

## PEST BIOLOGY, MONITORING, and MANAGEMENT STRATEGIES

### INTEGRATED PEST MANAGEMENT (IPM)

#### HOW TO USE THIS GUIDE

The purpose of this publication is to help growers make informed choices for their situation. The best way to use this guide is to become familiar with it as a whole before using it to answer specific questions during the busy growing season. For each major pest, the Guide covers three areas: 1.) biology and damage, 2.) monitoring and thresholds, and 3.) suppression.

**Biology and damage** descriptions are limited to information needed for monitoring and making decisions. More complete pest biology and color illustrations are available in other publications or through web sites (See Page 47, IPM Resources).

**Monitoring and thresholds** are discussed for pests for which Cooperative Extension recommendations are the same throughout New England. For other pests, and for more complete monitoring information, consult state IPM guidelines.

**Suppression** strategies and tactics comprise the largest portion of this publication, and represent the best information available to New England Extension staff. Combining an understanding of pest biology, monitoring, preventive measures, and suppressive methods into a set of coordinated actions provides an integrated **management approach** to pest problems.

IPM is the guiding philosophy behind this publication. It is a multifaceted approach to maintain pest damage below economically damaging levels. The word “Integrated” refers to the fact that individual management decisions are not isolated, but



take into account, to the greatest extent possible, all aspects of the existing and potential pest situation in relation to the overall farm operation.

Instead of focusing just on how to eradicate pests, IPM considers pest biology and all feasible preventive and curative options. The goal of IPM is to

make decisions that produce economically and environmentally optimum results.

Using IPM requires integrating the best available options in a complementary way to create an overall management plan that is efficient, effective, and sustainable. Cultural practices such as sanitation and habitat management are a first line of defense in preventing pest problems.

Informed and timely pest management decisions are based in part on regular orchard monitoring. Economic thresholds are used to help decide whether to act on scouting observations.

When chemical treatment is necessary, selective pesticides are given preference, and are used in a way to minimize detrimental effects on nontarget species, especially predators and parasitoids that attack pests. Maintaining accurate spray equipment calibration is an important part of IPM.

To learn from experience, an IPM approach includes evaluation of decisions and their outcomes. Orchard scouting records, treatment records, and damage assessment are used to identify where improvements can be made.

## MAKING IPM WORK FOR YOU

IPM can also be thought of as an abbreviation for Information, People, & Management. To use IPM most effectively requires a plan to assess the likely problems and possible ways to manage them. From this, you can build an overall strategy for pest management, identify the information that will be needed to make management decisions, and determine how you will acquire and use that information. As with any important job, it is more likely to be done well if task and time commitments (i.e. who will do what and when will they do it) are specified in a written plan.

The strategies of an IPM plan will vary according to the unique characteristics of each farm. In the interest of brevity, a full discussion of designing an IPM plan is not included in this publication, but a typical planning process might include these steps:

1. Review damage and spray records, and recollections of block history, to identify key pests and problem areas. A map of each block is useful to record pest hot spots, identify areas that may be sources for infestation, identify drift-sensitive areas, and to plan monitoring and treatment actions. Review the lessons learned from success and failures of your pest management actions of previous years. Set measurable objectives for your IPM program.
2. Read about pest and beneficial species biology in this and other publications. For each key pest, consider cultural and site management tactics that can reduce or replace the need to use pesticide. Schedule time for those tactics you choose.
3. Determine what information you will need in order to make informed pest management decisions during the growing season. Decide which pests will be monitored, when, how, and by whom. Blocks and pests with the most uncertainty for treatment decisions should probably receive highest priority for scouting. If monitoring requires traps or other supplies, order them early. Locate key monitoring sites on the block maps. Refer to state publications for specific monitoring guidelines and recommended action thresholds.
4. For pests that typically require pesticide application, review the options available and choose those that are most compatible with your operation and your objectives. Examples of objectives are: worker protection, spectrum of pest control activity, conservation of beneficial species, cost, resistance management, and protecting environmentally sensitive areas. Application factors such as timing, spray concentration, tankmix compatibility, phytotoxicity concerns, alternate or border row application, etc. can influence pesticide selection.
5. Write down your plan. Establish an information system to record pesticide applications, to organize pest and weather observations so that they are useful when you need to make decisions, to communicate with employees, and to leave a record to review next year.

