

PEST MANAGEMENT PRINCIPLES



THE FOUNDATION OF PROPER PEST MANAGEMENT IS AN UNDERSTANDING OF BASIC CONCEPTS, LANGUAGE, AND ACTIONS USED TO GUIDE PRACTICES.

Integrated Pest Management (IPM)

Practicing IPM prevents pests from reaching a point where they become a problem while reducing the risks to people, property, and the environment. Identification, monitoring, tolerance, and thresholds are keys of IPM. **A good IPM program will limit risk by using pesticides only as a last resort.**

Pesticide Terminology

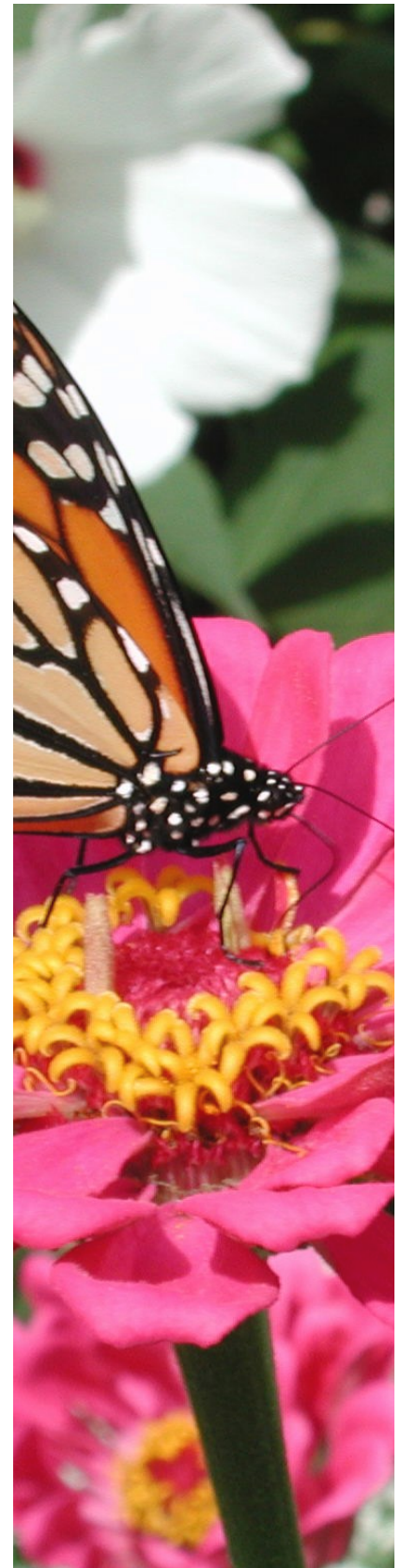
- **Selective (narrow-spectrum)** pesticides will target one particular class of pest.
- **Non-selective (broad-spectrum)** pesticides will affect a broad range of insect species in addition to the target pest.
- **Contact** insecticides only need to touch the pest to cause harm.
- **Systemic** insecticides are incorporated into the host then consumed by the pest. May also incorporate into the pollen and nectar of a plant.
- **Residual** pesticides remain active for a longer period after application and have a higher risk of affecting non-target species such as pollinators.
- **Formulation** is the combination of active ingredient (chemical doing the management) and inert ingredients that determine the physical state of product (dust, liquid, etc.). Formulation can play a major role in pollinator risk.
- **Toxicity** of a pesticide is a measured ability to cause immediate (acute) harm.
- **Risk** is the combination of toxicity (which cannot be changed) and exposure (which can be changed).
- **Types of Pesticides:** Insecticides, Fungicides, Herbicides, Antimicrobials, Avicides, Bactericides, Defoliants, Desiccants, Fumigants, Growth Regulators, Miticides (Acaricides), Molluscicides, Nematicides, Repellents, Rodenticides, Wood Preservatives.

Pesticide Sources

- Physical Environment (e.g. minerals, diatomaceous earth)
- Plants, Insects, Microorganisms (e.g. hormones, pheromones, Bt, soil fungi)
- Manufactured (e.g. man-made chemicals)

Pesticide Products & Labeling

- Pesticides are grouped according to the pests they target, by the chemical activity that affects the pest (as seen in pesticide resistance codes for different modes of action), by formulation, or by bee toxicity groupings.
- **Organic** is a labeling term for agricultural products that have been produced using cultural, biological, and mechanical practices in accordance with the USDA organic regulations. Many practices and materials in an organic production system can also be applied as part of an Integrated Pest Management system.
- **Signal Words** on the label reflect mammalian toxicity. For your safety and others, choose pesticides with lower toxicity whenever possible.
 - ◇ **CAUTION** = low toxicity
 - ◇ **WARNING** = moderate toxicity
 - ◇ **DANGER** = skin/eye corrosive (no toxicity)
 - ◇ **DANGER/POISON** = highly toxic (trace amounts)
- The U.S. Environmental Protection Agency (EPA) regulates all pesticides that are sold and distributed in the United States.
- Vermont law requires registration prior to sale, use, and/or distribution within the state. Class "A" pesticides are "Restricted-Use" and "By-Permit Only" products.
- Anyone in the state of Vermont who uses, supervises, recommends, or sells pesticides may be required to become **certified** to ensure that pesticides are used in a proper and legal manner.



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