

What is the National Residue Program?

The National Residue Program (NRP) is a testing program to control veterinary drug, pesticide, and environmental contaminant residues in domestic and imported meat, poultry, and egg products. Established in 1976, the program has been administered by the Food Safety and Inspection Service (FSIS) of the United States Department of Agriculture (USDA) in conjunction with the Environmental Protection Agency (EPA) and the Department of Health and Human Services' Food and Drug Administration (FDA).

EPA and FDA have statutory authority for establishing residue tolerances and ensuring compliance with tolerances. FDA establishes tolerances for veterinary drugs, food additives, and environmental contaminants such as lead or arsenic. EPA sets tolerance levels for registered pesticides such as ivermectin. FSIS tests meat, poultry, and egg products to verify that these tolerances are not exceeded.

The NRP is designed to provide a structured process for identifying and evaluating compounds of concern by production class, the capability to analyze for compounds of concern, appropriate regulatory follow-up regarding violative tissue residues, and collection, statistical analysis, and reporting of the results of these activities.

As part of the Hazard Analysis and Critical Control Point (HACCP) inspection system, slaughter and production establishments are required to identify all chemical residue hazards that are reasonably likely to occur and develop a verification of residue control to guard against them. A verified and stringent chemical residue prevention program is essential to foster the prudent use of veterinary drugs and pesticides in food animals.

How does the program work?

The range of chemical compounds evaluated for

inclusion in the various NRP sampling plans is comprehensive. It includes approved and unapproved veterinary drugs, pesticides that may appear in meat, poultry, and egg products, and other xenobiotic and naturally occurring compounds that may pose a potential human health hazard. A violation in a production class (food animal or egg product) occurs when a chemical residue is detected and the residue is in excess of an established tolerance.

Samples are collected from healthy-appearing animals or from suspect animals (e.g. animals showing signs of an injection site, show animals, etc.). Samples are often taken from organ tissues (typically kidney and liver) because many residues concentrate in organs which make them easier to detect. Because of this concentration effect, FDA often bases its tolerances for veterinary drugs upon the levels found in the kidney or liver. For suspect animals, their carcasses are subject to retention and condemnation if a violative level of a chemical residue is found. FSIS notifies FDA of the violation and assists in obtaining the names of producers and others involved in selling the animal.

FDA and state agencies follow up on known violators and if a problem is not corrected, subsequent FDA visits could result in enforcement action, including prosecution. FSIS posts a Repeat Violator List on its Web site, which lists the names and addresses of parties FDA has determined are responsible for more than one residue violation in a 12-month period. The list provides helpful information to producers and processors working to avoid purchasing animals that may contain illegal levels of residues and serves as a deterrent for violators.

Scheduled sampling plans consist of the random sampling of tissue from healthy-appearing food animals. The development of scheduled sampling plans includes the determination of compounds that are a food safety concern, the use of algorithms to rank the selected compounds, pairing these compounds with appropriate production classes, and establishing the number of samples to be collected. The Surveillance Advisory Team (SAT) determines the compound/production class pairs. The FSIS Chemical Residue Risk

Branch (CRRB) determines the number of samples to be collected by employing statistical analysis techniques.

In the 2006 NRP, sample sizes of either 230 or 300 animals were employed for each compound/production class pair. Applying sampling rates of 230 and 300 per production class population assures a 90 percent and 95 percent probability, respectively, to detect residue violations if the violation rate in the population is greater than or equal to one percent. CRRB has adopted a sample size of 300 as a public health standard ensuring that with 95 percent probability, residues are detected if they exist at a rate of greater than or equal to one percent. This sample size and resulting violation data are used to verify two types of process controls including verification that industry's process controls meet this public health standard for the compound/production class pairs being tested and verification that the establishments' HACCP plan effectively control residues. Finally, reviews and final adjustments to these sampling plans are made by FSIS senior management, FSIS laboratory staff, FDA, and EPA.

What about foreign establishments?

For imported meat, poultry, and egg products, foreign countries must establish and maintain inspection systems and residue control standards that are equivalent to domestic systems. These countries undergo an extensive review process before they are eligible to export into the United States. Reinspection of product at the port of entry is to ensure that the exporting country is meeting the inspection standards of the United States.

Reinspection of products is performance-based, which means that better-performing foreign establishments are subject to less frequent reinspection by FSIS inspectors at ports of entry. All shipments are reinspected for transportation damage, labeling, proper certification, general condition, and accurate count. Performance-based residue analyses on imported meat, poultry, and egg products are not limited to just those compounds included in the domestic residue program. Decisions about product acceptability are based on U.S. tolerances or action levels.

When violative results are reported, the product

must be exported from the United States, destroyed, or converted to animal food if an appropriate approval is received from FDA. However, if violative results are reported, imported product bearing the U.S. mark of inspection will not be eligible for export from the U.S.

What are the benefits of the program?

The NRP is designed to detect endemic problems. NRP can detect the presence of a particular violative compound if it is in one percent or more of the population. Tolerances are set with an extreme safety margin to ensure that meat entering commerce does not contain violative residues.

In 2008, there were 17,876 domestic scheduled samples and 135,552 inspector-generated samples taken from all production classes of livestock to test for the presence of veterinary drug, pesticide, and environmental contaminant residues. There were 7,941 domestic scheduled samples and 125,587 inspector-generated samples taken for bovine animals alone in 2008. The overall percentage of violations was 0.89% across all production classes of bovine animals. The detail of all beef production classes is found in the following chart:

Production Class	Number of samples	Number of violations	Percent violations
Beef cows	6,083	54	0.89
Bob veal	33,708	294	0.87
Bulls	1,223	5	0.41
Dairy cows	81,230	791	0.97
Formula-fed veal	2,087	7	0.34
Heavy calves	1,257	16	1.27
Heifers	2,847	6	0.21
Non-formula-fed veal	930	5	0.54
Steers	4,158	11	0.26

In 2009, an expected 21,275 domestic scheduled samples were taken which is an increase in sampling rate from 2008 of almost 16% to ensure the safety of the food supply.

Helpful Links

American Meat Institute
<http://www.meatami.com>