

Definitions of Integrated Pest Management

California Department of Pesticide Regulations (DPR):

Integrated Pest Management is a pest management strategy that focuses on long-term prevention or suppression of pest problems through a combination of techniques such as monitoring for pest presence and establishing treatment threshold levels, using non-chemical practices to make the habitat less conducive to pest development, improving sanitation, and employing mechanical and physical controls. Pesticides that pose the least possible hazard and are effective in a manner that minimizes risks to people, property, and the environment, are used only after careful monitoring indicates they are needed according to pre-established guidelines and treatment thresholds.

California Department of Food and Agriculture (CDFA):

Optimum combination of control methods including biological, cultural, mechanical, physical and/or chemical controls to reduce pest populations to an economical acceptable level with as few harmful effects as possible on the environment and non-target organisms.

University of California Statewide Integrated Pest Management Project

Integrated pest management (IPM) is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment.

United States Department of Agriculture (USDA):

- 1) Integrated pest management (IPM) is an ecologically based, environmentally conscious method that combines, or integrates, biological and nonbiological control techniques to suppress weeds, insects, and diseases ("Integrated Pest Management Systems: Protecting Profits and the Environment", by Raymond E. Frisbee and John M. Luna, *Farm Management : The 1989 Yearbook of Agriculture*, p 226. NAL Call No. IAg84y 1989).
- 2) IPM is an ecologically based approach to pest (animal and weed) control that utilizes a multi-disciplinary knowledge of crop/pest relationships, establishment of acceptable economic thresholds for pest populations and constant field

monitoring for potential problems. Management may include such practices as "the use of resistant varieties; crop rotation; cultural practices; optimal use of biological control organisms; certified seed; protective seed treatments; disease-free transplants or rootstock; timeliness of crop cultivation; improved timing of pesticide applications; and removal or 'plow down' of infested plant material." [J. Keith Waldron, "Integrated Pest Management," *Long Island Horticulture News* (July 1989), p.1. NAL Call # SB317.5 L65]

3) USDA/CREES

Integrated pest management is a sustainable approach that combines the use of prevention, avoidance, monitoring and suppression (PAMS) strategies in a way that minimizes economic, health, and environmental risks.

(<http://www.reeusda.gov/agsys/ipm/whatisipm.htm> Land Grant University Definition,1998).

4) USDA ERS definition of IPM:

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

United States Environmental Protection Agency (USEPA):

- 1) A system of controlling pests in which pests are identified, action thresholds are considered, all possible control options are evaluated and selected controls are implemented. Control options-which include biological, chemical, cultural, manual and mechanical methods-are used to prevent or remedy unacceptable pest activity or damage."

The choice of control options then is based on:

- ✧ effectiveness
- ✧ environmental impact
- ✧ site characteristics
- ✧ worker/public health and safety
- ✧ economics

The basic components of IPM are 1) monitoring of potential pest populations and their environment; 2) determining pest injury levels; 3) decision making-developing and integrating all biological, cultural and chemical control strategies; 4) educating personnel on all biological and chemical control strategies; 5) timing and spot treatment utilizing either the chemical, biological or cultural methods; 6) evaluating the results an on-going process.

- 2) Age-old, common-sense practices are what many people associate with IPM. Today many growers no longer apply pesticides to food on a regular basis regardless of

whether or not there are insects, weeds, or other pest problems. In some parts of the country, food is being marketed as IPM food.

Some practices for preventing pest damage may include:

- _ inspecting crops and monitoring crops for damage, and
- _ using mechanical trapping devices, natural predators (e.g., insects that eat other insects), insect growth regulators, mating disruption substances (pheromones), and if necessary, chemical pesticides. The use of biological pesticides is an important component of IPM.

In technical terms, Integrated Pest Management (IPM) is the coordinated use of pest and environmental information with available pest control methods to prevent unacceptable levels of pest damage by the most economical means and with the least possible hazard to people, property, and the environment.

- 3) Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment.
- 4) This is another EPA definition of IPM that adds that the use of pesticides is OK. **IPM** is an effective and environmentally sensitive approach to pest management that relies on a combination of commonsense practices. **IPM** programs use current, comprehensive information on the life cycles of pests and their interactions with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment. **IPM** programs take advantage of all pest management options possibly including, but not limited to, the judicious use of pesticides.