A close-up photograph of a hand holding a green leaf. The leaf is covered with numerous small, white, oval-shaped insects, likely aphids, which are clustered together. The background is a blurred green, suggesting a plant or garden setting. The text 'Overview of Integrated Pest Management (IPM)' is overlaid on the left side of the image.

Overview of Integrated Pest Management (IPM)

Andrew Lopez, Conservation
Program Coordinator

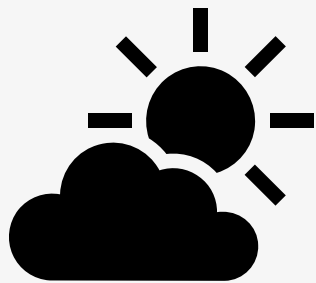
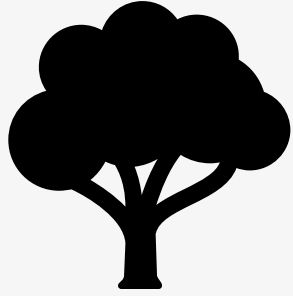
North Santa Clara Resource
Conservation District (NSCRCD)

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Presentation Contents

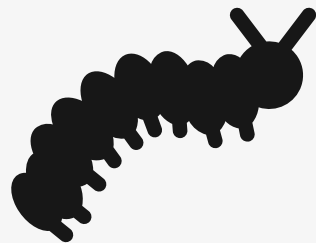
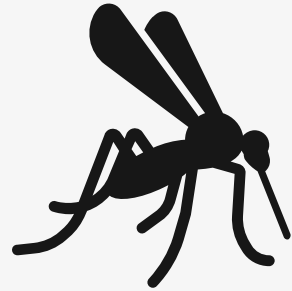
- What is Integrated Pest Management (IPM)?
- What is a pest?
- Benefits of IPM
- Overview of the IPM pyramid and control methods
- Components of an IPM plan





What is IPM?

- **University of California IPM Definition:** “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.”
- **Remember:** IPM is not a one-step method for control but rather a comprehensive approach utilizing various techniques



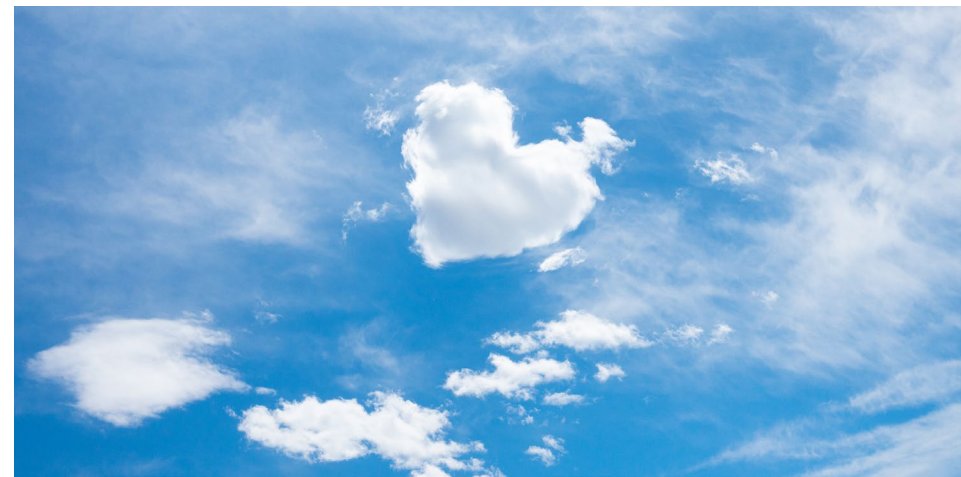
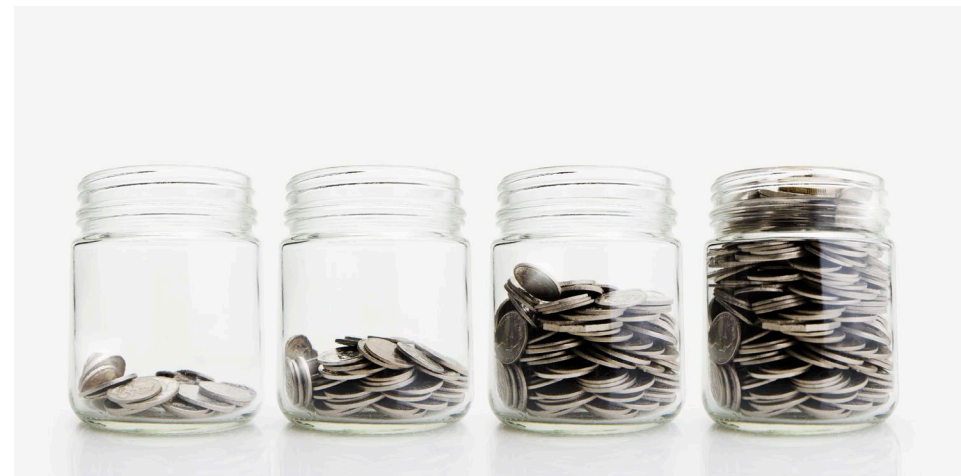
What is a Pest?

- **University of California Pest Definition:** “organisms that damage or interfere with desirable plants in our fields and orchards, landscapes, or wildlands, or damage homes or other structures. Pests also include organisms that impact human or animal health.”
- **Examples of various pests:** Plants (weeds), vertebrates (birds, rodents), invertebrate (insects), nematodes, pathogens (virus, bacteria, fungi)

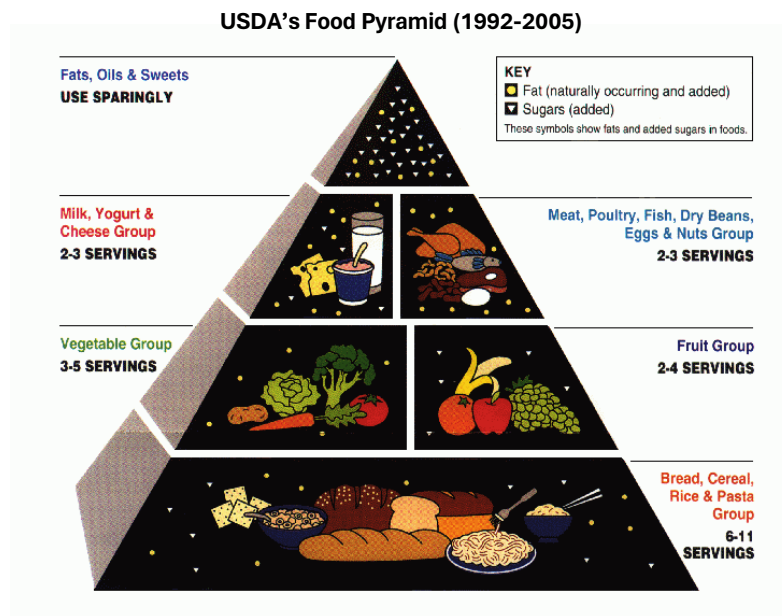


Benefits of IPM

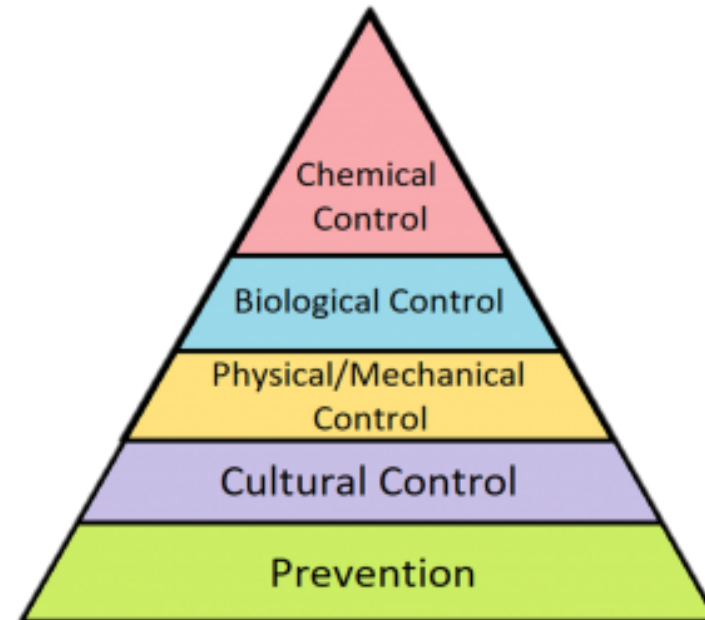
- Reduced exposure to pesticides
- Improved air quality
- Protection of beneficial and non-target organisms
- Mitigation of pesticide resistance
- Reduced costs



IPM pyramid overview and analogy



Food pyramid provides a good analogy to IPM pyramid



IPM Pyramid revealing different control methods

Prevention

- Base of the IPM pyramid – first thing we should consider
- Emphasizes the importance of preventing pest issues before they arise
- **Examples:** purchasing seeds and plants from trusted sources to prevent introducing pests; cleaning/sanitizing tools, clothes, and/or machinery to prevent pests from hitchhiking





Cultural control

- Next step of the IPM pyramid
- Focused on techniques that address how we cultivate plants
- **Examples:** using varieties of plants that are pest resistant; practicing proper planting techniques to establish healthy plants; adjusting irrigation technique/timing



Physical/Mechanical control

- Third step of the IPM pyramid
- Utilizes physical barriers, traps, and mechanical methods to control pests
- **Examples:** sticky traps to catch small insects such as thrips and fungus gnats; row covers/netting over plants to protect from birds and insects; removal of weeds by mowing or hand tools



Biological control

- Second to last step of the IPM pyramid
- Use of one organism to control another organism
- **Examples:** releasing parasitic wasps to control specific insect pests; planting native plants and/or insectary plants to attract natural enemies of pests

Chemical control

- Last step of the IPM pyramid
- Chemical controls, such as pesticides, should be used as the last resort in an IPM program. Should be applied sparingly and in a way to minimize damage to the environment and non-target organisms
- **Examples:** Roundup used for weed control; Intrepid used for insects



Components of an IPM plan

1. Pest Identification	Learn your pests and their life cycles
2. Monitoring	After identification, monitor the pest before it becomes a problem
3. Establish action thresholds	Set a point at which you must begin implementing control
4. Management	Choose and implement a combination of control options for your pest
5. Evaluation	Did your actions work? How can they be improved for better control?



Questions?