from Animals. Federation of American Societies of Food Animal Science and Forum for Animal Agriculture, Champaign, IL.