Since it was introduced, this nation's beef quality assurance program has measurably improved safety, helped reduce chemical residues in beef and given producers new models for quality production.

When the program started in the early '80s, 1-2% of beef had chemical residues of some kind. The most recent U.S. Department of Agriculture tests conducted in 2008 show chemical residues down to .00007% in beef cattle, said Dee Griffin, University of Nebraska-Lincoln feedlot veterinarian.

"It is now clear that educational efforts by Cooperative Extension and the beef industry over the last 10 to 15 years has paid off in measurable reductions in chemical residues in meat," said Dave Smith, UNL dairy/beef veterinarian.

In the BQA program, federal government agencies supply regulations and data, while Cooperative Extension at land-grant institutions and commodity groups help with dissemination and education. The intended result is that producers lead quality initiatives that benefit their customers.

The BQA mission is to maximize consumer confidence in and acceptance of beef by focusing the producer's attention to daily production practices that influence the safety, wholesomeness and quality of beef and beef products through the use of science, research and education initiatives.

"Much of the UNL Extension mission of beef education comes from the producer-led educational programs of the beef quality assurance program. These programs are then carried out by producers and also work with the commodity groups," Smith said.

For example, as Smith promotes a program to improve the health of cattle or the safety of beef, his work also supports the BQA program.

In addition to residues showing up in food, the program also addresses other issues, such as tenderness, biological hazards, food safety and how cattle are handled.

Quality assurance programs for all livestock were driven by the USDA's Food Safety and Inspection Service for residue control.

This effort stemmed from a high percentage of vegetables with chemical residues in the 1980s. In addition to beef containing 1-2% chemical residue, 4% of pork also had chemical residues of some kind.

With 33 to 35 million head of cattle in the United States, 8 million of those in Nebraska, 1-2% of beef with chemical residue was unacceptable, Griffin said.

The FSIS, with the organization of Cooperative Extension at the nation's universities, along with commodity groups and others led the effort to fix the problem.

Within two years, those involved knew where the chemical residues were coming from: antibiotics.

Griffin said they found out that producers were giving the correct dose of antibiotics, but at maximum amounts. Amounts were reduced and producers also started following withdrawal periods that ensure antibiotics are not in the animals' system when they are processed for food.

"Once we learned that, we had to teach it to everyone across the world," Griffin said. "The Cooperative Extension service became a way to get it out."

In addition, veterinarians, producers and others came up with a very simple six-point system that not only dealt with antibiotics, but anything that could potentially cause a defect. This program is followed in 47 states.

These six points:

- make sure animals are in perfect health and don't get sick;
- make sure feed is clean and not contaminated;
- make sure products used on cattle, such as antibiotics or vaccines, are administered properly;
- concentrate on animals that need special care, such as those that are sick;
- have sick animals evaluated by a nutritionist or veterinarian, following the proper withdrawal time on antibiotics;
- keep accurate records.

USDA tests all cattle, pigs, chickens, milk, eggs, ducks and other animals randomly for a broad spectrum or environmental contaminants like lead, Griffin said. In other meats, like pork and chicken, the residue percentage is zero.

"If you eat a pork chop or eat at KFC, you will never bite into any residue of any kind," Griffin said. "And we aren't done (with the beef industry) as the only acceptable number is all zeroes."

Griffin said it is important that the public is educated about agriculture. In 1950, 30% of Americans were directly involved in agriculture. Today that number is fewer than 2%.

Ultimately, the BQA program is based on the ethics, principles and practices of individual producers.

"We need to make sure everything we do produces a safe and wholesome product the way Mother Nature intended it to be," Griffin said.