School IPM - Inside and Out

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Why should we care about School IPM?
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- **Children!**
- Children spend a major part of their day at school
- Children are more vulnerable than adults, to pests and pesticides
- Most schools face pest and pest management problems that affect their proper day-to-day operations
- Improvements in environmental health lead to improvements in human health and scholastic achievement
Major issues faced in schools:

• Routine pesticide applications, regardless of pest prevalence, wasted resources, unnecessary exposure, ineffective pest control

• School personnel encounter hindrances in making improvements through IPM practices, due to a lack of awareness, practical IPM training and evaluation of pest control efficacy
Integrated Pest Management (IPM) is a sustainable and cost-effective, risk-reduction strategy, used to solve pest problems with the least possible risk to people, property, and the environment.

The Solution:

- IPM!
- Integrated Pest Management is the Best way to manage and minimize pests in schools.

What is IPM?

Integrated Pest Management (IPM) is a sustainable and cost-effective, risk-reduction strategy, used to solve pest problems with the least possible risk to people, property, and the environment.
The Arizona School IPM Program:

- School IPM-Inside and Out
- Summer of 2013
- Multi-disciplinary approach targeting indoor and outdoor environments in schools

- Aims to reduce risks in schools due to pests and pesticides.
The Arizona School IPM Program:

Currently includes activities under three grant-funded efforts:

- USDA-NIFA
- EPA
- State Signature Program Initiative
“School IPM-Inside and Out”

Team with multi-disciplinary expertise

Shaku Nair, Community IPM (Coordinator)
Dawn H. Gouge, Public Health & Urban IPM
Ursula Schuch, Environmental Horticulture
Dave Kopec, Turf Management
Al Fournier, IPM Program Evaluation
Kai Umeda, Turf Management & Weed Control
Shujuan Li, Public Health IPM
Peter Warren, Urban Horticulture & Pollinator Health
Mike Wierda, Pesticide Safety
Peter Ellsworth, Director of the APMC & IPM Coordinator

Plus statewide community IPM Team of Extension Agents
1. “School IPM-Inside and Out”

- Part of University of Arizona Community IPM Program
- Dedicated program schools
- Initial indoor and outdoor IPM assessment
- Extensive interaction with school staff members to better understand pest issues, district goals and priorities
- Provide prioritized recommendations to administrators and facilities managers
- Monitor progress to achieve program goals
“School IPM-Inside and Out”

• Uses an expanded “Monroe Model” approach to implement improvements over time
• Addressing priority (health and safety) issues first
“School IPM-Inside and Out”

- Parameters monitored: pest incidents, pesticide use, pest awareness, legal compliance, etc.
- Regular contact maintained with school staff
- School staff (custodians, groundskeepers, nurses) and administrators trained about IPM and technical support provided
- Follow-up visits conducted throughout the year as required
- Progress evaluated annually
School IPM Inside and Out

IPM implementation data collected using survey instrument

School IPM Inside-and-Out
Interview Guide

School District:

School Name:

Date:

Interviewer:

Interviewee:

I. Identification of Key Contacts

1. First, please explain your (the interviewee) role in school / grounds / pest management.
   Name:
   Role:

2. As you know, our project focuses on improving pest management procedures and outcomes both inside and outside of the selected school site. Could you start by helping us identify the individuals responsible for the following at the school site?
   a. Building maintenance
   b. Indoor pest management decisions and implementation (this includes non-chemical pest control and the use of pesticides indoors)
“School IPM-Inside and Out”

• A lot of information is obtained through personal, one-on-one contact with school personnel
“School IPM-Inside and Out”: 2014-15 results

• Each school district and even school campuses within the same district have different priorities with respect to IPM

• Challenges to implementing IPM in schools include inadequate staffing, frequent personnel changes and budget constraints

• Existing staff often cannot attend available training opportunities due to heavy work load
All partner schools continued to implement these basic IPM practices to some extent:

**Indoors** -
- No calendar driven spraying
- Pest inspection and monitoring
- Use of pest sighting logs
- Pesticide application recordkeeping
- Pest-proofing in pest vulnerable areas
- Better waste management
- Enhanced training and communication among staff and faculty
- Ongoing evaluation of needs and program efficacy
All partner schools continued to implement these basic IPM practices to some extent:

**Outdoors** -

- Appropriately set mowing heights for turf
- Correct pruning for landscape shrubs and trees
- Optimal irrigation and fertilization
- Proper plant selection and replacement where possible
- Judicious use of least-hazardous pesticides
“School IPM-Inside and Out”

IPM practices that were commonly not observed:

- Pest monitoring records
- Predetermined thresholds for specific pests
- A formal, school-board approved IPM policy
- Minimal or no support or involvement from administration and faculty
Accomplishments that make us proud!

- Six pilot school sites in five school districts in Arizona selected for holistic “inside and out” approach
- Over 1,500 school and related staff trained annually
- More than 75% of districts eliminated use of pesticide products labeled “Warning” and “Danger” in school environments
- Pest incident reports dropped by 85%
- Approx. 150,000 students impacted directly
Outstanding success in bed bug management

Large inner-city High School District
Outstanding success in bed bug management

Large inner-city High School District

- Identified source of infestations
- Developed their own bed bug IPM protocol
- Regularly train their staff
- Help to educate other school districts

Champion IPM Coordinators!
Accomplishments that make us proud!

- More than 75% decrease in annual bed bug reports in Arizona inner-city high schools, 2 years after implementation of a bed bug IPM plan

- Institutional cost-effectiveness e.g., Arizona suburban school districts save an estimated $1,100 annually per school site by using IPM

- Monthly UA IPM newsletter distributed to over 5,000 school stakeholders nationwide

- National recognition
2. State Signature Program Initiative

“Enabling Schools to Practice and Implement Integrated Pest Management-Expansion of IPM in a Child’s World”

• To expand the program beyond metropolitan school districts, training events are conducted in rural counties with the involvement of local Extension agents.
• Educational topics are delivered based on the most important perceived pest issues requested by local stakeholders and known high priority health and safety issues.
State Signature Program Initiative

- Monroe Model 2000
- State Signature Program 2011
- Counties with “Inside & Out” 2013 have the largest percentage student population in the state

Map of Arizona Counties

- Counties and Tribal Lands 2000-2013
- Counties “Inside & Out” sites located
  - Counties 2013-2014
  - Counties 2015-2016
State Signature Program Initiative

- Rural schools often have higher pest tolerance levels, relatively poor pest management standards, and poor State and Federal law pesticide application compliance.

- Initial intent was to 1) provide educational materials and resources to local extension agents so that they are better able to respond to stakeholder requests; 2) facilitate school stakeholder connections with local Extension faculty; 3) jump-start rural programs by increasing awareness.
State Signature Program Initiative

- Extension faculty in remote stations have large geographical areas and vast subject matter coverage to support, therefore little or no time to devote for school IPM

- Extension faculty were able to be involved in education programs to a varying extent

- Overall results is to connect rural stakeholders to the visiting subject matter experts
Workshops also attract other stakeholder groups e.g., pest management technicians, master gardeners, homeowners, public health department staff, city parks and rec staff, etc.

Feedback from these workshops indicate that our trainings greatly helped participants change their perspectives about pest management in sensitive environments such as schools and homes.
State Signature Program Initiative

Signature Program IPM workshop participants provide anonymous feedback using clickers and Turning Point technology
Our trainees are awarded certificates of participation
Recognition for our local agents!
Conclusions drawn from “Inside & Out” and Signature Program approach

- Working intensively with school districts generates significant improvements in sustained adoption of IPM in the selected sites – but it is hugely labor intensive
- Infrequent visits to rural areas is beneficial for addressing hot-topic issues, but will not have significant impacts on in-school practices, unless local champions get engaged
Challenges in front of us

• Expanding and improving impacts

• Hybrid approach in planning stage
  • Communication with larger school network across the state
  • Focus on high priority health and safety, and legal compliance problems – achieved using one-time on-site inspections and education events (StopSchoolPests materials) and remote technical support

Building sustainable school IPM inside and out:
Developing and implementing standardized training materials and IPM proficiency exams for certification

StopSchoolPests.org
1) IPM Education Materials for School Community Members

2) IPM Certificate and proficiency certification

In-class or On-line

Our Message: What is Integrated Pest Management (IPM)?

• Common sense, science-based, risk-reduction strategy
  ➢ Focuses on long-term prevention of pests
  ➢ Least-hazardous tools and methods selected
  ➢ Most effective approach
  ➢ Sustainability and pollution prevention considerations involved
  ➢ Cost-effective

• IPM is a team effort!
Beginning IPM

• Programs begin because of:
  ➢ An unfortunate incident
  ➢ A champion
  ➢ Legislation
  ➢ Influence of peers

• Programs begin by:
  ➢ Increasing awareness
  ➢ Improving understanding of pests
  ➢ Engaging the community
Objectives:

1) Increase adoption of IPM in K-12 schools

2) Reduce pest complaints, and pest management risks

Through comprehensive, national education and certificate program for key groups in the school community
IPM First Steps

Building a Foundation:

- Outreach and education
- Initial inspections
- Monitoring and reporting pest sightings
- IPM plan or policy
- IPM coordination/committee
Education: one of the earliest steps in the implementation process

• Increases awareness
• Improves knowledge and understanding
• Leverages community involvement and investment
• Forges connections between subject experts and practitioners
• Maximizes potential for cooperation
What?

• Relevant learning objectives for key roles
• Weighted based on job responsibilities
• Certificate and certification
Stop School Pests event, Phoenix AZ. March 3rd 2015

School IPM partners review and weight individual learning objectives. These weights will be used in preparing exams.
Who?

- **Introduction to IPM (All hands)**
  1. Facility Manager
  2. Maintenance Staff
  3. Administrative Staff
  4. Teacher
  5. Food Service Staff
  6. Custodial Staff
  7. Landscape/Grounds Staff
  8. School Nurse
  9. Technician/PMP

The national 2020 school IPM implementation team identified **nine key stakeholder groups** related to school IPM.
Learning Objectives – Introduction to School IPM

**Learning Lesson 1: WHAT is IPM**
- IPM in understandable terms
- Risk reduction and benefits of IPM in schools
- Elements of IPM

**Learning Lesson 2: WHY do IPM**
- Health, environmental, economic risks of pests and pesticides

**Learning Lesson 3: WHO does IPM**
- Roles and responsibilities of school IPM team

**Learning Lesson 4: HOW to do IPM**
- Pest monitoring, inspecting and reporting
- Conducive conditions, vulnerable areas, corrective actions
- Pest groups and signs of pest infestations
- Keeping pests out of facilities
Modules

- View online
- Download
Who wants to know more about IPM?
Who thinks IPM education is necessary?

1. Facility Manager 94 92%
2. Maintenance Staff 78 78%
3. Administrative Staff 85 89%
4. Teacher 66 29%
5. Food Service Staff 60 72%
6. Custodial Staff 82 76%
7. Landscape and Grounds Staff 92 80%
8. School Nurse 85 36%
9. Technician/PMP 92 94%
E.g., School Nurses

- On-line survey responses differ from feedback received after teaching
- Stakeholders think they know what they need
- Need to trial the education modules before understanding the relevancies
Pilot testing of modules

School nurse module piloted in Arizona in February 2015

“I have been a school nurse for 25 years and I cannot believe I learned so much helpful information in just 1 hour!”

Nurse Mary Griffin, Apache Junction Unified School District, AZ
Where, When, How?

• Training materials:
  ➢ On-line self-guided
  ➢ Free-access downloadable, modifiable, PowerPoints for in-class use

• Certification
  ➢ National Pest Management Association exam
    – PMP Quality Pro for Schools knowledge standards
Advanced IPM certification for individuals who practice high-level IPM in schools

Advanced Certification options will be available for

- IPM Technician/PMP
- Facility Manager

In collaboration with the National Pest Management Association
Proficiency Exams and certificates

• Administrators, grounds staff, custodians, maintenance staff, nurses, food service staff and teachers can earn a certificate through the completion of training and passing a proficiency exam
Sustainability and growth

• Consensus content fosters broad buy-in and use
• Adaptable by trainers for in-class training events, and meeting region-specific needs
  • Builds appreciable value to create and sustain support from participants and sponsors
• Incentives for school districts to enroll all staff
  • Links to continuing education credits (CEs)/recognition/award programs both internal to districts and external
Sustainability and growth

• Supports and encourages train-the-trainer opportunities.
• Educators will learn how to use IPM to teach the common core standards and STEM.
• Participation delivers multiple benefits including pest and pesticide risk reduction, and improved food safety, fire safety, energy conservation and employee satisfaction!
Outreach and marketing

• Organizations including PTA/PTO, school business officials association, school facility manager associations, US EPA, state lead agencies and others recruited to assist with outreach and to provide opportunities for training in conjunction with their events
• National Pest Management Association will provide technician certification
• National IPM Working Group with more than 225 members will be provided with resources and recruited to do outreach to school districts, pest management professionals and landscape care professionals that they work with
National collaborations:
2 federal agencies
11 state agencies
19 academic institutions
8 school district staff
2 tribes
9 advocacy agencies
4 industry partners
Current status

All completed materials have been placed online at http://cals.arizona.edu/apmc/StopSchoolPests.html
Current status

• Online training modules will be available to stakeholders or any individual seeking multimedia presentations they can view and study from any location later this year.

• On-line materials will be housed as part of the iSchool Pest Manager project resources. 

http://ischoolpestmanager.org/
Acknowledgments

- UA Statewide Community IPM Team
- National StopSchoolPests Team
- Phoenix Union High School District
- Gilbert Public Schools
- Mesa Public Schools
- Catalina Foothills School District
- Maricopa Unified School District
Resources, further information

Arizona School IPM Program: School IPM Inside & Out [http://cals.arizona.edu/apmc/schoolIPM.html](http://cals.arizona.edu/apmc/schoolIPM.html)

The Stop School Pests Project [http://cals.arizona.edu/apmc/StopSchoolPests.html](http://cals.arizona.edu/apmc/StopSchoolPests.html)

EPA: Managing Pests in Schools [https://www.epa.gov/managing-pests-schools](https://www.epa.gov/managing-pests-schools)
Contact

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