INTEGRATED PEST MANAGEMENT

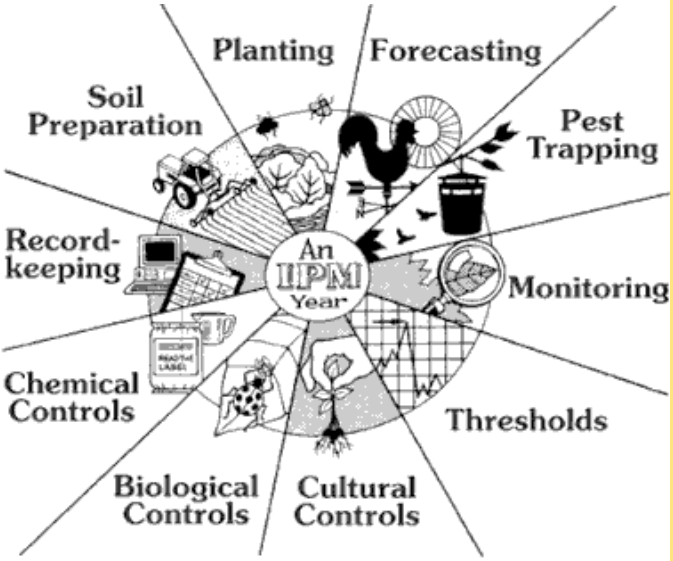
CORE CONCEPTS

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 means of pest control. The principles and practices of IPM are applied to any setting where pests (e.g., insects, diseases, mammals, birds) are present. IPM practices have the added benefit of offering solutions to pest control that reduce the use of pesticides and protect resources by mitigating their impacts on the environment. Applying pesticides to crops on a routine basis, regardless of need, is not IPM. Applications of pesticides are always the last resort in an IPM program.

NRCS & IPM

NRCS provides guidance on IPM to farmers based on criteria outlined in the 595 IPM Practice standard. While not crop specific, the 595 standard outlines the strategies necessary to develop IPM plans and how IPM practices are administered on crops. The technical notes for 595 provide additional guidance in explaining how other NRCS Practice Standards can be incorporated into IPM. The 595 IPM Practice Standard can be found in section three of the NRCS Field Office Technical Guide.



"IPM Year" graphic and text courtesy of Cornell University
See reverse side for more on "An IPM Year"

An Integrated Approach

Many of the conservation practices that are promoted through NRCS programs are important to successful IPM. These practices can be incorporated into an IPM plan to address and protect many resource concerns.

Conservation practices such as filter strips, field borders, irrigation management and mulching can be employed to minimize transport of pesticides in surface or ground water. Establishment of pollinator habitat provides additional habitat for beneficial insects and predators necessary for biological control of pests.

PAMS

The core strategies that NRCS uses in IPM are known as PAMS or Prevention, Avoidance, Monitoring and Suppression.

PREVENTION

Cleaning equipment and gear when leaving an infested area, using pest-free seeds and transplants, and irrigation scheduling to limit situations that are conducive to disease development help to 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

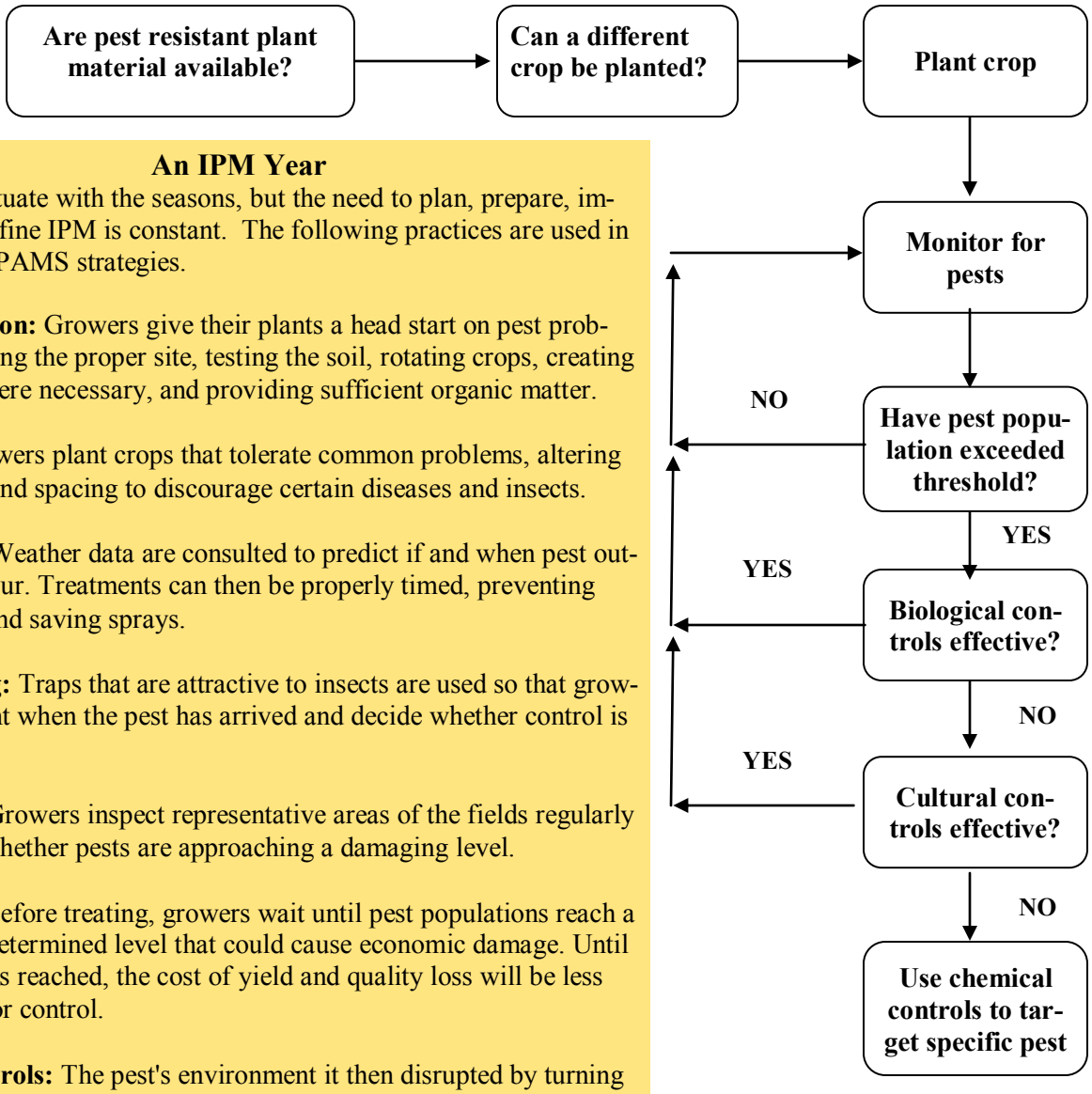
Pest scouting, degree-day modeling, and weather forecasting to help target suppression strategies and avoid routine preventative treatments are essential to an IPM program.

SUPRESSION

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.

Making Decisions with IPM

Established IPM systems require farmers to make many decisions on their pest management. The resources used in IPM provide growers with accurate and site specific data that is used to make a final pest management decision. The following flow-chart outlines the process of evaluating and making pest management decisions based on an IPM model.



An IPM Year

Pests 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 pest problems by choosing the proper site, testing the soil, rotating crops, creating raised beds where necessary, and providing sufficient organic matter.

Planting: Growers plant crops that tolerate common problems, altering 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 are attractive to 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 it then disrupted by turning under crop residues, sterilizing greenhouse tools, and harvesting early.

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 pesticide 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.

More information can be found online

North Central IPM Center:
www.ncipmc.org
Grower Incentives for IPM Work Group
www.ipm.msu.edu/work-group/home.htm
IPM Institute of North America, Inc.
www.ipminstitute.org

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