Integrated Pest Management

Plus Pathogen Suppression
Accepting Our Role In The “Grand Alliance”
Principles of IPM

1) Allowing nature to control nature. Forethought = Prevention.

2) Observation/The language of plants = Monitoring plant health.

3) It's all about balance. The “good” and the not so “good”.


5) Start with least harmful method of control.

6) “Tolerance” a practice not action.

7) Finally understanding we are not in control and most bugs are good if not essential to our survival.
Careful Observation

- Taking time to communicate with the plants: standing back to study the landscape is crucial in evaluating a true sense of plant health.

- Close up critical investigation of plants especially underside of leaves, at base of plants and the roots.

- Plants don’t lie. If something is askew plants will show it. We just need to listen to them.

- Seek out answers: send photos and take pest and plant samples to people with knowledge.
Balancing the “Good” and the “Not So Good”

- Invite the (good guys) beneficial microbes & beneficial insects. The good bugs keep the bad bugs in check.

- 1) Create a favorable environment for the “beneficials” and you will be amazed of the diversity that shows up.

- 2) Import or purchase (good guys) beneficial insects, decollate snails, mycorrhizal fungi, predatory nematodes and worm tea.
Prevention is The Best Cure...

- “The sooner we make peace with the landlords... the bugs... the sooner we’ll all do a lot better”

- Most bugs and microbes are beneficial and often essential: Ex. pollination, bacteria, fungus...oh and yeast!

- We are not in control. We can spray and spray and the more we spray the more they adapt: Why? Ex. antibiotics.

- Nature can only keep up with nature. Here’s where we can offer some assistance.
Creating Habitat For The Beneficials

- Increasing Biodiversity is key to the health of any garden ecosystem. Plant Positive strategy: weeds, cover crops, polyculture instead of monoculture.

- Many native plants attract beneficials:
  Ex. buckwheat, sage, grasses and wild places.

- Small flowered plants: Ex. fennel, alyssum, rosemary, cilantro, lavender, clover, daisies and many varieties of herbs.

- Native wildflowers and cutting flowers also act as insectary plants to draw in predator species of insects.
Creating Habitat For Beneficials In The Soil

- Mulching when done correctly can encourage a multitude of beneficials from insects, microbes, fungus, reptiles to amphibians.

- Compost used often feeds the soil food-web that acts as the immune system of the soil.

- Worm castings stimulate plants to produce higher levels of chitinase an enzyme that repels insect pests.

- Feeding the soil with a complete organic fertilizer (COF).
Controlling Infestations

- When pests are found the best action sometimes is non-action. They may be isolated or are harmless or very short lived.
- Discard infected plant or parts.
- If control is necessary start with least harmful method.
- If chemicals (synthetic or natural) are last resort use carefully and correctly.
Control Methods

- Prevention! Give your plants what they need.
- Spray off with water, then add soap.
- Spray with neem, garlic, chili pepper, nicotine, compost/worm teas.
- Barriers like: plastic rings, copper rings, ashes, diatomaceous earth, tangle foot.
- BT = Bacillus thuringiensis for caterpillars
Okay?
So What About Those Furry Pests?
Four Legged Pests

- Gophers: trapping and or anti-coagulant baits, exclusion wire around roots (pre-planting).

- Rats: traps, exclusion from trees, baits.

- Squirrel: trapping (Squirrel-inator), anti-coagulant baits.

- Rabbits: exclusion fencing, sustainable harvesting. Create nesting and roosting sites for birds of prey (barn owl boxes, bird of prey poles)

- Deer: Fencing is a must, 8 foot minimum, (urine doesn’t work)

- Raccoons and Opossums: Relocation traps, or?
The Good Guys

- Spiders: they just show up (if we like them or not).
- Ladybugs esp. the larva: please don’t purchase.
- Wasps: (no kidding) Yellow Jackets, Predatory and Parasitic.
- Flies: (Yes Flies! I’m Totally Serious) Syrphid Flies, Hover Flies, Tachinid Flies.
- Praying Mantises: buying them is okay. Dragon Flies: they are predators on the wing.
Feathered Foe?
Crop Eating Birds

- Exclusion, Exclusion, Exclusion!
Maybe We Could Just Eat The Bugs?
Or Maybe We Could Employ Bug-Eating Plants?
The End