A Short Guide to Integrated Pest Management (IPM)



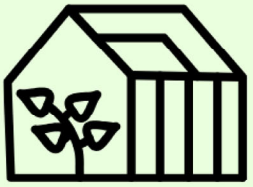
IPM is a concept that came about in response to growers applying chemical pesticides in excess, which they did proactively to prevent pests from rising to problematic levels. Unfortunately, this led to pests and pathogens developing resistance to the pesticides.

Listed here are various methods of controlling pest outbreaks.

Mechanical Control

Physically removing the pest, usually killing it

- Removing insect pests by hand (Did you know that tomato horn worms glow under blacklight? Looking for them at night with a blacklight can be an effective method.)
- Pruning away affected tissue (if needed, place in a clear plastic bag and leave in the sun to fry the little suckers)
- Blow torch, sometimes used (with caution!) for squash bug egg clusters
- Washing off with a hose (This works well for spider mites and works ok for aphids: though be aware of aphids washing off into the soil and hiding there.)



Exclusion

Physical

- e.g. covering the crop with row cover or growing inside a greenhouse

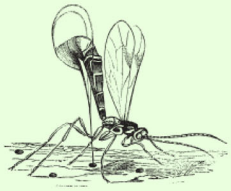
In time

- e.g. squash bugs tend to stop moving around after they mate, so some farmers only plant their squash in late June after the mating season





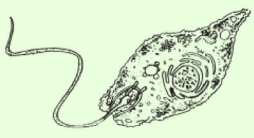




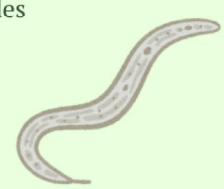
Biological Control

Using another organism to kill the pest. Common methods include:

- Parasitoids: Usually a wasp, this is an insect that lays its egg inside the pest insect, which the larvae then kills and eats the host
- Predatory insects: e.g. ladybugs used for aphid control, and lacewings used for aphid and scale control
- Fungus/bacteria: BT is a commonly used bacteria that attacks the larval stage of mosquitoes, fungus gnats, and drain flies
- Predatory nematodes: a microscopic work-like creature, usually used to control other species of nematodes







Chemical Control

Pesticides are usually considered a last resort. There are organic pesticides available, although you would need to look up the one to meet your needs. ALWAYS READ THE LABEL BEFORE PURCHASING! Here are the things to look for on a label:

- Does this pesticide target the pest you need to kill?
- PPE: Personal Protective Equipment
  - Do you need to wear gloves/eye protection?
- REI: Re-Entry Interval
  - Usually 0 hours for pesticides available for home use, but important to check nonetheless.
- PHI: Pre-Harvest Interval
  - The time it takes the pesticide to degrade so that it is not consumed in the case of produce not being washed.
- Application rates/method/timing
  - Be aware of the effect on pollinators! Many pesticides recommend application at the end of the day to avoid both harming pollinators and the sun degrading the chemical before it can be affective
- Is water pH a factor for application, and do you have a way to test that?
- Is weather or outdoor temperature a factor?

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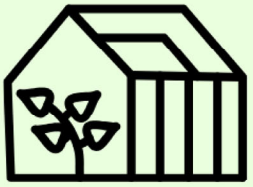
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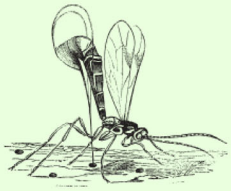
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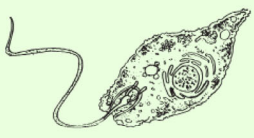




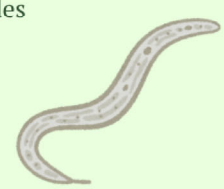
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