



Targets Training at Practitioners

The IPM³ Training Consortium launched its training platform in November 2009 with the IPM Core Concepts Training module. A major goal is to provide practical information that will help individuals, agencies and organizations utilize IPM principles in their day-to-day pest management decisions. Target audiences include federal agencies as well as state/local government officials tasked with IPM, Extension Educators, Master Gardeners, 4-H staff, Crop Consultants, Pest Management Professionals, facility managers and supervisors and a wide array of Green Industry Professionals -- in fact, anyone who has an interest in becoming proficient in IPM implementation. Students from around the U.S. representing federal agencies, local government and Extension enrolled in the inaugural core training.

What's Coming (visit www.umn.edu/ipm3 for course details, dates and registration information)

To help in our planning, please contact us at ipm3@umn.edu if you are interested in completing any of our modules as some may have limited enrollment for a particular session. Provide your contact information and approximate date range that you would like to complete the course.

The next **IPM Core Concepts Module session** will be offered January 11 through February 22 and sessions will be repeated several times throughout 2010. The **IPM Core Concepts Module** employs multiple media learning techniques including text, videos, still photos and case studies. The text portion of each lesson is 10-15 minutes followed by an assessment. Lessons with videos and graphics are longer. A student who successfully completes the IPM Core Concepts Module will receive 1.5 CEUs and a Certificate of Completion. Course content includes the following:

- Unit 1. **Introduction to IPM:** pests and pest impacts; pest management; history of pesticide use; IPM developed in response to pesticide problems.
- Unit 2. **IPM Economic Concepts:** pest populations; natural control and general equilibrium position (GEP); economic thresholds (ET); economic injury level (EIL).
- Unit 3. **Host Plant Resistance:** coevolution and selection pressure; resistance mechanisms: antixenosis, antibiosis, and tolerance; constitutive and induced resistance and their fitness costs; resistance genetics.
- Unit 4. **IPM Tactics—Biological Control:** biological control organisms; arthropod parasites and parasitoids; arthropod predators; behavior modification.
- Unit 5. **IPM Tactics—Chemical Control:** pesticide regulation; pesticide classification; pesticide mode of action (MOA); pesticide resistance; insecticide, fungicide, and herbicide resistance; pesticide safety, pesticide residues, and tolerances; environmental fate of pesticides.
- Unit 6. **IPM Tactics—Physical Control:** physical barriers; manual weeding; mulches; pneumatic control; thermal techniques.
- Unit 7. **IPM Tactics—Cultural Control:** sanitation; soil tillage; crop rotations; interplanting; trap crops; cover crops elimination of alternate hosts.
- Unit 8. **IPM Tactics—Regulatory Control:** USDA Animal Plant Health Inspection Service (APHIS) Plant Protection and Quarantine Program; Department of Homeland Security (DHS) Customs and Border Protection; Agricultural Inspections.
- Unit 9. **Introduction to Invasive Species:** definition of an invasive species; Executive Order 13112. National Invasive Species Council (NISC); impact of invasive species; APHIS

prevention, monitoring, control and emergency program costs. Balancing multiple priorities.

- Unit 10. **Introduction to Restoration Ecology**: definition of ecological restoration; multiple disturbances to ecosystems; the importance of setting goals for restoration; ecosystem restoration.

Completion of the **IPM Core Module** will facilitate success in other IPM³ training modules, as each additional training module assumes a basic understanding of the principles of IPM.

An **Invasive Species Specialty Module** will be offered the first time from March 1 through March 26, 2010. Enrollment is limited to 15 students so please register early at www.umn.edu/ipm3. This Specialty Module provides an understanding of the mechanisms that account for invasion success, reviews their role in several invasion examples, and describes their significance when selecting management options. The lessons cover: Mechanisms of Biological Invasions; Pest Risk Assessments; Emerging Invasive Threats to Plants; and Invasive Species Impacts. Post-secondary knowledge of biology and ecology is assumed. This level of knowledge can also be attained by successful completion of the IPM³ Core Concepts Module. A student who successfully completes the Invasive Species module will receive 1.0 CEUs and a Certificate of Completion. This information will be added to your personal portfolio so you will always know what you have completed.

Arthropod Pest Management will be the first of two Pest Biology Modules available in early 2010. This module provides basic biological information about insects, ticks, mites, spiders, and crustaceans; how these organisms reproduce, function, and can be identified; how they can cause damage or harm plants, buildings, food, animals, and humans; and how to mitigate damage using various integrated pest management tactics. It is strongly recommended for students who do not have a background in entomology and who expect to encounter insects and insect relatives as part of their integrated pest management responsibilities. A number of IPM³ courses expect students to have a firm grasp of the arthropod biology, structure, and function. A student who successfully completes the Pest Biology-Arthropods module will receive 1.0 CEUs and a Certificate of Completion.

Plant Pathology will be the second Pest Biology Module available in early 2010. This module provides basic biological information about bacteria, viruses, nematodes and fungi; how these organisms can harm plants; and how to mitigate damage using various integrated pest management tactics. It is strongly recommended for students who do not have a background in plant pathology and who work with or are responsible for plants of all types including landscapes, turf, vegetables, trees, shrubs and green foliage plants. A number of IPM³ courses expect students to have a firm grasp of the biology of plant diseases. A student who successfully completes the Pest Biology-Plant Diseases module will receive 0.6 CEUs and a Certificate of Completion.

Facility Managers and Supervisors Course will be offered from March 16 through June 8, 2010. Enrollment is limited to 15 students so please register early at www.umn.edu/ipm3. This exciting stand-alone course is specifically designed for facility managers and supervisors who are tasked with supervising the day-to day operations of a building or set of buildings and who often assign or contract pest management activities to technicians or specialists. Managers and supervisors completing this course will gain a practical understanding of how the best IPM programs should function. This knowledge will enable students to effectively execute IPM responsibilities whether through internal staff assignments or via external contracts with professional pest management specialists. Insect, mite, rodent and bird pests are covered. A student who successfully completes

the IPM for Facility Managers and Supervisors Course will receive 1.5 CEUs and a Certificate of Completion.

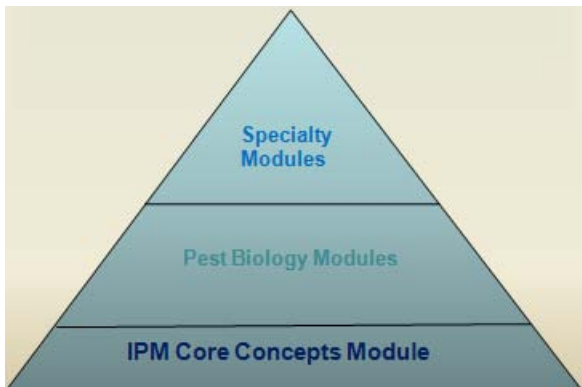
How IPM³ Works

IPM³ training is designed to reflect practical, real world content -- theoretical and academic content are only included to the extent that they are needed to understand the practical training. Modules, the fundamental element of IPM³ training, are the blocks on which courses are built with each course being made up of a specific set of modules. Continuing Education Units (CEUs) will be awarded for each module at the rate of 1.0 CEU for each 10 hours of module content. While modules can be taken alone, many people will be interested in a prescribed combination of modules that will lead to a Course Certificate. Certificates of Completion will be awarded for successful completion of modules and courses. Once taken, modules do not need to be repeated.

Modules

IPM³ training modules are arranged in a 3-tiered hierarchy. The lessons use multiple media learning techniques that variously include text, videos, still photo, and case studies. Assessments are provided at the conclusion of each lesson – a grade of 80 percent is required for a student to progress to the next lesson in the Module. Since our goal is to increase student knowledge and understanding, there are no limitations to the number of times a student may retake an assessment.

3-Tiered Training Program



IPM Core Concepts Module—Basic concepts about IPM and IPM Implementation, 15 hours of instruction, 1.5 CEUs, prerequisite for any pest management course certificate.

Pest Biology Modules—Introductions to: entomology, plant pathology, weed science, vertebrates. Each pest biology module has a minimum of 5 hours instruction per topic. CEUs are variable. At least one pest biology module is required for a Course Certificate. Some Course Certificates may require more pest biology modules.

Specialty Modules— Current Specialty modules include: Invasive Species (stand alone), IPM³ for Facility Supervisors and Managers (stand alone). We are also in the process of developing a Landscape and Turf Specialty Module. Additional specialty modules will be developed as interest and demand dictate. Course Certificates in specialty modules typically require 10-25 hours of instruction.

Stand Alone Specialty Courses

Some Specialty Modules are self-contained and will result in a Course Completion Certificate without taking additional modules. One such Specialty Course, IPM³ for Facility Supervisors and Managers,

focuses on facility evaluation, pest prevention, and construction of contracts for facility pest management. This course does not require the IPM Core Concepts Module as a prerequisite. The course includes a managerial overview of IPM that meets the needs of managers, supervisors, and contract management officers.

Benefits of IPM³ Training

- Current, expert content.
- Electable topics to address agency and individual needs. Modules and courses can be added based on demand and available expertise.
- Cost effective: no travel and per diem cost to receive training.
- Consistent IPM message within an organization. This can provide the baseline for advanced training within an industry or agency.
- Asynchronous, on-line delivery allows students to access material on their own schedules anytime during a 6-week instructional period.

IPM³ Steering Committee

Co-chairs:

- Mark Ascerno, University of Minnesota, Department of Entomology
- Bob Nowierski, USDA National Institute of Food and Agriculture (NIFA)

Federal agency members:

- Carol DiSalvo, National Park Service (NPS)
- Al Greene, General Services Administration (GSA)
- Doug Holy, Natural Resource Conservation Service (NRCS)
- Tiffany Parson, Fish and Wildlife Service (FWS)
- Roger Sheley, Agricultural Research Service (ARS)

Land Grant members:

- Doug Jardine, Kansas State University, Department of Plant Pathology
- Mike McDonough, University of Minnesota, Department of Entomology
- Rob Wiedenmann, University of Arkansas, Department of Entomology
- Steve Yaninek, Purdue University, Department of Entomology

The IPM³ Steering Committee also serves as the initial Curricula Committee.