# **Pesticide Risk Assessment Process**

To register a pesticide for use in the United States, the manufacturer must conduct numerous scientific studies (approximately 150) according to the U.S. Environmental Protection Agency's (EPA) requirements. The data and intended uses of the pesticide are sent to the agency for review to determine if the pesticide is safe for human health and the environment before it can be registered for the uses requested. Below are the steps the scientists at EPA take to perform robust and effective human health and environmental risk assessments.

Scientists at EPA perform **risk assessments** by reviewing all the data submitted by a manufacturer to determine the relationship between harmful effects of a pesticide and potential exposure to a pesticide.

Based on the risk assessment, if the pesticide has a high likelihood of unreasonable harm, or lacks reasonable certainty of no harm from consumption of food containing pesticide residues, EPA **manages risk** by taking action, such as: requiring additional testing, requiring that the pesticide be applied only by specially-trained people, or deciding not to allow its use. **Decisions on risk reduction measures are based on a consideration of both pesticide risks and benefits of the pesticide.** 

## Human Health Risk Assessment Process

The process to estimate the nature and probability of adverse health effects in humans who may be exposed to chemicals in contaminated environmental media (air, land, and water) or through food, now or in the future. EPA relies on these four steps to access risk.

#### **Hazard Identification**

1

Does a substance have the potential to cause harm to humans and/or ecological systems, and if so, under what circumstances? EPA considers the full spectrum of potential health effects that may occur from different types of pesticide exposure, from eye and skin irritation to cancer and birth defects.

### Dose Response Assessment

2

Examines the numerical relationship between the toxicity of a pesticide and the amount of a pesticide that could cause harm.



Examines what is known about the frequency, timing, and levels of contact with a pesticide. Typical sources of pesticide exposure: food and drinking water. Others include worker exposure.



Examines how well the data support conclusions about the nature and extent of the risk from exposure to pesticides.

### **Ecological Risk Assessment Process**

The process to determine what risks are posed by a pesticide and whether alterations to the use or proposed use are necessary to protect the environment.

#### 3 2 4 1 **Problem Formulation Planning and Scoping** Analysis of Exposure and Effects **Risk Characterization** Define the purpose, scope and Refine the objectives of the Describes the risk, indicates Evaluate ecological responses technical approaches for risk assessment, determine to pesticides under different level of confidence, captures conducting a risk assessment. who/what/where is (at) risk exposure conditions. uncertainties, cites evidence (ecological entities), and to support the assessment, whichcharacteristics are and interprets adversity of ecological effects. important to the protect.

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