

**Integrated Pest Management (IPM) Learning Module Fact Sheet**  
**Introduction to Homeowner IPM**

Katarzyna Madalinska, Michael Monzon, and Mark Gregory Robson, PhD MPH

An ecosystem is defined as a population of different species living in one space creating a community of plants, animals, and microbes. A successful ecosystem relies on a set of checks and balances to maintain equilibrium.

**What can disturb an ecosystem?**

The introduction of a foreign species that has the potential to outcompete native species, deplete resources, and displace current organism. The environment is often not yet adapted to these foreign species and lacks chemical defenses or natural enemies to keep the populations at non-detrimental levels.

*Pests can be both native and invasive!!!*

Two types of important pests:

- 1) Vector pests: Organisms that carries and can transmit pathogens.
- 2) Garden pests: Organisms that consume garden plants or are generally considered a nuisance.

**Types of IPM available for homeowners**

- Cultural: Use of resistant varieties, thinning, fertilization, sanitation, complimentary crop plantings, use of plants known to be repellents, and creating barriers.
- Mechanical: Removal of pests or weeds by hand, trapping.
- Physical: Using natural products such as soap, Epsom salt, vinegar, or boiling water.
- Biological: Creating habitats for natural enemies such as predators or parasitoids, habitats for bats or birds.
- Chemical: Last resort if all other tactics fail. Broad spectrum insecticides target a wide range of organisms but are also most harmful to natural enemies.

**Natural pest control**

- Sulfur and copper for mold prevention.
- Neem oil which reduces feeding and acts as a repellent.
- *Bacillus thuringiensis* (BT) is specialized and absorbed by the insect gut and only effects target insect order.

### **Beneficial insects**

Not all insects are detrimental to humans. Beneficial insects are those that improve our lives and play an essential role in the ecosystem. Insects act as decomposers, pollinators, and are essential in our food web. Many of the plants we consume require pollination to produce fruits and vegetables. Pollinators include insects, birds, and mammals. The most abundant and successful pollinators are insects such as bees and butterflies. Homeowners can attract pollinators and natural enemies of pests by creating habitats and including nectar-rich flowers.