

Menu



Related Topics: Pesticide Tolerances

Setting Tolerances for Pesticide Residues in Foods

Pesticides are widely used in producing food. These pesticides may remain in small amounts (called residues) in or on fruits, vegetables, grains, and other foods. To ensure the safety of the food supply for human consumption, EPA regulates the amount of each pesticide that may remain in and on foods. This Web page briefly describes how EPA sets limits, called tolerances, for pesticide residues in foods and animal feeds.

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Pesticide Registration is the First Step

The term pesticide includes many kinds of ingredients used in products, such as insecticides, fungicides, rodenticides, insect repellants, weed killers, antimicrobials, and swimming pool chemicals, that are designed to prevent, destroy, repel, or reduce pests of any sort. Before a pesticide may be marketed and used in the United States, EPA evaluates the proposed pesticide thoroughly to ensure that it will not harm human health or the environment. Pesticides that pass this evaluation are granted a license or "registration" that permits their sale and use according to requirements set by EPA to protect human health and the environment.

More information about:

- Ingredients used in pesticide products
- Pesticide registration

EPA Sets Tolerances as Part of the Food Safety Equation

Before allowing the use of a pesticide on food crops, we set a tolerance, or maximum residue limit, which is the amount of pesticide residue allowed to remain in or on each treated food commodity. Actual residues are unlikely to exceed this level when a pesticide is applied according to label directions. The tolerance is the residue level that triggers enforcement actions. That is, if residues are found above that level, the commodity will be subject to seizure by the government.

In setting the tolerance, we must make a safety finding that the pesticide can be used with "reasonable certainty of no harm." To make this finding, we consider:

- The toxicity of the pesticide and its break-down products.
- How much of the pesticide is applied and how often.
- How much of the pesticide (i.e., the residue) remains in or on food by the time it is marketed and prepared.
- All possible routes of exposure to that pesticide (residues on each crop use, as well as exposure from drinking water and residential exposure).

We perform dietary risk assessments to ensure that all tolerances established for each pesticide are safe. These assessments account for the fact that the diets of infants and children may be quite different from those of adults and that they consume more food for their size than adults. We address these differences by combining survey information on food consumption by infants and children with data on pesticide residues to estimate their exposure from food. We also estimate exposure of other age groups such as women of reproductive age, ethnic groups and regional populations.

We then combine information about pesticide exposure (from food, drinking water and residential uses) to infants, children and other subgroups with information about toxicity to determine potential risks posed by pesticide residues. If risks are unacceptable, we won't approve the tolerances.

The tolerance applies to food imported into this country, as well as to food grown here in the United States.

Tolerances are not Required for Some Products

Some pesticides are exempted from the requirement to have a tolerance. We may grant exemptions in cases where the exemption is found to be safe. That is, we must review toxicity and exposure data the same as for tolerance setting.

Other Agencies are Involved

Several government agencies enforce EPA's pesticide tolerances in food.

- The Food and Drug Administration (FDA) tests food produced in the United States and food imported from other countries for compliance with these residue limits.
- State enforcement agencies also check foods produced in this country.
- The U.S. Department of Agriculture (USDA) tests meat and milk.

- USDA and FDA have programs designed to develop statistically valid information on pesticide residues in foods. They provide this information to us to use in our risk assessment for pesticides.
 - Pesticide Data Program (USDA)
 - Food and Drug Administration residue monitoring data

If USDA staff detect violations of tolerances in their data collection program, they notify FDA.

Tolerance Setting Requires Numerous Scientific Studies

Pesticide companies, or registrants, must submit a wide variety of scientific studies for review before EPA will set a tolerance. The data are designed to identify:

- Possible harmful effects the chemical could have on humans (its toxicity).
- The amount of the chemical (or breakdown products) likely to remain in or on food.
- Other possible sources of exposures to the pesticide (e.g., through use in homes or other places).

All of this information is used in our risk assessment process. The risk assessment includes consideration of:

Studies about Pesticides in Food

Studies to determine potential residues in food include:

- Field trials, which are studies of residues found on crops grown in the field when pesticides are applied using the highest rate allowed by the pesticide product label.
- Studies of residues in processed foods (e.g., apple juice, tomato paste).
- Data on residues in animal products if livestock are exposed directly or through their feed.
- Monitoring data, such as from the Pesticide Data Program.

- The amounts and types of food people eat.
 - Food consumption by infants and children is specifically considered.
- How widely the pesticide is used (that is, how much of the crop is actually treated with the pesticide).
- Information on chemistry, toxicity, and exposure.

We use data on what foods people eat and the quantity they eat, collected through the National Health and Nutrition Survey (NHANES). Through these evaluations, we ensure the overall safety of proposed pesticide uses, as required by FQPA.

More information on food consumption data:

- National Health and Nutrition Survey
- Food Commodity Intake Database

In addition, there must be a practical method for detecting and measuring levels of the pesticide residues so regulatory officials can ensure that any residues are below the level found to be safe.

See the OECD calculator, used in the numerical portion of the tolerance-setting process.

Tolerances and Exemptions are Published in the Federal Register

Before we set a tolerance or grant an exemption, the public has an opportunity to comment on proposed new pesticide tolerances. We publish a notice in the Federal Register announcing the receipt of a petition for a tolerance or exemption. This is called a *Notice of Filing*. This notice includes a summary by the petitioner. A public comment period follows these notices.

After reviewing public comments and all the scientific data, we make a decision regarding the new tolerance or exemption and announce it in the Federal Register. This announcement includes our assessment of risks posed by the pesticide and the safety finding that allows establishment of the tolerance or exemption. A 60-day period for filing objections and hearing requests is provided after publication of the tolerance.

More information on public notices about pesticide tolerances.

The list of tolerances and exemptions is compiled in the Code of Federal Regulations (CFR), Chapter 40, Part 180. The CFR is revised once a year, in July. Therefore, during the year, information on new or changed tolerances is available from the Federal Register notices or by accessing the electronic CFR (e-CFR).

More information on finding tolerances.

Tolerances are published in the:

- Federal Register - publishes new tolerances and changes to tolerances
- Code of Federal Regulations (CFR)

For More Information

Information on pesticides and their toxicity is available from the National Pesticide Information Center [Exit](#) at 1-800-858-7378.

EPA's Risk Assessment Process for Tolerance Reassessment

Last updated on November 18, 2015

