

ARS National Research Program for Food Safety

The ARS National Research Program for Food Safety (National Program #108, described on the World Wide Web at www.ars.usda.gov/foodsafety) seeks ways to assess and control or eliminate potentially harmful food contaminants at every step of the food production cycle. ARS provides scientific information and technology to producers, manufacturers, regulatory agencies, and consumers to support efforts to provide a secure, affordable, and safe food supply.

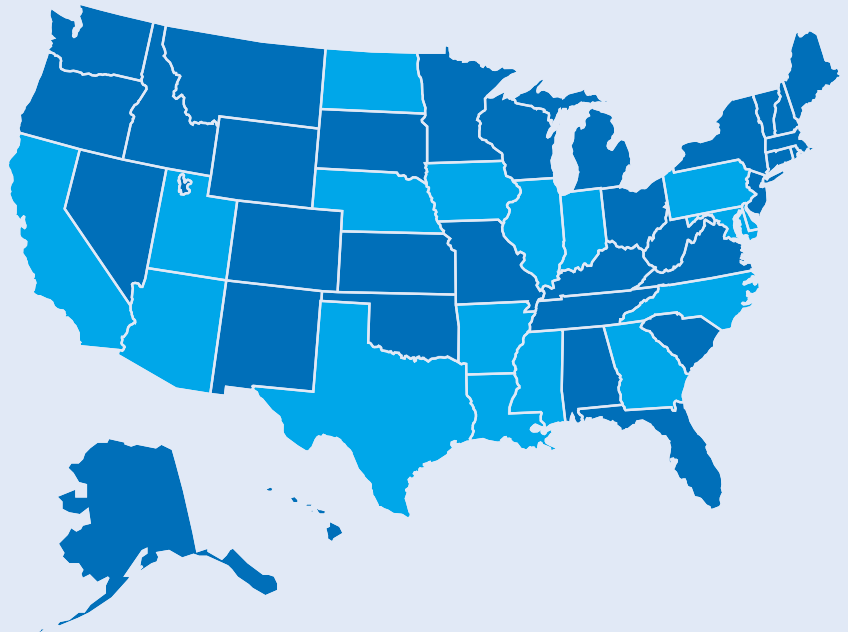
Food contaminants include both introduced and naturally occurring pathogenic bacteria, viruses, and parasites; toxins and non-biological-based chemical contaminants; and mycotoxins and plant toxins.

ARS's research approach considers food safety as a single continuum rather than a series of discrete steps. On-farm practices with animals and crops are seen as directly bearing on the potential for contamination later in the production process. The agency also works to identify and mitigate specific critical points of possible contamination.

Within the food production/food safety continuum, ARS emphasizes four major interrelated research areas:

- developing new and improved practices to minimize the risk of pathogen and toxin contamination, including those that improve animal health and well-being
- developing a better basic understanding of the behaviors of potential contaminants
- monitoring critical foodborne pathogens
- carrying out research needed to support regulatory agencies and provide a strong scientific basis for decisionmaking.

 = States Where ARS Does Research in Food Safety



Many of the agency's research projects serve more than one of these goals at a time.

And since food safety and food security are global issues, ARS's research program involves both national and international collaborations through formal and informal partnerships.

Economic practicality is also getting increased consideration these days throughout ARS research. The agency's scientists are encouraged to consider economic costs as they develop better methods of reducing potential for contamination. An effective system is not likely to be adopted if it substantially increases costs for producers and, ultimately, consumers.

Even though there are separate animal and plant focuses to food safety,

the research is closely coordinated and programatically linked. Consumers want safe food—whether of plant or animal origin. There are also overlapping issues and technologies that concern both types of foods.

ARS is taking a strong “-omics” approach—genomics, proteomics, metabolomics—to food safety research. These technologies will lead to a fuller understanding of pathogens and their ability to interact with host animals and crops and will give rise to better tools for controlling contamination. ★