

## ***Integrated Pest Management***

Master Gardener General Training  
By  
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### ***Pest Management***


- **Pests**
  - Insects
  - Diseases – fungi, bacteria, viruses, PPLO's
  - Weeds
  - Wildlife

### ***Pest Management***

- **Integrated Pest Management**
  - Know the Key Pests
  - Monitor plants regularly
  - Choose the best control method

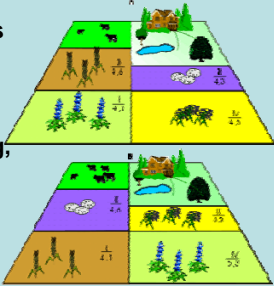
### ***Integrated Pest Management***

- **Best Control Practices**
  - Cultural
  - Physical
  - Biological
  - Chemical



### ***Integrated Pest Management***

- **Cultural**
  - Resistant varieties
  - Right placement
  - Proper planting
  - Proper care – mulching, watering, fertilizing
  - Sanitation
  - Rotation




### ***Integrated Pest Management***

- **Physical**
  - Remove & destroy pests:
    - Knock off with jet of water
    - Rake and remove leaves
    - Prune out branches
    - Pick off by hand
    - Hoe or pull weeds
    - Bait & trap





### Integrated Pest Management

- **Biological**
  - Predators
  - Parasites
  - Diseases
  - Botanicals



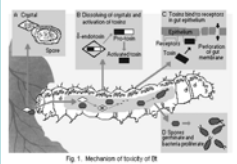
### Integrated Pest Management

- **Biological**
  - Predators = Natural Enemies**
    - Ladybugs, lacewings, earwigs, ground beetles
    - Birds
    - Frogs
    - Mammals
  - Parasites = Natural Enemies**
    - Parasitic wasps
    - Nematodes


### Integrated Pest Management

- **Biological**
  - Diseases (pathogens) = Natural Enemies**
    - Bacillus thuringiensis
      - var. kurstaki
      - var. san diego (or var. tenebrionis)
      - var. israelensis
    - Milky spore disease



### Integrated Pest Management

- **Biological**
- **Botanicals**
  - Rotenone
  - Pyrethrum
  - Neem oil (azadirachtin)
  - Imidachlopid (Merit)



**Remember, botanicals are toxic when applied but degrade quickly.**

### Integrated Pest Management

- **Chemical – “The Last Resort”**

**ALWAYS read & follow label recommendations!**

 <p><b>Non-toxic</b></p> <ul style="list-style-type: none"> <li>oils</li> <li>soap</li> <li>sulfur</li> <li>copper</li> <li>baking soda &amp; water</li> <li>hot pepper wax</li> </ul>	 <p><b>Toxic</b></p> <ul style="list-style-type: none"> <li>carbaryl (Sevin)</li> <li>(diazinon, malathion, acephate, chlorpyrifos)</li> </ul>
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