



Stone Fruit IPM for Beginners

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Preface

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What is IPM?

Integrated pest management (IPM) is a set of strategies and tactics agricultural producers use to manage crop pests. The goal of IPM is to increase production efficiency, reduce production costs, reduce worker and consumer exposure to pesticides and protect the environment to support sustainable production of marketable products.

Some examples of IPM practices used in stone fruit production include using pheromones to disrupt insect reproduction, using pest-specific pesticides to reduce harm to non-targets, scouting for insects and diseases and monitoring weather conducive to pest development to optimize the timing of IPM tactics.

Effective IPM programs rely on an understanding of pest biology in relation to the crop produced in a particular region. Fortunately, we already know a great deal about the biology of many key stone fruit pests (insects, mites and diseases) and the effective IPM strategies and tactics for managing them.

Purpose of beginning stone fruit IPM fact sheets

This series of fact sheets provides the basics on IPM tactics used against stone fruit pests; their use provides a foundation for successful pest management. Keep in mind not all the pests in this series will be problematic on every farm and in every season—that is why IPM scouting and monitoring strategies are important. Results may not prove perfect, because pests could show up in your stone fruit orchard that are not covered here.

Pest presence and severity will vary among orchards as a result of several factors including scion and root-stock susceptibility and production practices. Differences in pest pressure will also vary year to year in a given orchard as a result of interacting factors related to weather including carryover inoculum and overwintering success of pests.

These fact sheets represent a compromise between the most accurate, complex information researchers have to offer while maintaining an introductory context for beginning stone fruit producers and people training to become scouts in stone fruit orchards. Read the first chapters carefully to begin this new venture and follow the Scouting Calendars as they apply to stone fruit growth stages during the growing season.



MSU Extension file photo.

Adopting an IPM Mindset

1. Learn the common insect and disease issues likely to arise in the crop, when they are most likely to be a problem and what tactics can be used to provide early detection and prevention.

- ▶ For most diseases, successful IPM relies on selecting disease-resistant cultivars where possible, using cultural practices that remove or destroy sources of inoculum, and applying preventative sprays according to weather-based predictive models.
- ▶ For insects and other arthropod pests, success requires learning the biology of the main pests and, in particular, which life stage can be disrupted or suppressed, and when and where it is likely to be active.

2. Find out what strategies are recommended for keeping pest issues managed below economic thresholds.

- ▶ The *economic threshold* is the level of a pest population or extent of crop damage at which the value of the destroyed crop is more than the cost of pest control.
- ▶ The level of fruit damage allowed at harvest will depend on the grower's tolerance and the markets where the fruit will be sold, however, a healthy orchard will stay productive longer than one that is stressed by infection or damaged by pests.

3. When a problem arises, identify the correct cause.

- ▶ Use available scouting guides, submit samples to plant diagnostic services or consult experienced field scouts.
- ▶ Keep an eye out for regional or local disease and insect reports so that you know what is being found nearby in a given week during the season.

4. If you can't bring the expert out to the field, document the signs and symptoms.

- ▶ Take clear photos or collect fresh samples, and provide information about the orchard including its age, the cultivar affected and the production system being used.

5. Use the correct tools and apply them at the right time for the target issue.

- ▶ Passive (unbaited) traps may be useful for some pests, but pheromone lures are available for many insect pests. Depending on the pest, they may be used: (1) to lure pests to a trap for monitoring by recording their presence or absence, (2) for counting pests up to an action threshold, or (3) for mating disruption.
- ▶ Pesticides come in a variety of different formulations and act in different ways, including how long they are able to persist on the plant providing protection, so it is important to know which classes and formulations are best for the target pest and when they should be applied and reapplied for maximum effect.

6. Keep good records on individual orchards.

- ▶ Pests can be very patchy and unpredictable, but keeping records on individual orchard blocks will help with anticipating potential problems or problem areas from year to year.