

Driving the IPM Roadmap Forward: A Progress Report from the National IPM Interagency Subcommittee on Evaluation

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Background

In October 2004, individuals representing various entities of IPM (e.g., American Farmland Trust, CSREES, EPA, USDA Regional IPM Centers, Universities and others) formed the National IPM Interagency Group. The purpose of this group was to evaluate the current status of IPM throughout the nation and determine the next steps needed to drive the IPM Roadmap forward. A subcommittee on evaluation was formed to examine the economic, environmental, and health impacts associated with the adoption of IPM at the national level.

Current Status

The subcommittee has been actively working with the IPM Roadmap (<http://www.ncipmc.org/ipmroadmap/>), the IPM Matrix (Hoffman 2004) (Figure 1) and Logic Models (University of Wisconsin-Extension 2004) to develop a framework to evaluate IPM. IPM Models have been developed for each cell of the IPM Matrix. Two examples are provided (Figure 2 and 3). Each model provides a visual representation of how IPM can impact the environment, health, and economics in production agriculture, residential/public areas, and natural resources/recreational environments. To date, the subcommittee has developed 16 IPM Models.

Next Steps

- Each IPM Model will be reviewed by experts in the respective areas of IPM.
- The revised IPM Models will be used to develop outcome level indicators. These indicators will be examined for their usefulness in grants programs and reporting systems. Moreover, these indicators will focus on the environmental, health, and economic impacts associated with adoption of IPM.

Focus Area: Production Agriculture					
Impact Area: Environmental Impacts					
Roadmap Goal: Reduce potential risks to the environment from pesticide use through the use of cost-effective IPM practices					
Long-Term Outcomes Systematic Changes (in > 4 years)	Intermediate Outcomes Behavior, Practice and Policy Changes (in 1-4 years)	Short-Term Outcomes Knowledge, Awareness, Skill, Attitude Changes (in 3 months-1 year)	Target Audiences Who We Reach	Activities What We Do	Inputs What We Invest
<p>Reduce impacts of off-site movement of pesticides, sediments and nutrients into water bodies (streams, lakes, groundwater, etc.)</p> <p>Possible Measures:</p> <ul style="list-style-type: none"> •Measure decreased contaminants in water bodies •Measure delisting of water bodies with pesticide impairments •Measure increased population of native fish, aquatic insects, invertebrates, and/or freshwater mollusks •Measure improvements in soil quality and/or water quality as a result of adoption of conservation measures (NCRS NRI data) •Measure increased natural salmon habitat •Measure increased adoption and implementation of IPM 	<ul style="list-style-type: none"> •Reduce use of high risk pesticides •Increase adoption of pesticide application technology to minimize off-site impacts •Increase adoption of lower risk application technology •Increase adoption of lower risk timing of crop activities •Optimize nutrient applications •Increase use of reduced risk IPM tactics to protect public lands used for grazing •Increase adoption of conservation measures to protect natural resources from pesticides and nutrient runoff •Increase incentives for adoption of low risk tactics •Increase adoption of WIN-PST in conservation planning •Measure reduced use of high risk pesticides •Measure increased sales of precision application technology and equipment •Measure number of TMDLs implemented to address impairments •Measure decreased residue detections and amounts of pesticides in water resources •Measure decreased number of wells detecting pesticides •Measure increased diversity and abundance of aquatic species •Measure increased number of farmers filing nutrient management plans 	<ul style="list-style-type: none"> •Increase awareness of pesticide and nutrient impacts on habitats •Increase knowledge of lower risk materials •Increase knowledge about adopting IPM tactics to prevent off-site movement (e.g., buffer strips, cover crops, etc.) •Increase knowledge of environmental benefits of using precision application equipment and technology •Increase knowledge of conservation programs •Increase grower awareness of cost share options with NCRS •Increase Governmental Agencies awareness of IPM impacts •Collect baseline data to help measure intermediate and long-term impacts •Use self assessments, pre-test, post-test, and follow-up measurement tools to assess changes in knowledge, attitudes, skills, and awareness 	<ul style="list-style-type: none"> •Advocacy Groups (e.g., hunters, fishermen, water quality) •Extension •Farm & Commodity Groups •Farmers (with wood lots) •Ranchers •General Public •Governmental Agencies: APHIS, BLM, EPA, Forest Service, NCRS Conservation Planners, USDA, Media •Opinion Leaders •Pesticide Applicators •Pest Management Consultants •Retailers •Policymakers •State & Local Governments •Vets 	<ul style="list-style-type: none"> •Field Days •Interagency Cooperation •Media •Non-formal Educational Channels •One-on-one Consulting •Partnerships with Commodity Organizations •Print & Electronic Materials •Research & Demonstration •Training: PSEP/PAT •Web sites •Workshops 	<ul style="list-style-type: none"> •Money •People •Time •Interagency Cooperation •In-kind resources, including infrastructure for information delivery & support

Figure 2. IPM Model (Production Agriculture/Environmental Impacts)

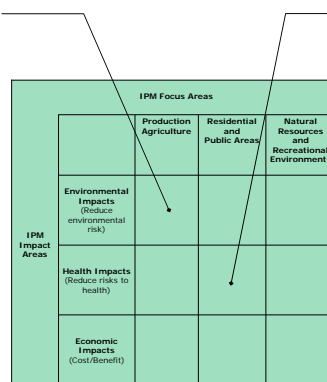


Figure 1. IPM Matrix (Hoffman 2004)

Focus Area: Residential and Public Areas (Schools and Child Care Facilities)					
Impact Area: Human Health Impacts					
Roadmap Goal: Reduce potential risks to human health from pesticide use through the use of cost-effective IPM practices					
Long-Term Outcomes Systematic Changes (in > 4 years)	Intermediate Outcomes Behavior, Practice and Policy Changes (in 1-4 years)	Short-Term Outcomes Knowledge, Awareness, Skill, Attitude Changes (in 3 months - 1 year)	Target Audiences Who We Reach	Activities What We Do	Inputs What We Invest
<p>Reduce children's and others exposure to pesticides in schools and child care facilities and thus improve the health and the learning environment</p> <p>Possible Measures:</p> <ul style="list-style-type: none"> •Measure reduced pesticide incident reporting •Measure reduced incidence of asthma or other health problems associated with pests or pesticides •Measure improvement in indoor air quality •Measure reduction in use of high risk pesticides •Measure increased adoption and implementation of IPM •Measure reduced school and child care facility absences 	<ul style="list-style-type: none"> •Reduce use of highly toxic pesticides •Increase adoption of low risk materials and tactics •Increase adoption of lower risk application equipment •Increase adoption of lower risk management activities •Schools, districts, and state implement IPM as low and/or policies •Schools and child care facilities change their practices by training staff and implementing IPM strategies •Parents and school boards request/support fewer pesticide inputs through use of increased IPM practice •Children influence parent's management of pests in their homes •Measure reduced use of high risk pesticides •Monitor tactic use—measure adoption •Monitor policy changes—measure changes in states and facilities that adopt IPM policies and facilities that become IPM Certified •Monitor reduced number of pest sightings from parents, teachers, staff •Measure increased government support or incentive funding, programs and participation •Measure increased NGO incentive funding, programs and participation 	<ul style="list-style-type: none"> •Improve knowledge of lower risk IPM tactics •Improve knowledge of efficacy of lower risk IPM tactics •Improve knowledge of cost effectiveness of lower risk IPM tactics •Increase knowledge of benefits of using precision application technology and equipment •Increase awareness of sources and effects of pesticide exposure •Schools and child care facilities are educated about the need to train staff to implement pest management strategies •Target audiences improve knowledge of IPM role's in reducing pests in schools and child care facilities •Collect baseline data to help measure medium and long term impacts (schools conduct baseline of current practices) •Use self assessments, pre-test/post-test and follow-up measurement tools to assess changes in knowledge, attitudes, satisfaction, awareness 	<ul style="list-style-type: none"> •Advocacy Groups •Building Managers •Children •Food Service Staff •Government Agencies (fed, state, local) •Grounds Managers •Extension •Janitorial Staff •Media •Pest Control Operators •PTO's/PITA's •Regulators & Lawmakers •School Boards •School Administrators •School Nurses •Teachers •Unions •Waste Management 	<ul style="list-style-type: none"> •Interagency Cooperation •Media •Non-Formal Educational Channels (education publications) •Partnerships with School Associations (e.g. Unions, PTA, etc.) •Print/Electronic Materials •Research & Demonstration •Web Sites •Workshops 	<ul style="list-style-type: none"> •Money •People •Time •Interagency Cooperation •In-kind resources, including infrastructure for information delivery and support

Figure 3. IPM Model (Residential and Public Areas/Human Health Impacts)

References Cited:

- Hoffman, W. 2004. Extension IPM Program Impact. Presentation at the National Entomological Society of America Meeting, Salt Lake City, UT
- University of Wisconsin-Extension. 2004. Program Development and Evaluation. Retrieved July 2005 from University of Wisconsin-Extension, Cooperative Extension, Program Development and Evaluation Unit Web Site: <http://www.uwex.edu/ces/pdandeval/evallogicmodel.html>

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