

Integrated Pest Management Core Concepts



What is IPM?

Integrated Pest Management (IPM) is a comprehensive approach to managing pests that relies on an array of practices that minimize impacts on the environment while providing safe, effective and economical pest control. In an IPM program, pesticides are used only when needed and applications are made with the goal of removing only the target organism.

NRCS & IPM

NRCS provides guidance on IPM to farmers based on criteria outlined in the 595 Integrated Pest Management Practice Standard. While not crop specific, the standard outlines the strategies necessary to develop IPM plans and implement IPM practices. The 595 IPM Practice Standard can be found in section four of the NRCS Field Office Technical Guide: <http://www.nrcs.usda.gov/technical/efotg/>.

An Integrated Approach

Many of the conservation practices promoted through NRCS programs are important to successful IPM. Conservation practices such as filter strips, field borders, irrigation management and mulching can be employed to minimize the transport of pesticides to surface or ground water. Establishment of pollinator habitat can attract and harbor beneficial insects and predators necessary for biological control of pests.



Implementing IPM practices can help effectively suppress the difficult to control Colorado potato beetle.

PAMS

PAMS: Prevention, Avoidance, Monitoring and Suppression are the core strategies used by NRCS in IPM.

Prevention

Cleaning equipment and gear when leaving an infested area, using pest-free seeds and transplants and scheduling irrigation to avoid situations that are conducive to disease development help prevent pests from becoming a problem.

Avoidance

Maintaining healthy and diverse plant communities, using pest resistant varieties, crop rotation and refuge management help avoid potential pest problems.

Monitoring

Pest scouting, degree-day modeling and weather forecasting to help target suppression strategies and avoid routine preventative treatments are essential to an IPM program.

Suppression

Judicious use of cultural, biological and chemical control methods that reduce or eliminate a pest population or its impacts while minimizing risks to non-target organisms is the desired approach to suppressing pests with IPM.

For additional information, see the North Central NRCS & IPM Working Group brochure entitled "The PAMS Approach."

An IPM Year

Pest pressure may fluctuate with the seasons, but the need to plan, prepare, implement and refine IPM is constant. The following practices are used in implementing PAMS strategies.

Soil Preparation: Growers give their plants a head start on avoiding pest problems by choosing the proper site, testing and amending the soil when necessary, rotating crops and providing sufficient organic matter.

Planting: Growers plant crops that tolerate common problem or alter planting time and spacing to discourage certain diseases and insects.

Forecasting: Weather data are consulted to predict if and when pest outbreaks will occur. Treatments can then be properly timed, preventing crop damage and saving sprays.

Pest Trapping: Traps that attract insects are used so that growers can pinpoint when the pest has arrived and decide whether control is justified.

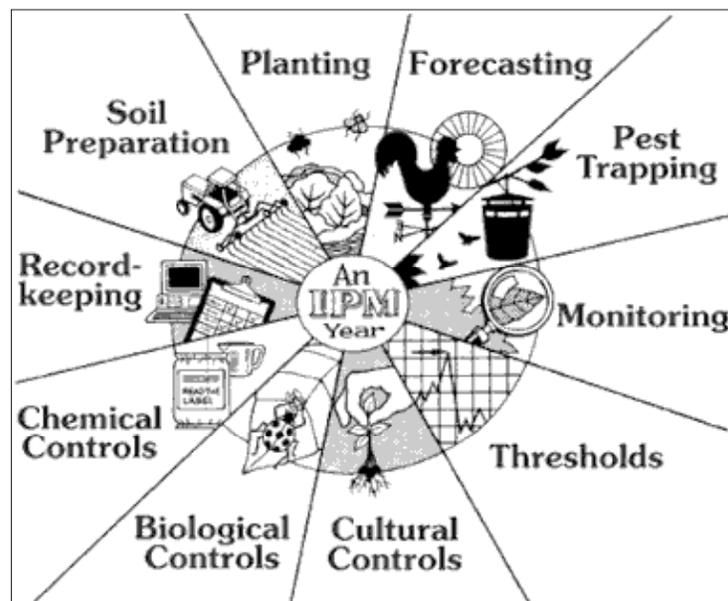
Monitoring: Growers inspect representative areas of the fields regularly to determine whether pests are approaching a damaging level.

Thresholds: Before treating, growers wait until pest populations reach a scientifically determined level that could cause economic damage. Until that threshold is reached, the cost of yield and quality loss will be less than the cost for control.

Cultural Controls: The pest's environment is then disrupted by turning under crop residues, sterilizing greenhouse tools and harvesting early.



Monitoring insect activity can help growers determine when pesticide applications are necessary.



Biological Controls: It is necessary for growers to conserve the many beneficial natural enemies already at work. They import and use additional biologicals where effective.

Chemical Controls: Growers select the most effective and appropriate pesticides and properly calibrate sprayers. They then verify that weather conditions will permit

good coverage without undue drift.

Recordkeeping: Records of pest traps, weather and treatment are kept for use in pest management decisions.

"IPM Year" graphic and text courtesy of Cornell University.

Want more information?

North Central NRCS & IPM Working Group,
North Central Fruit IPM tool
<http://www.nrcs.ipm.msu.edu/>

North Central IPM Center, Fruit: Educational Resources
<http://www.ncipmc.org/fruit/resources.cfm>