



Basic Information on Pesticides --EPA's Approach to Reducing Pesticide Risk --

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The following information comes from the U.S. Environmental Protection Agency (EPA) website: <http://www.epa.gov/pesticides/>. The bullets below are intended as a quick overview. Please refer to the links for further valuable information.

- A **pesticide** is any material intended to prevent, destroy, repel, or mitigate any pest, which is defined as a living organism that occurs where it is not wanted or that causes damage to crops, humans, or other animals (<http://www.epa.gov/pesticides/about/>). By U.S. law, plant regulators, defoliants or desiccants are also considered pesticides.

- The **Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)** requires that EPA evaluate any new pesticide before it can be marketed and used in the United States to assure that its use will not pose unreasonable risks of harm to human health and the environment. This process involves an extensive review of health and safety information (http://www.epa.gov/pesticides/biopesticides/reg_of_biotech/eparegofbiotech.htm).

- The **Environmental Protection Agency (EPA) registers all types of pesticides**, including chemical pesticides (e.g., organophosphate pesticides, carbamate pesticides, organochlorine insecticides, pyrethroid pesticides, etc.) and biopesticides (see definition below) (<http://www.epa.gov/pesticides/about/types.htm>).

- The EPA gives priority in its registration program to pesticides that meet the **Reduced Risk Criteria** by having low-impact on human health, low toxicity to non-target organisms (i.e., birds, fish and plants), low potential for groundwater contamination, lower use rates, low pest resistance potential, and compatibility with integrated pest management. The goal is to quickly register commercially viable alternatives to riskier conventional pesticides and to ensure these **Reduced Risk Pesticides** are available to growers as soon as possible (<http://www.epa.gov/opprd001/workplan/reducedrisk.html>).

●Organophosphate (OP) pesticides are a group of pesticide that affects the functioning of the nervous system in insects as well as humans. The EPA made OP pesticides one of the first priority group of pesticides to be reviewed under the Food Quality Protection Act.

(<http://www.epa.gov/opprd001/workplan/reducedrisk.html>).

●**The Reduced Risk Program** does not apply to biological or antimicrobial pesticides, which go through separate review and regulatory decision-making processes.

●**Biopesticides** are derived from natural materials such as animals, plants, bacteria, and certain minerals. There are three major classes of biopesticides:

(1) **Microbial pesticides** have a microorganism (i.e., a bacterium, fungus, virus, or protozoan) as an active ingredient. They can control a broad range of pests, but each separate active ingredient is relatively specific. The most common example of a microbial pesticide is *Bacillus thuringiensis* (Bt).

(2) **Plant-Incorporated-Protectants (PIPs)** are pesticidal substances that plants make from genetic material that has been added to the plant. For example, the gene for the protein made by *Bacillus thuringiensis* can be inserted into a plant's own genetic material and the plant then makes the substance that destroys the insect larvae. The protein and its genetic material, but not the plant itself, are regulated by the EPA.

(3) **Biochemical pesticides** are naturally occurring substances that control pests by non-toxic mechanisms. For example, insect sex pheromones interfere with mating and scented plant extracts attract insect pests to traps. (<http://www.epa.gov/pesticides/about/types.htm>)

●**Reducing Pesticide Risk** -- The following is the approach taken by the EPA to reduce pesticide risk to humans and the environment:

- "EPA gives priority in its registration program for conventional chemical pesticides to pesticides that meet [reduced risk criteria](#): low-impact on human health, low toxicity to non-target organisms (birds, fish, and plants), low potential for groundwater contamination, lower use rates, low pest resistance potential, and compatibility with Integrated Pest Management.
- Some pesticides are by their nature less risky, for example, many biological pesticides that are derived from such natural materials as animals, plants, bacteria, and certain minerals pose a lower risk. For example, canola oil and baking soda have pesticidal applications and are considered [biopesticides](#). However, other plant-derived pesticides such as nicotine can be quite toxic.
- EPA is [reviewing older pesticides](#) to ensure that they meet current safety standards. The results of these reviews often include actions to reduce risks from pesticides, such as establishing or enlarging buffers to protect surface water bodies, changing the amount or frequency of use of a pesticide to

reduce exposure, limiting use of the pesticide during periods when a non-pest species might be affected, eliminating or modifying uses that pose unacceptable risks to people, particularly children.

- In many situations, there may be non-chemical methods to control pests. EPA recommends considering and using these methods as part of an overall pest management strategy, often called [Integrated Pest Management](#).
[Source: <http://www.epa.gov/pesticides/health/reducing.htm>]

- **Integrated Pest Management (IPM)** is a sustainable approach to managing pests which combines biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks.

- An [IPM Primer](#) introducing basic concepts as they relate to grapes can be found on the [Cold Climate Grape Production IPM website](#) along with other grape IPM information that can aid in reducing pesticide risks.



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Where trade names or commercial products are used for identification, no discrimination is intended and no endorsement is implied. Always read the label before using any pesticide. **The label is the legal document for the product use. Disregard any information in this article if it is in conflict with the label.**

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