Final
Providing Integrated Pest Management Services in Schools and Child Care Settings

April 30, 2015

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Funding for this project has been provided in full or in part through a grant awarded by the Department of Pesticide Regulation (DPR). The contents of this document do not necessarily reflect the views and policies of DPR, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

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Abbreviations

CA SPCB: California Structural Pest Control Board
CE: Continuing Education
CERCH: Center for Environmental Research and Children's Health
DPR: California Department of Pesticide Regulation
ECE: Early Childhood Education
HSA: Healthy Schools Act
PCO: Pest Control Operator
PCOC: Pest Control Operators of California
IPM: Integrated Pest Management
PMP: Pest Management Professional
PAPA: Pesticide Applicators Professional Association
SPCB: Structural Pest Control Board
UC IPM: University of California Statewide Integrated Pest Management Program
DPR-QAL: Department of Pesticide Regulation-Qualified Applicator License
SPCB-OPR: Structural Pest Control Board-Operator License
SPCB-FR: Structural Pest Control Board-Field Representative License
SPCB-App: Structural Pest Control Board-Applicator License

Project Overview

Many children in California spend the majority of their waking hours in schools and/or early childhood education (ECE) facilities, where pest problems and pesticide use are common.[1] Pests and vermin pose disease risks to children and may produce potent allergens. Additionally, several studies indicate that pesticide exposures may have adverse health effects on the development and health of young children.[2-6] Recent studies also indicate that pest management professionals (PMPs) make up to 70% of pesticide applications in California's childcare settings.[1] This project aimed to increase knowledge about, and adoption of, integrated pest management (IPM) practices in child care settings in California by developing an IPM continuing education (CE) course for PMPs serving ECE facilities. A needs assessment survey and group interviews of California PMPs were conducted to obtain information on their current knowledge of the Healthy Schools Act (HSA), current pest control practices in child care, knowledge of pesticide exposure risks for young children, obstacles to implementing IPM in child care, and preferences for the format and content of the IPM ECE CE course.

Based on the needs assessment, a CE course was developed that addressed: (1) health concerns related to pests and pesticide use in schools and ECE facilities, (2) overview of the California Healthy Schools Act, (3) implementation of IPM in schools and ECE settings, and (4) business aspects related to implementation of IPM in these environments. The online version will be hosted in perpetuity as part of the UC IPM Learning Management System (http://www.ipm.ucanr.edu/training/school-and-child-care-ipm.html). The course was approved for two CE units: 1 unit of "Pesticide Laws and Regulations" and 1 unit of "Other" continuing education credits are available from the California Department of Pesticide Regulation (DPR); and 1 hour of "Rules and Regulations" and 1 hour of "IPM" continuing education credits are available from the California Structural Pest Control Board (SPCB). To date, 647 participants have completed the course, providing 266 same-day post-course evaluations. An additional 62 were interviewed 2-4 months after completing the course. Overall response to the course was positive, with an average rating of 3.5 on a scale of 1-4 (with 4 the highest score), and 99% of participants reporting that they were satisfied or very satisfied with the course. Sixty-four percent reported that they were more likely to seek work in schools and child care, and 82% expected to use more IPM methods in future work. Among 62 PMPs who completed a brief phone interview 2-4 months after completing the course, 66% indicated the course increased their awareness of IPM, and 58% wanted more IPM training. Twenty-six percent reported they had already increased their use of IPM, and 55% reported that their companies planned to increase marketing to schools and child care. Eighty-five percent reported that the course had increased their understanding of the Healthy Schools Act, and 74% would like more training on the act. Ninety-eight percent reported that they would recommend the course to colleagues.

Subsequent discussions revealed that PMPs wanted to be kept informed as the law and DPR and SPCB policies are developed and implemented. Pest management professionals also indicated that they expect IPM to become the standard practice for pest control in virtually all settings, with more rapid adoption in school and child care due to recent revisions to the

Healthy Schools Act. Similar to the discussions and comments provided during the needs assessment, PMPs who had taken the course described poor cooperation by clients as a key obstacle to implementing IPM in schools and child care. Suggestions for improving or enhancing the course included the development of video instruction and day-long, hands-on training where specific methods are demonstrated. There was also strong interest in more information related to bed bugs; a growing problem that many PMPs expected could become a focus in child care.

Section 1: Introduction

1.1 Pesticide Use and Exposure in ECE Facilities

In California, many infants and young children spend as much as 10 hours per day, 5 days a week, in child care,[7,8] with licensed centers serving about 717,000 children and family child care homes serving about 336,000 children.[9] Additionally, 146,000 staff, many of child-bearing age, work in the approximately 45,000 licensed facilities in California.[10] California has the largest number of licensed ECE centers in the U.S. and approximately 65% of all children spend time in childcare before starting kindergarten. In a 2006 study, the National Exposure Research Laboratory of the U.S. EPA found pesticide residues in every ECE center tested. Of 39 pesticides tested, at least one showed up in every center in the study. Individual centers reported using anywhere from one to ten pesticide products (mean (SD)=3.0(1.9)).[7,8] In a recent California study, Bradman et al. (2012) detected pyrethroid pesticides in 100% of dust samples collected from 40 ECE facilities located in Alameda or Monterey County.[11] A 2010 survey of pesticide use in California ECE centers by CERCH showed that 55% of centers reported using pesticides, with 47% reporting the use of sprays or foggers that can leave residues on surfaces and in the air and potentially expose children and staff. Pesticides were applied most often to control ants, spiders, and cockroaches. As many as one in five centers were applying pesticides on a weekly or monthly basis.[1] These types of scheduled applications are not consistent with an IPM program and may not be necessary if no specific pests have been identified.

Pesticides used in and around ECE facilities may result in exposures to young children and staff. Sprayed chemicals in particular may become airborne and settle on floors, toys, counters, walls, and other surfaces.[12,13] Several factors increase both children's exposures and their vulnerability to these exposures as compared with adults. Children spend more time on the floor, where residues can transfer to skin and be absorbed.[14,15] Concentrations of some pesticides are four to six times higher near the floor than at an adult's breathing level. Pesticide levels in air resulting from baseboard applications can be ~4-5 times higher in the air 10 inches from the floor, the air a crawling child breathes, compared to air 40 inches from the floor, where a seated adult breathes. Young children also frequently place their hands and objects in their mouths, resulting in non-dietary ingestion of pesticides.[16,17] They are also less developed immunologically, physiologically, and neurologically, and, therefore, may be more susceptible to the adverse effects of chemicals and toxins.[15,18,19]

Research in residential environments clearly demonstrates that the implementation of IPM strategies reduces pest infestation, pesticide use, and human exposures to pesticides.[20] Given the large number of very young children potentially being exposed to pesticides, the California legislature enacted AB 2865 in 2007, which extended the HSA of 2000 to all California ECE centers.

1.2 The Healthy Schools Act and California Childcare

The Healthy Schools Act (HSA), initially passed in 2000, was enacted in response to parental concern about the health effects of pesticide use at ECE sites on children and school staff in California's public schools. The HSA regulates the use of pesticides in schools and private child care facilities. The law established the right of California parents and school staff to know when pesticides are to be used in California public schools, encouraged the use of least toxic pest management methods in schools as state policy, and required the California Department of Pesticide Regulation (DPR) to collect pesticide use information from schools and to promote and facilitate the voluntary adoption of IPM in public schools. The HSA was extended to licensed child care centers in 2007, and in 2014, new revisions require all schools and child care facilities to have IPM plans, submit pesticide use records to DPR, and require pesticide safety training for school and child care staff who apply pesticides, as well as the PMPs serving these environments. The HSA defines IPM as a means of preventing and suppressing pest problems using a combination of monitoring and record keeping, establishing pest thresholds, and employing non-chemical methods to manage pests. Chemical controls that pose the least possible hazard to human health and the environment are used only with careful monitoring, when non-chemical treatments have failed, and when pre-established thresholds have been exceeded. Table 1-1 identifies common pest management practices in commercial buildings and whether the method is consistent with IPM principles.

Table 1-1. Pest Management Practices

Pest Management Method	Potential for Human Exposure[a]	IPM Compatibility	Regulated under the HSA
Broadcast liquid sprays, dusts, or granules with EPA registered pesticides	Higher	Yes, when warranted	Yes – all components
Pest foggers using EPA registered pesticides	Higher	Almost never	Yes – all components
Bait or poison trap using EPA registered pesticides.	Lower	Yes	Exempt from notification and posting if containerized. Report use of registered pesticides to DPR
Food grade 25b materials.	Lower	Yes	Exempt from notification, posting, and reporting.
Sticky fly strip or mouse/rat trap	Lower	Yes, out of reach of children	No
Remove food sources	None	Yes	No
Clean the area	None	Yes	No
Sealed cracks and openings	None	Yes	No
Installed screens or other barriers	None	Yes	No
Fixed leaks	None	Yes	No
Wasp traps	None	Yes	No
[a]Exposure potential based on literature.[1,21]			

In a 2010 survey of ECE centers' pest problems and pesticide use conducted by CERCH, about half of the responding ECE centers that employed pesticide sprays did not always notify parents, as required by the HSA.[1] Among the ECE centers using pesticides, 69% reported that PMPs applied the materials, and 63% reported that PMPs were a primary source of pest management information, indicating that PMPs are key stakeholders influencing pesticide use in child care. A key recommendation of this 2010 report was to "develop and disseminate resources for pest management companies." According to the report, "Continuing education training resources for PMPs that describe how to implement an integrated pest management (IPM) program in child care settings and the requirements of the HSA for child care need to be developed and disseminated."[1]

1.3 Integrated Pest Management Training Resources for California Pest Management Professionals Working in Schools and Early Care and Education (ECE) Facilities

Scope of Work

The objectives of the project, and a description of their realization in bold, were:

1. To establish an organizational structure to ensure successful completion of the project.

We established a working management team (Asa Bradman, Andrew Sutherland, Luis Agurto, and Vickie Leonard) to produce, develop and deliver an in-person and online continuing education (CE) course for California pest management professionals (PMPs) licensed under the SPCB and DPR. The management team worked closely with Cheryl Reynolds at UC IPM and DPR scientists and received ongoing review and support from the Alliance Team, including active outreach to, and support from, the Pest Control Operators of California (PCOC).

2. To identify knowledge deficits and training interests of PMPs working, or interested in working, in school and child care settings.

We conducted a needs assessment survey and phone interviews with PMPs to inform development of the CE course. Information obtained covered PMPs' current practices while

working in schools and child care, knowledge of IPM, challenges to implementing IPM approaches, knowledge of the HSA, interest in a course on IPM in school and ECE facilities and recommendations for the content. We also asked about what options PMPs consider when deciding on the best pest management approach and if they discuss different treatment options with their clients. See below for more information.

3-4. To address knowledge deficits and interests identified in the needs assessment survey and focus groups by developing an in-person and online continuing education course for licensed PMPs

We developed an in-person and online two-hour CE course addressing key needs: (1) health concerns related to pests and pesticide use in ECE facilities, (2) overview of the HSA, (3) implementation of IPM, and (4) business aspects related to implementation of IPM in school and child care environments. The online version will be hosted in perpetuity as part of the UC IPM Learning Management System (http://www.ipm.ucanr.edu/training/school-and-child-care-ipm.html). The course was approved for two CE units: 1 unit of "Pesticide Laws and Regulations" and 1 unit of "Other" continuing education credits are available from CA DPR; 1 hour of "Rules and Regulations" and 1 hour of "IPM" continuing education credits are available from the Structural Pest Control Board.

5. To market the CE module to PMPs.

We marketed the CE course to PMPs and to Pesticide Applicators through professional organizations including PCOC and the Pesticide Applicators Professional Association (PAPA). We also conducted mailings to PMPs and conducted outreach through state and local conferences, child care provider organizations, the California DSS Child Care Licensing Division, and certification organizations such as GreenPro and Ecowise.

6. To conduct 8 in-person training workshops using the CE module materials for PMPs in California.

We conducted 9 in-person trainings statewide for PMPs at Redding (1), Stockton (1), Fremont (1), Irvine (2), San Diego (2), San Jose (1), and Hayward (1). 511 people attended these courses.

7. To train 50 PMPs using the online module by the end of the grant cycle.

To date, 136 people have completed the online course.

8. To evaluate the trainings.

Two hundred and sixty six participants completed course evaluations on the same day of their class. We also conducted a phone survey of 62 PMPs who completed the course 2-4 months earlier. Results of this survey are presented in this report.

8. To incentivize PMPs to take the CE module.

We conducted extensive outreach to child care organizations and providers in California to make them aware of the training and to encourage them to hire PMPs who understand and use IPM and have taken the CE module. We have placed articles in newsletters, e-newsletters, and websites and utilized social media to promote the course. Organizations participating in this effort include the PCOC, California Child Care Resource and Referral Network, Head Start Association of California, DSS Child Care Licensing Division, Alameda County Child Care Planning Council, UC Berkeley School of Public Health, UCSF Pediatric Environmental Health Specialty Unit, UC IPM, among others.

We also developed a public list of PMPs who have successfully completed the CE course that is hosted on the CERCH website (http://cerch.org/research-programs/child-care/integrated-pest-management-in-child-care-centers-a-course-for-applicators/list-of-applicators-ipm/). Currently, 140 PMPs have given permission to be listed on the site. The link to this list has been widely disseminated as part of the outreach efforts described above.

9. To assess the effectiveness of the project by a summary report.

Final report herein.

1.4 Project Description and Summary

Background

This project initially focused on IPM resources for PMPs serving child care facilities. However, in September, 2014, Governor Brown signed SB1405, which enacted new training requirements for PMPs serving schools and child care and also placed new training and reporting requirements on school and child care employees. Thus, the scope of the current project was expanded to include child care *and* schools. For this project, the Center for Environmental Research and Children's health (CERCH), the University of California Statewide IPM Program, Pestec, Inc, and the UCSF Pediatric Environmental Health Specialty Unit partnered with the California DPR and the PCOC, the leading trade organization serving the state's PMPs, to increase the adoption of IPM in schools and childcare settings in California by:

1) developing a continuing education (CE) course approved by the SPCB and DPR that addresses concerns about pesticide exposures to children, IPM, PMPs' responsibilities under the Healthy Schools Act (HSA), and business aspects of implementing IPM to help pest control companies profitably incorporate new pest management approaches that do not depend solely on pesticide use as the unit of sale; and
2) conducting outreach to ECE directors and administrators to raise awareness about the CE course and the importance of adopting IPM and contracting with PMPs who know

about and practice IPM, thereby creating greater awareness in ECE programs about IPM and a larger market for PMPs who use IPM pest management practices.

Section 2: Needs Assessment

In order to accomplish the goals set out for this project, a needs assessment survey and four group interviews were conducted to determine PMPs' current knowledge of the HSA, current pest control practices in childcare, knowledge of pesticide exposure risks for young children, knowledge of IPM, obstacles to implementing IPM, and the PMPs' preference for the format and content of the IPM ECE facilities course.

2.1 Survey

Two hundred PMPs were identified through the SPCB or DPR license look-up database and were mailed questionnaires addressing pest management practices and challenges encountered with school and child care clients. The questionnaire was in English and could be answered on paper or online. Self-addressed reply envelopes were provided. The link to the online survey was also sent out through the PCOC newsletter to approximately 1200 members.

2.2 Group Interviews

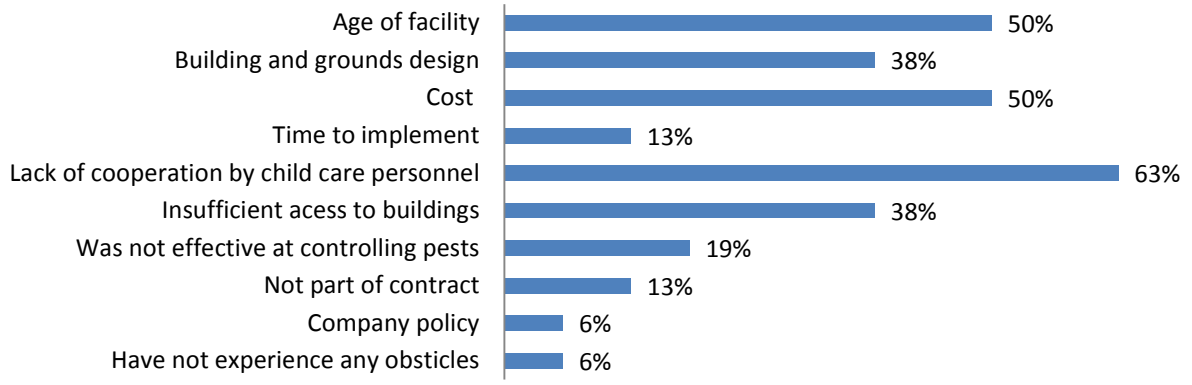
The questions for the group interviews were very similar to the question on the survey, but were asked in an open-ended format. The group interviews consisted of an in-person focus group and, because many PMPs were busy and not interested in an in-person meeting, open-ended telephone interviews. A total of 11 PMPs were interviewed. The questions covered PMPs' current practices while working in ECE setting, knowledge of IPM, challenges to implementing IPM approaches, knowledge of the HSA, interest in a course on IPM in ECE facilities and recommendations for the content and structure of this workshop. We also asked about what options they consider when deciding on the best pest management approach and if they discuss different treatment options with their clients. Additionally, PMPs were asked if customers wanted problems to be addressed using IPM or "green" methods. Furthermore, PMPs were asked if the HSA has affected their work.

2.3 Survey results

Twenty paper surveys were completed and mailed back, and 11 electronic surveys were completed; in total, 31 surveys were completed by PMPs. The low response rate was disappointing but still provided useful information that tended to confirm discussions with Alliance Team members and other discussions with PMPs.

Forty-eight percent of PMP respondents stated that they had serviced an ECE facility for pre-kindergarten children in the past year. The main reasons given for not treating an ECE center were that the PMP had not been contacted for a job (69%), the PMP had not received any contracts (50%), and/or the PMP thought there were too many regulations involved (31%). One of the PMPs expressed this concern by stating, "*We do not service child care facilities. The liability factor is too high*."

Figure 2-1. Obstacles to Implementing IPM in Childcare

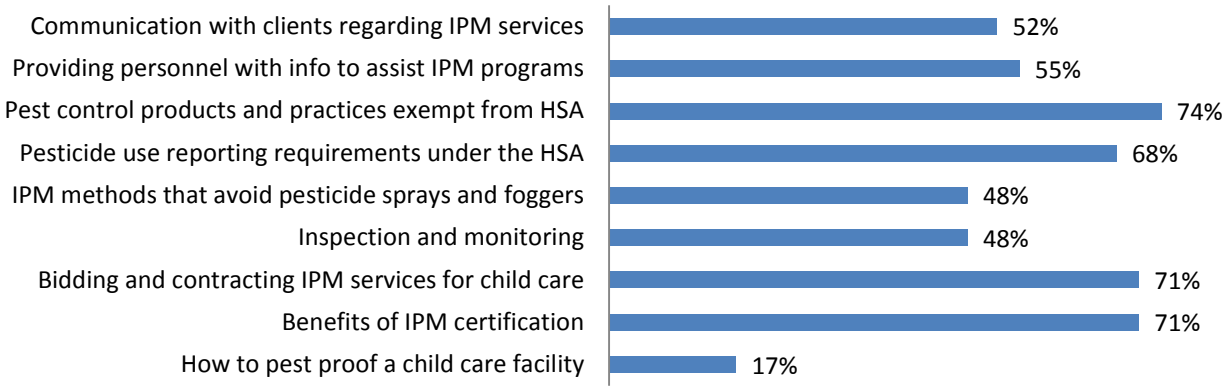


Among all the PMPs, 87% were very familiar with IPM, and 94% (29/31) knew that PMPs did not need a separate license to offer pest exclusion services. The major obstacles to implementing IPM in childcare were: lack of cooperation by ECE personnel (63%), age of facility (50%), cost (50%), building and grounds design (38%), and insufficient access to buildings (38%) (See Figure 2-1 for complete list).

PMPs wanted more information on several different topics, including a sample IPM contract (84%), PCOs' responsibility under the HSA (74%), and educational resources available online from UC IPM (65%).

The PMPs voiced significant interest in a workshop on using IPM in childcare environments that provided continuing education units; 76% said that they would participate in such a workshop. The primary topics PMPs wanted covered in the IPM training were the benefits of IPM certification (71%), bidding and contracting IPM services for ECE (71%), pesticide use reporting requirements under the HSA (68%) and pest control products and practices exempt from HSA (74%) (See Figure 2-2 for complete list). The PMPs wanted to take the training online (71%), using printed materials (68%), or in-person (45%).

Figure 2-2. Topics PMPs would like covered in the IPM training.



2.4 Summary of Survey Comments and Group Interviews

As noted above, the survey included several open ended questions for comments by respondents. Additionally, group interviews were conducted with PCOs and field representatives who treat pest problems. These PMPs had worked in the pest control sector for 18-41 years and were leaders in their respective companies, generally large firms operating in California and other western states. In each of the group interviews, at least one participant had treated an ECE facility. The primary pests of concern were ants, rodents, spiders and birds (pigeons). The PMPs reported that they had regular maintenance appointments with ECE facilities and responded to special requests. While treating pest problem(s), the PMPs stated that they interact with facility personnel when: 1) gaining access to the facility; 2) discussing maintenance; 3) showing photos of pests and building conditions that promote pest infestations; 4) providing information on the products used to treat the pest issue; and 5) documenting pest control problems. The PMPs stated that they chose the ideal treatment by taking into account the pest, pest density, the client, and the HSA guidelines.

All of the PMPs in the group interviews stated that they use IPM in their work. One PMP defined IPM as, "*IPM means you inspect to determine pest activity and conditions conducive to pest activity, you prescribe and do treatments. You use baits first and spray if necessary, concentrating on cracks-and-crevices. Follow up is also important*." One PMP mentioned that he had refused jobs, because the ECE facility wanted the PMP to spray pesticides, and the PMP wanted to use IPM methods. According to the PMPs, one of the major issues with implementing IPM in ECE facilities is that top-down communication within facilities means that teachers often do not know about the IPM plan or the HSA requirements. Furthermore, ECE staff did not always follow pest prevention recommendations, because "*they're short-handed and have little time and money for pest proofing and sanitation*." Another PMP mentioned providing pest management services to ECE facilities is difficult because "*it requires after-hours service"* and *"some are private and have their own rules*." Several of the PMPs stated that facility staff members need to be educated on pest prevention and treatment strategies. One of

the PMPs mentioned that "*we used to hold 'brown bag lunches' with staff at our centers to talk about pest-proofing and sanitation measures*."

In all of the group interviews the PMPs held an IPM or "green" certification. The PMPs added that clients tend to prefer IPM methods, however implementing IPM methods is limited by time and money, especially since "*the customer doesn't usually want to pay for IPM*." Another issue brought up by PMPs is that customers and providers do not fully understand IPM methods. One PMP commented on this issue: "*There is a strong incentive to stick to bait, but providers don't understand alternatives. When we use a plant oil pesticide, people react as if it is a hard product*."

The PMPs in the group interviews also commented on feedback from the survey (see Sections 2.1 & 3.1). One comment by a PMP that "*there are too many regulations to service child care*" and "*the liability is too high*" was supported by another statement: "*Agreed. Lots of changes have occurred over time. The industry has not been recognized for its adaptations*." However, a consistent theme emerged from other participants that the regulations are in fact not onerous. For example, "*I disagree. This is a misunderstanding*" and "*If you are doing the job right, then the liability is the same as always*." In general, there was a strong theme that it was possible to follow the rules and provide effective service.

Another important theme was lack of cooperation by clients thereby reducing the effectiveness of pest control. This feeling was expressed directly in extensive comments: "*Many facilities choose to do nothing because of the extra work that it takes to comply with IPM recommendations. This causes a bigger pest problem. Facilities need to understand that IPM requires more frequent visits that will likely cost more and be willing to make the investment in a professional. Many facility operators expect good IPM to cost less or be less frequent. Good IPM is more frequent and costs more. If the pests are ignored or janitors use over-the-counter products, the problem will just get worse and the purpose of IPM is circumvented. We need distribution of information helping facilities understand what IPM is and that professional help is necessary to protect the children.*"

Several participants in the group interviews agreed with this statement above, including the feeling that "*There is a lack of follow-up by child care [ECE] personnel*" and that communication is vital: "*administration-level communication is needed to convey the value of IPM.*"

There were also general comments on the survey and in discussions that more information on IPM is needed for PMPs and one explicit comment that more CE courses are needed (and that they are hard to find). Another added that more specific information is needed concerning what methods work and ways to communicate with ECE staff. Finally, one PMP added that more research is needed on assessing which methods work.

PMPs were asked if they would be interested in participating in a workshop on IPM in ECE facilities. The PMPs were interested in the training, especially if CE units were offered for California and if possible other states. The PMPs wanted the training to cover:

- Hands-on pest proofing
- Benefits of IPM certification
- Contracting IPM services for ECE facilities
- Inspection and monitoring
- Pesticide use reporting requirements under the HSA
- Pest exclusion services training
- Communication with clients regarding IPM services

Additionally, PMPs stated that they would like opportunities to meet with school/child care personnel and be provided with contact information of ECE programs to enable them to offer their professional services. Another PMP added that as part of the pesticide use reporting requirements under the HSA, the PMP would like to "*see a proactive list with step-by-step guidelines on best practices, monitoring, after-hours considerations, required documents, etc*" to facilitate compliance.

For pest exclusion services, the PMPs wanted the training to cover methodologies and materials, documentation approaches and/or "*ways to communicate the value of IPM*." The PMPs expressed that they want the training in the format of an in-person training, online training module, and hands-on workshops to learn about how to implement IPM services. The PMPs want the in-person training to include videos. One PMP found online training and webinars less effective, while other PMPs wanted online training like Univar's online courses.

Section 3: Continuing Education Course on Integrated Pest Management Resources for Pest Management Professionals Serving ECE Centers

The information gathered during outreach to PMPs informed development of the CE course which ultimately included four sections addressing key needs: pesticide use and health concerns related to pests and pesticides, the HSA, IPM, and business aspects related to implementation of IPM in ECE environments.

3.1 Course Description

As noted earlier, this project initially focused on IPM resources for PMPs serving child care facilities. However, in September, 2014, Governor Brown signed SB1405, which enacted new training requirements for PMPs serving schools and child care and also placed new training and reporting requirements on school and child care employees. Thus, the scope of the current project was expanded to include child care *and* schools. Based on discussions among Management and Alliance Team members and the survey and focus groups, the following learning objectives were adopted:

1. **Child Care and Schools in California**

- Understand the structure of child care licensing:
    - Center-based
    - Family day-care
    - Other
- Learn general information on the number of child care facilities and schools in California
- Know basic information on pest problems in school and child care environments

2. **Vulnerability of Children to Environmental Exposures**

- Understand that young children are more highly exposed to environmental contaminants than adults
- Recognize the risks to children from pests
- Recognize the risk to children from exposure to pesticides

3. **Healthy Schools Act**

- Understand the original Act of 2000 and how it evolved to current law
- Know what types of ECE environments must comply with the law and which ones are exempt
- Understand the requirements of the new law:
    - Notification and recordkeeping
    - Responsibility of property owners
    - Pesticide use reporting
    - Exempt products and formulations
    - Training requirements
    - Responsibilities placed on schools and child care providers
    - Responsibilities placed on PMPs

4. **Integrated Pest Management**

- Have a basic knowledge of the history and evolution of IPM
- Understand the overall goal of IPM: to reduce the overall risk to humans and the environment while providing desired level of pest management
- List some advantages of adopting an IPM program
    - Elimination of unnecessary pesticide applications
    - Reduction of risks to human health and the environment
    - Effective, sustainable, and long-term pest management

5. **Changes in society**

- Recognize the problems that social media and internet searches cause to misinform the public
- Understand current issues in urban areas
    - *S*urface water contamination
    - Invasive pests

6. Definition of IPM

- Know that IPM is based on scientific research
- Recognize that IPM focuses on long-term prevention
- Know that IPM requires regular monitoring
- Understand that correct pest identification is key to determining management strategy
- Recognize the need for combining/integrating several environmentally-sound techniques and working from the knowledge of the biology of the pest

7. Components of an IPM program

- List the primary components of an IPM program
  - Accurate pest identification
  - Knowledge of pest biology and interactions in the environment
  - Focus on prevention
  - Monitoring
  - Integration of environmentally-sound management methods
    - Biological
    - Cultural
    - Physical/mechanical
    - Chemical

8. Identifying pests

- Recognize the importance of correct pest identification
- Understand that misidentification can lead to improper management practices

9. Preventing pests

- Recognize that prevention is the most important part of an IPM program
- Describe ways that pests can be prevented
    - Exclusion (door sweeps, screens, sealing of cracks and crevices)
    - Sanitation
    - Remove clutter where pests can hide (harborage management)

10. Monitoring

- Understand the importance of monitoring and recordkeeping
- Describe various ways to monitor for pests
    - Traps
    - Flashlight and mirrors

11. Thresholds

- Recognize that thresholds vary depending on the pest

12. Biological control

- Explain what biological control is
    - Any activity of one species that reduces the adverse effect of other species
- List different types of natural enemies
    - Predators
    - Parasites and parasitoids
    - Pathogens
- Describe ways to enhance biological control
    - Provide water, nectar
    - Control ants
    - Avoid pesticides that kill natural enemies

13. Cultural control

- Explain what cultural control is
    - Modification of normal management practices to decrease pest establishment, reproduction, dispersal, and survival
- List various methods of cultural control
    - Sanitation
    - Habitat modification

14. Physical/Mechanical Control

- Explain what physical or mechanical controls
    - Physical or mechanical measures taken to specifically kill pests or make the environment unsuitable for pest entry, survival or reproduction
- Provide examples of physical controls
    - Physical barriers
    - Vacuum
    - Heat or cold treatment
    - Steam delivery

15. Chemical control

- Know that pesticides can be a part of an IPM program
- Understand that many times, pesticides are not needed
- Know that pesticides should only be used when nonchemical methods are ineffective and when pests reach intolerable levels
- Recognize that if pesticides are used, they should be used in combination with other methods
- Know that pesticides should be chosen carefully and that least toxic materials should be chosen
- List ways to apply pesticides that reduce exposure
    - Bait stations
    - Dusts in wall voids

- Know that if pesticides are used, that you must follow label directions, wear protective equipment, and dispose of pesticides properly
- Know how pesticides can move off target and into the environment

16. Integrating knowledge

- For several specific pests which occur in ECE centers, describe an IPM approach to management

17. Business Aspects of IPM

- Recognize importance of team approach to implementing IPM
- Learn about importance of information tracking and efficacy evaluation
- Recognize management and cost tracking approaches that prioritize pest management as the unit of sale, not a spray event
- Learn about new-construction pest prevention inspections
- Recognize ancillary services such as biohazard clean-up
- Understand needs of schools and child care providers and explore opportunities to provide HSA compliance services as part of service contracts

Based on these learning objectives, the final course, **Providing Integrated Pest Management Services in Schools and Child Care Settings,** was developed in two formats, in-person and online (http://www.ipm.ucanr.edu/training/school-and-child-care-ipm.html). The content for both versions were largely the same. Additional handouts included:

Fact Sheets

1. Healthy Schools Act
2. Biohazard cleaning

Handouts

1. Sample IPM contracts and guidance when hiring a pest control company
2. Model IPM policy for PMPs to provide to ECE providers
3. Sample notification letter
4. ECE-specific IPM inspection checklist that PMPs can give to ECE providers

Physical copies and content-loaded USB memory sticks were distributed at the in-person course. Fact sheets were also posted online with the online CE course, and links in the online course provide options to access more information. See Appendix 1 for current course content and narrative. The course can also be accessed at the following link:

http://www.ipm.ucanr.edu/training/school-and-child-care-ipm.html

3.2 Course Trainings

For both the online and in-person course, attendees consisted primarily of PMPs licensed under the SPCB or DPR. However, a number of unlicensed people completed the course, including county agricultural commissioner and other environmental health personnel, school district maintenance directors and staff, tribal lands pest control managers, and child care providers, among others. Interest in the course increased dramatically later in fall 2014 and early 2015 as news of SB1405 spread. Among licensed pest control PMPs (especially management personnel), there was a preference for the in-person course because they felt in-person training was more effective than online training. However, many PMPs appreciated the convenience of being able to complete the course online. As of March 24, 2015, 647 individuals have completed the course, including 511 attendees of the in-person course and 136 online.

A total of nine in-person courses were conducted:

Table 3-1.

City	Date	Collaborating Organization	Attendees	Evaluations Completed
Fremont	May 21, 2014	Santa Clara Valley PCOC	27	13
Stockton	Aug 12, 2014	Mid-Cal PCOC	14	4
Irvine	Aug 15, 2014 AM	UCCE Orange County	21	10
Irvine	Aug 15, 2014 PM	UCCE Orange County	19	12
San Jose	Dec 9, 2014	PAPA	243	25
Hayward	Jan 15, 2015	Alameda County	34	22
Redding	Feb 4, 2015	Redding PCOC	67	20
San Diego	Feb 24, 2015 AM	San Diego PCOC	53	40
San Diego	Feb 24, 2015 PM	San Diego PCOC	33	17
Sonoma	Delayed	Vintage-Coastal PCOC	--	--
Sacramento	Expected June, 2015	Big Valley PCOC	--	--
Total			**511**	**163**

Online course participants included:

Table 3-2.

Year	Number	Evaluations Completed
2014	50	50
2015	86	53
Total	**136**	**103**

3.3 Evaluation

Same Day Post-Course Evaluation

Table 3-3 summarizes evaluations submitted immediately after completing the course. Overall, we received 266 evaluations, representing 42% of all attendees. Among in-person course attendees, 163 (32%) completed evaluations; among online course attendees, 103 (82%) completed evaluations. The higher evaluation completion rate among online attendees is likely due to the web-based program which prompts participants to link to the evaluation form. Responses to the evaluation questions were categorically ordered 1-4, with 1=strongly disagree, 2=disagree, 3=agree, and 4=strongly agree. Thus, higher scores are more favorable, and scores=3 or 4 indicate positive responses.

The response to the course was consistently positive across all metrics. There was a trend toward greater satisfaction with the in-person course than the online course. The course and the instructors were rated positively by 99% of respondents and 99% also felt that the goals of the course were clearly identified. The materials and handouts were rated positively by 98% of participants. Ninety-eight percent of respondents felt the course was the appropriate length and would recommend it to other PMPs. Importantly, respondents also indicated they would be more likely to seek work in schools and child care (64%) and to use more IPM methods in future work (82%) (See Table 3-4).

Table 3-3. Course Evaluation Summary

Metric	Mean Score			Percent w/ positive score (3 or 4)
	All (n=266)	In-person (n=163)	Online (n=103)	
Satisfied with course:	3.5	3.6	3.3	99%
Satisfied with instructors:	3.5	3.6	3.4	99%
Goals clearly identified:	3.5	3.6	3.4	99%
Topics were relevant:	3.5	3.6	3.3	94%
Materials were clear/well-presented:	3.5	3.7	3.4	98%
The handouts were helpful:	3.5	3.7	3.4	98%
Course was appropriate in length:	3.5	3.5	3.4	98%
Would recommend to other PMPs:	3.5	3.6	3.4	98%

Table 3-4. Future plans of PMPs completing course		
	More likely to seek work in schools and child care (%)	Likely to use more IPM methods in future work (%)
All (n=266)	59	89
Online (n=103)	52	99
In-person (n=163)	64	82

Post-Course Evaluation

Methods: We conducted a phone interview of 62 PMPs who had completed the course 2-4 months earlier. Potential participants were contacted by phone based on license information provided during course registration. All information was collected anonymously. We initially planned to interview 75 PMPs, but many did not have the time to complete the follow-up interview or did not return calls or other communications. Overall, we attempted to contact 138 potential participants, and successfully administered brief phone interviews with 62, for a participation rate of 45%. Although relatively low, this participation rate was substantially better compared to the needs assessment survey. Sixteen of the 62 participants agreed to answer open-ended questions about IPM practices and challenges in schools and child care (Table 3-5).

Results: Findings from our phone survey of a subset of 62 PMPs who took the CE course evidenced continued satisfaction with the course and interest in IPM methods two to four months after completing the course. Almost half (47%) of the respondents had been in the field for 16 or more years; 26% had been in the field for 6 to 15 years and 27% were in the field for 1 to 5 years. Of those surveyed, 23% had taken the course online and 77% took an in-person course. License type included DPR-QAL (15%), SPCB-OPR (31%), SPCB-FR (39%), and SPCB-App (16%).

Eighty-five percent of respondents reported that the course increased their awareness and understanding of the California Healthy Schools Act, 66% reported increased understanding and awareness of IPM, 58% reported they would like more training on IPM, and 74% reported that they would like more training about the HSA, and 82% wanted to receive updates on any changes to the HSA.

When asked about whether they had looked up information on IPM after attending the course, 19% reported accessing the DPR website, 16% the UC IPM website, 6% the CERCH website, and 3% looked at other sources. Fifty-five percent did not access further information about IPM after the course. When asked whether the course provided them with practical information to implement IPM in schools and child care centers, 79% agreed that it had and 26% reported increased use of IPM in their, or their company's, practice, and 87% reported that they are likely to increase their use of IPM in the future.

Thirty-four percent of respondents reported working in schools or child care and 8% had *new* accounts with schools or child care programs, while 55% planned to increase their marketing to schools or child care centers in the future.

Only 37% of respondents reported being certified by a third party and all of those were certified by Green Pro, though 54% were considering obtaining a third party "green" certification.

Additional insights on these results were obtained in response to open-ended questions. See discussion on these responses below.

Table 3.5: Pest management course evaluation 2-4 months after completion (N=62).

License type	
DPR-QAL	15%
SPCB-OPR	31%
SPCB-FR	39%
SPCB-App	16%
Course Format Attended	
Online	23%
In-Person	77%
Did the course increase your awareness and understanding of the California Healthy Schools Act?	
Yes	85%
No	15%
Would you like more training about the California Healthy Schools Act?	
Yes	74%
No	26%
Did the course increase your understanding and awareness of IPM?	
Yes	66%
No	34%
Have you looked up additional information on IPM? If so, what was the source?	
DPR web site	19%
UC IPM web site	16%
CERCH web site	6%
Other	3%
None	55%

Would you like more training on IPM?

Yes	58%
No	42%

Did the course provide you with practical information to implement IPM in schools or child care?

Yes	79%
No	21%

Have you (or your company) increased use of IPM in your practice?

Yes	26%
No	74%

Are you (or your company) likely to increase your use of IPM in your practice?

Yes	87%
No	13%

Do you (or your company) currently serve schools or child care?

Yes	34%
No	66%

Do you (or your company) have new accounts with schools or child care?

Yes	8%
No	92%

Do you (or your company) expect to increase your marketing to schools or child care?

Yes	55%
No	45%

Does your company have a third-party "green" certification? If so, which one?

GreenPro	37%
Green Shield	0%
EcoWise	0%
None	63%

If your company is not green certified, has your company considered obtaining a third party green certification?

Yes	54%
No	46%

Would you like to keep up to date on changes to the Healthy Schools Act?	
Yes	82%
No	18%
How long have you worked in pest control?	
16+ Years	47%
6-15 years	26%
1-5 Years	27%

*Numbers in table may not add up to 100% due to rounding

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Of the 16 PMPs who agreed to answer open-ended questions, all held Branch 2 SPCB licenses, and 10 also held DPR licenses. Eleven held Operator licenses, three held Field Representative licenses, and two were Applicators. All 16 provided services in schools or child care and considered themselves as knowledgeable about IPM methods; 13 held third-party green certifications. In general, those willing to take the time to answer these questions held Operator or other more senior positions in their respective pest control companies and were particularly interested in school and child care environments. They were also not likely to be representative of the larger population of PMPs that completed the course.

Overall, the comments provided by PMPs were very similar to those reported during the needs-assessment phase of the study. Most reported client cooperation as a key challenge in the successful implementation of IPM programs and expressed frustration at how frequently clients did not comply with simple recommendations to prevent pest problems. All of these PMPs expected IPM pest management approaches to become the industry standard, especially in environments where children spend time. They also felt that staff-level training in their companies was essential, and most indicated that they will continue to seek IPM training opportunities outside their companies. Many PMPs felt that recent revisions to the Healthy Schools Act would substantially affect their business and increase the demand for IPM services statewide, especially in schools, which have stronger administrative structures and are more centralized than child care centers. Many commented that among some school staff, but especially among child care providers, there was not enough understanding about the requirements of the Healthy Schools Act or the advantages of IPM strategies that minimize administrative burdens. In general, they strongly encouraged the continued development and dissemination of IPM training resources to both ECE staff and PMPs.

In terms of training for PMPs, a common theme was an interest in half- or day-long hands-on workshops demonstrating IPM methods, especially pest exclusion and prevention methods. There was also interest in more information about IPM methods for bed bugs (a concern also raised during the in-person course).

Another theme raised by these PMPs was the challenge IPM posed for their business model, and they appreciated the course content related to business aspects of IPM. However, 56% of

the PMPs felt that their IPM contracts were sometimes less profitable and created additional costs for their clients, either in direct billing or additional staff time required for communication. An important theme, however, among PMPs was the expectation that as IPM became the industry standard, streamlined pest management methods and client-relation systems would develop and control long-term costs.

Section 4: Dissemination activities

We conducted extensive outreach and dissemination activities to PMPs and child care providers and provider organizations to promote the in-person and online course. Table 4.1 summarizes these activities. Direct outreach to PMPs included inclusion of course information in the PCOC newsletter, direct contact with each PCOC District Chair, posting information on the UC IPM web sites, a mailing of 500 hardcopy newsletters to PMPs around the state, and outreach to the Pesticide Applicators Professional Association (PAPA). This outreach ensured good attendance at in-person course presentations, and the online course continues to be regularly used. Interest in the course increased after information about 2014 revisions to the Healthy Schools Act was disseminated, and we expect increasing interest in the course over time. Outreach to child care providers and provider organizations included e-newsletters reaching thousands of individuals (see Table 4.1). To date, the list of licensed PMPs who have completed the course has received 45 page views, and we expect this to increase as awareness of the revised Healthy Schools Act becomes more widespread and the new requirements of the law are implemented. Links to CERCH web pages, including the list of PMPs who have completed the course and permitted public listing of their information, are:

http://cerch.org/research-programs/child-care/integrated-pest-management-in-child-care-centers-a-course-for-applicators/

http://cerch.org/research-programs/child-care/integrated-pest-management-in-child-care-centers-a-course-for-applicators/healthy-schools-act-for-schools-and-child-care-centers/

http://cerch.org/research-programs/child-care/integrated-pest-management-in-child-care-centers-a-course-for-applicators/list-of-applicators-ipm/

Table 4.1. Targeted outreach to pest management professionals and child care providers.				
Medium	**Organization/Presenter**	**Audience**	**Date**	**Population Reached/Page Views**
Web Page	UC IPM Blog/Landing Page	General	Ongoing	1,168
Presentation	Vickie Leonard, UCSF PEHSU	Monterey County Head Start maintenance staff	7/31/2014	45
Presentation	Vickie Leonard, UCSF PEHSU	Mid-Atlantic Center for Children's Health and Environment, National Conference, Washington DC	September, 2014	135
E-newsletter	PCOC Central Office	PCOC membership/Pest control companies/PMPs	December, 2014	1200 PCOC member pest control companies
E-newsletter	California Child Care Regulatory Workgroup	Child care policy makers	January, 2015	19
Mailing	CERCH	PMPs - statewide	January, 2015	250
Mailing	CERCH	PMPs - statewide	February, 2015	250
Web Page/E-newsletter	School of Public Health, UC Berkeley	General	February, 2015	>10,000
Presentation	Asa Bradman, CERCH	First Five Summit – child care providers, policy makers, directors	2/12/2015	30
Presentation	Luis Agurto, Pestec	Professional Association of Pesticide Applicators (PAPA)	2/20/2015	125
E-newsletter	CERCH	General	2/23/2015	964
E-newsletter	California Child Care Referral Network	Child care providers and directors	2/23/2015	175
E-newsletter	System-wide UC Child Care Programs	Child care directors	2/24/2015	200
Presentation	Andrew Sutherland, UC IPM	PCOC TriDistrict PMPs	2/26/2015	60
E-newsletter	Calif. Dept. Of Social Services Care Licensing Division	Child care licensees; Inspectors;	March, 2015	>5,000

		Provider organizations		
E-newsletter	Head Start Association – Southern and Northern California	Child care teachers, directors serving 105,000 children	3/1/2015	>800
Presentation	Vickie Leonard, UCSF PEHSU	California Association for the Education of Young Children, Sacramento, CA	March, 2015	30
E-newsletter	Alameda County Green Child Care Newsletter	Child care providers	3/10/2015	>200
Press Release/E-newsletter	UC ANR/UC IPM	UC ANR/ UC IPM stakeholders	3/11/2015	
E-newsletter	U.S. EPA Region IX	General	4/18/2015	1000

Section 5: Conclusions and Summary

The funding for a CE module for PMPs was prescient, as SB1405 was enacted during the funding period, making the module an even more important resource for PMPs working, or intending to work, in schools or child care facilities. The module was evaluated very positively by PMPs taking the course in person as well as online. Many PMPs who participated in follow up interviews were either practicing IPM more as a result of the training, or they anticipated that they would be practicing IPM more in the future. There was also an increase in the number of PMPs who were doing work in schools or child care centers. There was clearly a need for this kind of training. Respondents particularly appreciated the information on developing a business module for IPM. The frustrations that PMPs experienced in working with schools and child care centers that did not cooperate with the IPM program point to the need for continued education of school and child care staff about IPM. More work needs to be done on the schools and child care side to promote IPM, make the legal requirements of the HSA clear, and educate staff about the health risks of both pests and pesticides and the benefits of IPM as a reduced-risk pest management approach. There are more than 10,000 schools and 14,500 child care centers in California, serving more than seven million children. While online education is likely to be the best way to reach the greatest number of PMPs serving this diverse population, there was a clear preference among our course participants for in-person training with opportunities for discussion, and a strong interest in additional hands-on training and video's demonstrating IPM methods.

Section 6: Recommendations

With the passage of SB1405, the importance of, and need for, this kind of training on IPM for PMPs working in schools and child care centers has been magnified. As an online module, this CE course is well positioned to meet the initial needs of PMPs looking to increase their knowledge of IPM and the HSA. However, as our follow-up interviews documented, there is a need for additional educational efforts on IPM and the HSA. The online CE module needs to be advertised and marketed to child care centers and schools as well as to PMPs. Child care centers need to be made aware of the importance of fully partnering with PMPs trying to implement IPM in their centers. Lack of follow-up on the part of schools and child care centers was an important deterrent to PMPs trying to use IPM methods in schools and child care centers. Hands-on training and demonstrations of IPM methods were also needs cited by PMPs in our follow-up interviews. Given that almost 90% of PMPs reported that they are likely to increase their use of IPM in the future, it is reasonable to expect that training needs will increase substantially.

In sum, our recommendations are as follows:

1. Conduct more outreach and training on IPM to PMPs serving schools and child care.
2. Develop and conduct hands-on IPM workshops for PMPs as well as for child care centers and schools. Consider developing participatory training with school districts staff, child care providers, and PMPs all present in the same room so they can share common findings/concerns and increase awareness about the need to follow up on pest control recommendations. School and child care staff would receive training, and PMPs could receive CE units. These trainings could be coordinated with DPR school training workshops, and there could be a real-time online forum for discussing information of concern to schools and PMPs.
3. Consider dissemination of additional sample language for IPM contracts. The information may be particularly helpful for smaller pest control companies. As a handout, we provided examples of IPM contract content and guidance. PCOC representatives cautioned against providing full boiler plate contract templates because contracts can become embroiled in legal disputes.
4. Develop and disseminate videos demonstrating IPM tactics in schools and child care. We promoted the DPR videos as educational tools, both for PMPs and school and child care officials. Many participants commented that they would like to see videos that demonstrate hands-on IPM tactics.
5. Develop content addressing bed bugs in schools and child care.
6. Ensure new information related to implementation of the Healthy Schools Act is incorporated into the CE course.
7. Evaluate the efficacy and feasibility of IPM practices for schools and child care centers.
8. Conduct economic analysis of the costs and benefits of adopting IPM in schools and child care.
9. Continue outreach to schools and child care programs addressing:

- the importance of adopting IPM policies and practices.
- the new training requirements specified in the HSA.
- the availability of the online CE module.
- choosing a PMP from the list of PMPs who have completed the IPM module.
- the importance of following up on PMPs' recommendations for implementing IPM in their facilities. Lack of cooperation by school and child care staff appears to be a key obstacle to the successful implementation of IPM programs.

Section 7: Future Activities

The online version of the course will be maintained by UC IPM in perpetuity, with periodic updates and revisions to reflect changes in laws and practices. We anticipate making changes to the module in 2016 as DPR operationalizes recent revisions to the Healthy Schools Act. We will also maintain and update the public list of PMPs who have completed the course on the CERCH website and continue to disseminate information about the course to child care providers and their organizations. Finally we are exploring the possibility of dividing the current course into two additional stand-alone courses, one addressing the Healthy Schools Act components and one addressing IPM, for 1 CE unit each. Essentially, we would divide the existing course in half. This would allow PMPs with less time to complete a unit, and also allow the course instructors to present independently where skillsets don't overlap.

Acknowledgements

This project was supported by the California Department of Pesticide Regulation (DPR). The content of this report is the sole responsibility of the authors and does not necessarily reflect DPR policy. The authors thank B. Ibewiro, B. Messenger, M. Robertson, D. Downie, N. Davidson, S. Kessler, J. Lipman, T. Drlik, M. Hopper, J. Adams, and D. Jordan for helping develop and review content and materials for the survey and CE course; J. Lipman for her advice on strategies to reach childcare and improve communication between child care administrators and PMPs; and M. Hopper, J. Adams, and the PCOC for disseminating the link to the online survey through a PCOC newsletter. Finally, we thank all of the PMPs who participated in the survey and group interviews.

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Appendices

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Appendix 1: Online and In-person Slide Presentation and Quiz/Tests

Welcome to the continuing education course on providing pest management services in school and child care settings. This module is intended for pest management professionals (PMPs) who provide, or would like to provide, pest management services in schools and child care centers. California requires that PMPs who work in child care centers and schools comply with a law called The Healthy Schools Act (HSA). In this presentation we'll present information that will help you provide integrated pest management, or IPM, services in schools and child care centers, comply with the Healthy Schools Act, and grow your business. This educational unit was prepared by a team of professionals from pest management, public health, nursing, and entomology backgrounds. We hope you find it helpful.

Schools and child care facilities play an important role in the lives of children and families. You have an important role to play in keeping them safe and healthy where children can learn and grow.

We'll start with an overview of what we will be covering in this presentation.

Introduction

In this course, you will learn about

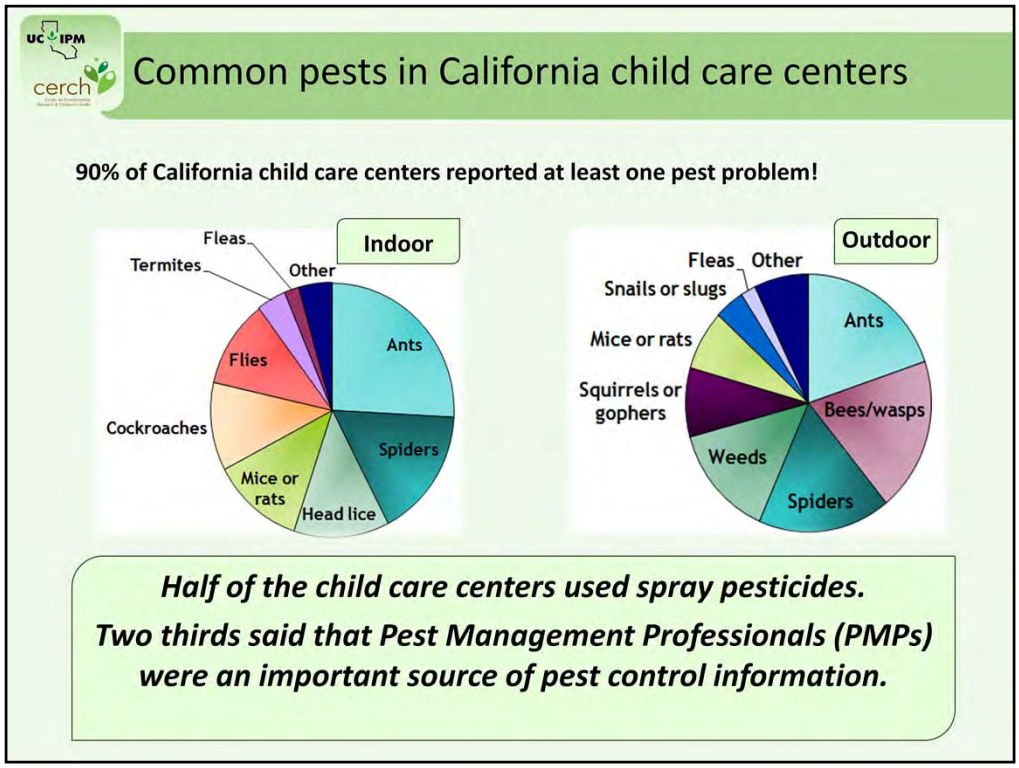
- The Healthy Schools Act
- Health risks to children and staff
- IPM in schools/child care
- IPM as a business model

We'll start by talking about the Healthy Schools Act, a law passed in California that encourages the use of integrated pest management, or IPM, in schools and child care centers and gives parents and the public the right to know when and where certain pesticides are used in school and child care center facilities. The law also mandates certain reporting requirements for PMPs. We'll talk about what the law requires you to report when you work in schools and child care centers, as well as what the law requires of schools and child care centers. Then we'll review the health risks that pesticides pose to young children. Finally, we will talk about IPM: what it is, the advantages of IPM, how to do it and case study examples. We'll end with a discussion of IPM as a great way to promote your pest management business.

There are about 45,000 licensed child care facilities in California. Many of California's young children spend their waking hours in child care. There are around 2.5 million children under the age of five living in California. About one million of them, or 40%, are in licensed child care. Because so many kids spend time in child care (up to 50 hours a week), environmental risks in child care centers have a big impact.

There are twice as many licensed child care centers in California as there are elementary schools. In surveys we've done, 90% of child care centers report that they have at least one pest problem. And many say that PMPs are an important source of information on pest management. It is a large market for pest management professionals! There is a big need for PMP services in child care centers, especially PMPs who understand the Healthy Schools Act and IPM!

After the Healthy Schools Act was extended to private child care centers in 2007, the Department of Pesticide Regulation funded a survey to better understand the educational needs of child care centers around pest management. The survey, completed in 2010, was designed to identify the kinds of pest problems that are common in child care centers and the pesticide use practices of these centers.



The survey found that pest problems are common in child care centers. Ants, cockroaches, rodents and spiders (along with head lice) were the most commonly reported indoor pests. Ants, spiders, bees/wasps and weeds were the most common pests outdoors. About half of those surveyed used spray pesticides in and around their facilities. These pesticides/application methods pose higher risks to young children. More than half of the centers reported that PMPs were an important source of information and advice on how to manage pest problems in their facilities. Since the survey was completed, we have also been hearing more and more about bed bugs in child care centers, along with the inappropriate use of foggers and sprays that are ineffective against bed bugs.

Background

K-12 schools in California

- There are more than 5,000 elementary schools in California and 2,500 middle and high schools
- These schools serve over 6 million children
- Like child care settings, many report pest problems such as ants and rodents. Most have extensive outdoor playground and turf facilities that also require pest management

There are more than 5,000 elementary schools in California and about 2,500 middle and high schools. These schools serve over 6 million children. Like child care settings, many of these facilities report pest problems that need pest management, especially rodents and ants. Schools for older children usually include extensive playground, turf, and other outdoor environments that also may require pest management.

Young children are uniquely vulnerable to the health effects of chemicals. One reason is that they have higher exposures compared to adults. For example, young children eat more, drink more and breathe more air than adults for their weight. They have more skin covering their bodies compared to adults, and their skin is thinner and absorbs pesticides more easily than an adult's skin. They also spend their time close to the floor where pesticide residues and other chemicals collect in dust, and where chemicals in the air collect because they are heavier. Young children also put everything in their mouths. Research shows that eating dust is an important source of exposures to infants. Many chemicals persist in indoor environments much longer than in outdoor environments where they are broken down by the sun and water. One national study of child care facilities found residues of pesticides that were banned a long time ago. The red boxes in the slide show the higher relative exposure in small children compared to adults.

Roberts, J.W., et al., *Monitoring and reducing exposure of infants to pollutants in house dust. Rev Environ Contam Toxicol, 2009.* ***201: p. 1-39.***

Why should we be concerned about children?

- Children are also less developed than adults
- They are immunologically, physiologically, and neurologically immature
- They are less able to metabolize chemicals

Bottom Line

Children are more vulnerable than adults

Children's bodies, especially their brains, are immature and developing rapidly. This development can be disrupted by exposure to pesticides. Young children are also less able to metabolize chemicals into non-toxic forms that can be excreted from the body. Thus, they may be more affected by an exposure that would not affect an adult.

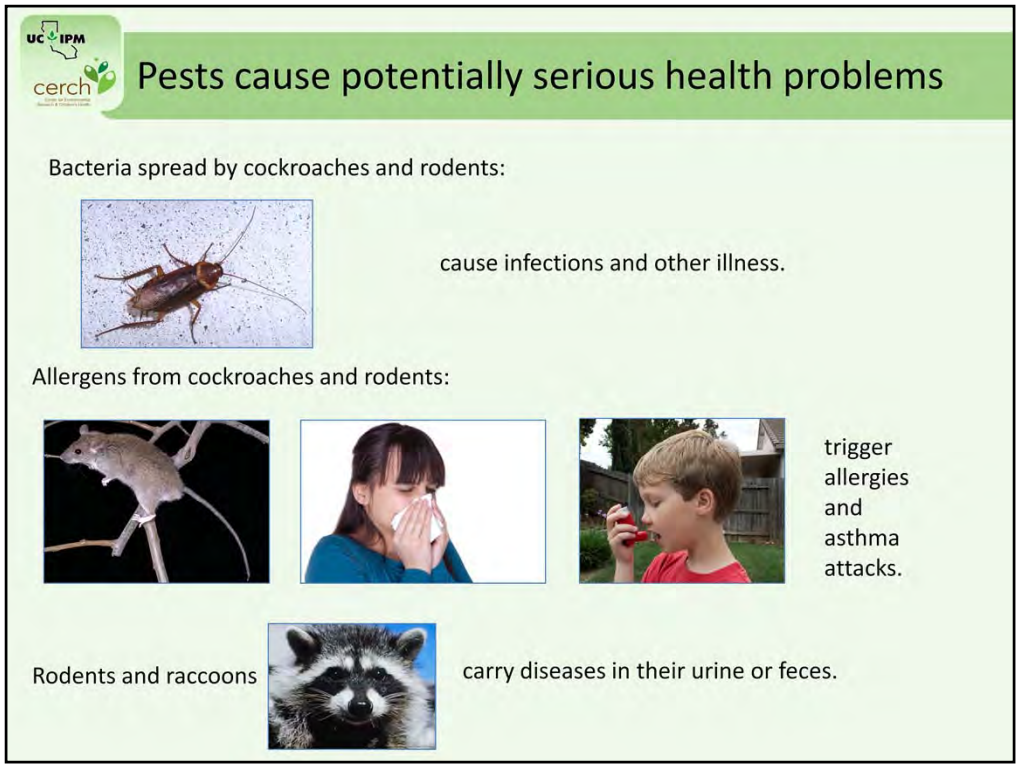
Why should we be concerned about children?

- Some pesticides have been associated with behavioral problems, asthma, and other health concerns in children.
- These studies don't prove causation, but are suggestive
- The dose makes the poison, but very low doses may have adverse effects on very young children.

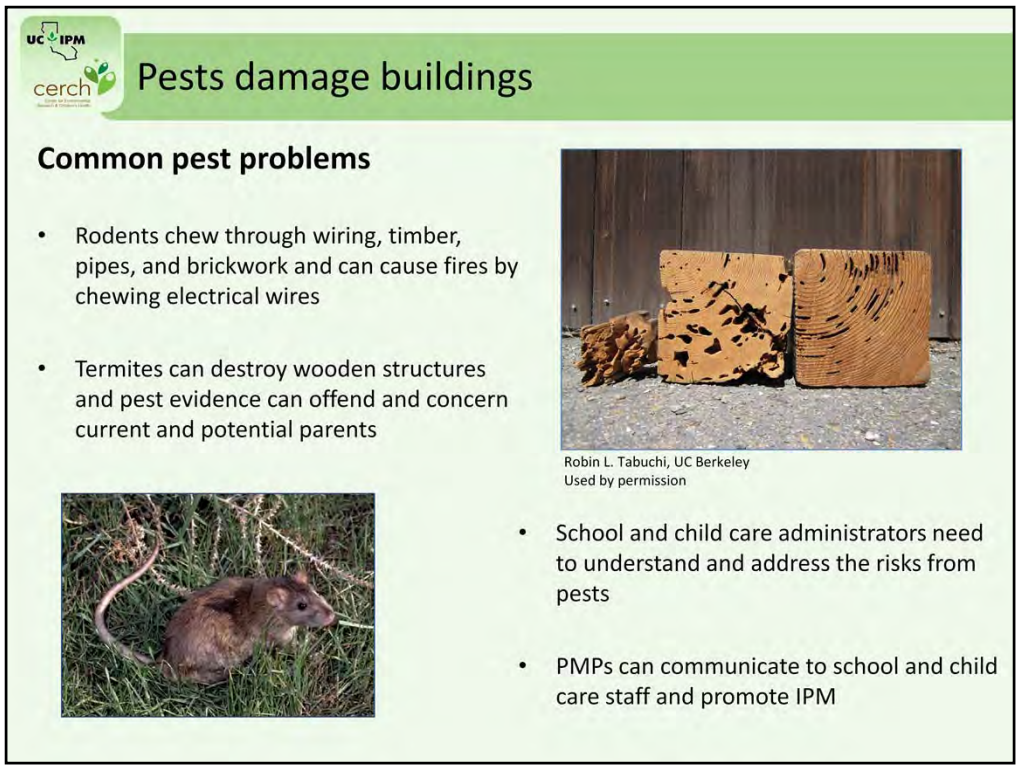
Reducing children's exposures at critical times may reduce lifetime health costs, improve early learning, and increase adult productivity.

Research tells us that exposure to certain pesticides is associated with health problems in young children, including neurodevelopment problems, low birth weight, asthma and cancer. These studies don't prove causation, but are suggestive.

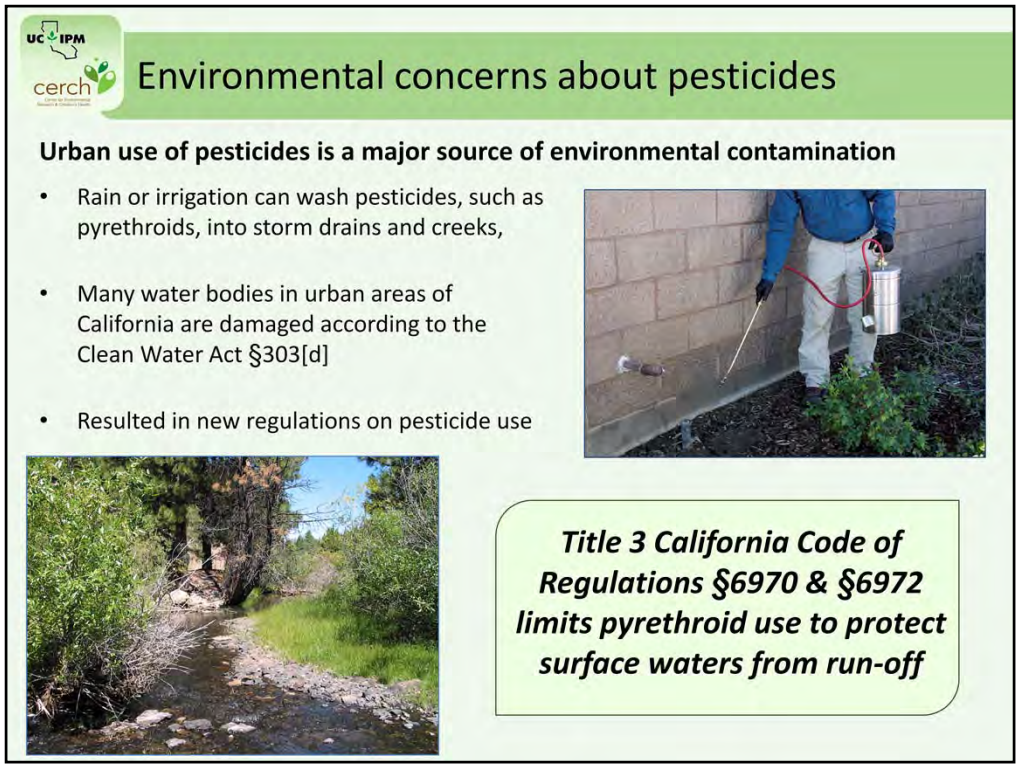
Many pesticides primarily act on the nervous systems of insects and mammals. That's why we are concerned about their potential effects on children's developing abilities to think, move, learn and behave.



Pests, too, can affect the health of children and staff in schools and child care facilities. Asthma, allergies, and infections can all be caused by pests that are common in schools and child care facilities. Bacteria spread by cockroaches and rodents can cause infections and other illnesses. Allergens from cockroaches and rodents can trigger allergies and asthma attacks. Rodents and raccoons can carry diseases in their urine or feces. For example, the roundworm in raccoon feces can cause brain damage if very young children are exposed.



Pests can also damage buildings. Rodents can cause damage by chewing through wiring, timber, pipes, and brickwork. They can cause fires by chewing electrical wires. Termites can destroy wooden structures, and evidence of pests offends and concerns parents, both current and potential. Schools and child care administrators need to understand, and address, the risks from pests that are present in their buildings and grounds. You, the PMP are best equipped to explain these risks to school and child care center staff. You are also well positioned to promote IPM in schools and child care.

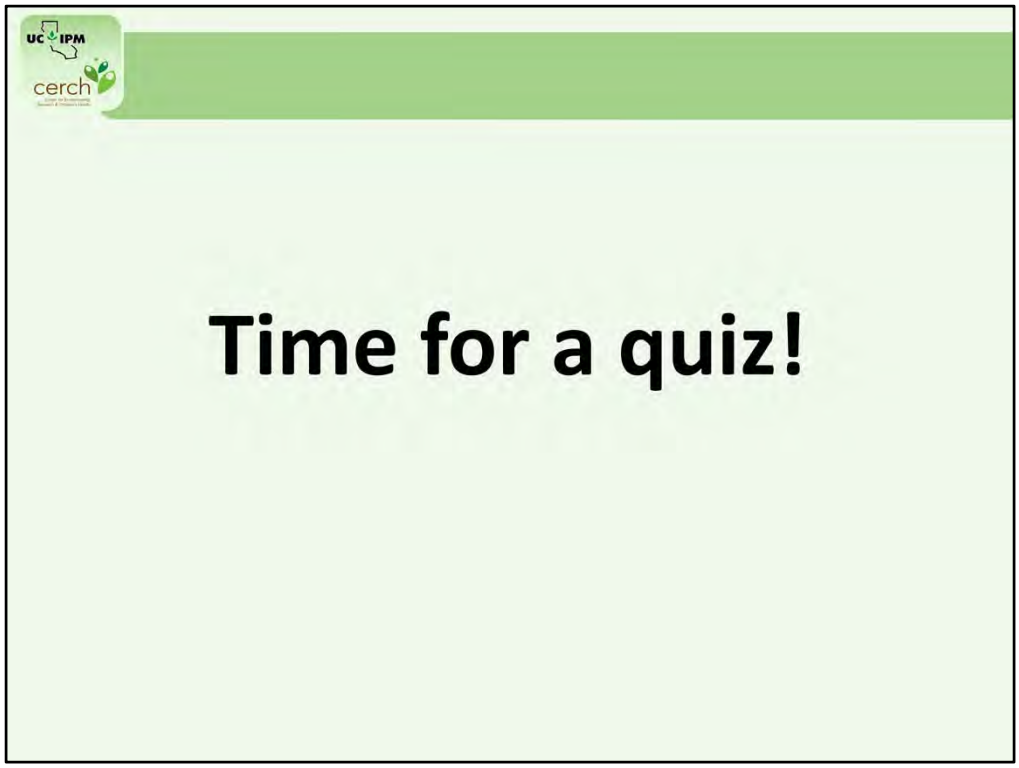


The urban population of California is growing, and many Californians don't realize that *urban* use of pesticides, often by the general public, is a major source of environmental contamination. In the last 20 years, pyrethroid pesticides have become especially common, as have neonicotinoids, such as imidacloprid. When pesticides are applied to hard surfaces, rain or irrigation can wash them into storm drains and creeks. Both the U.S. EPA and the State Water Resources Control Board (State Water Board) have determined that many water bodies in urban areas of California are damaged from pesticides according to the Clean Water Act §303(d). This has resulted in new regulations on pesticide use, such as Title 3 California Code of Regulations Sections 6970 and 6972 which protect surface water from pyrethroids.

IPM is a logical choice

The health risks of pests and the human health and environmental concerns about pesticides make IPM a logical approach to pest management in schools and child care settings

Human health and environmental concerns about pesticide use make IPM a logical approach to pest management in schools and child care settings.



Now let's stop for a quick quiz.

The Healthy Schools Act is a law passed in California that encourages the use of IPM in schools and child care centers and gives people the right to know when and where certain pesticides are used.

- (●) A) True
- ( ) B) False

Sorry, that is not right. Please try again.

Great job! Click anywhere to continue.

Submit Clear

Which of the following are common pest problems in schools and child care centers?

- A) Ants
- B) Roaches
- C) Rodents
- D) All of the selections are correct.

Sorry, that is not right. Please try again.

That's right! Ants, roaches, and rodents are all problems in schools and child care centers. Click anywhere to continue.

Submit Clear

What are TWO problems that pests can cause?

- [x] A) Allergies
- [ ] B) Low birth weight
- [x] C) Disease
- [ ] D) Low IQ

Sorry, that is not right. Please try again.

Great job! Click anywhere to continue.

Submit Clear

We are now going to present information about what you, as a PMP, need to know and do in order to comply with California's Healthy Schools Act when you work in a school or child care center setting. We will also review what schools and child care centers must do to comply with the Healthy Schools Act because, as a PMP, you will often be in the position of assisting schools and child care centers with understanding and complying with the law's requirements. Many schools and child care centers are unaware of their responsibilities under the Healthy Schools Act.

The Healthy Schools Act (HSA)

2001: *established the rights of parents and staff to know about the pesticides used and required record keeping*
2006: *certain pesticides were prohibited*
2007: *HSA extended to include private child care centers*
2015: *All public schools and child care centers required to have IPM plans and training and must report pesticide use to DPR*

- Regulates pesticide use in public K-12 schools and **licensed** child care centers
- Requires schools and child care centers to notify staff and parents and maintain records of pesticide use
- Requires that PMPs notify schools and child care centers when applying pesticides
- Pesticide use in schools and child care must be reported to the county and state.
- The Department of Education oversees the right to know provisions.
- The Department of Pesticide Regulation oversees the reporting requirements.

http://apps.cdpr.ca.gov/schoolipm/

Before 2001, information on the kinds and amounts of pesticides used in public schools was hard to find. The Healthy Schools Act gives parents and staff the right to know about the pesticides used in California public schools, requires record keeping on pesticides used, and made it state policy to encourage the use of least toxic pest management, or IPM, methods in schools. The law applied to public kindergarten through grade 12 schools as well as *publicly funded* preschools.

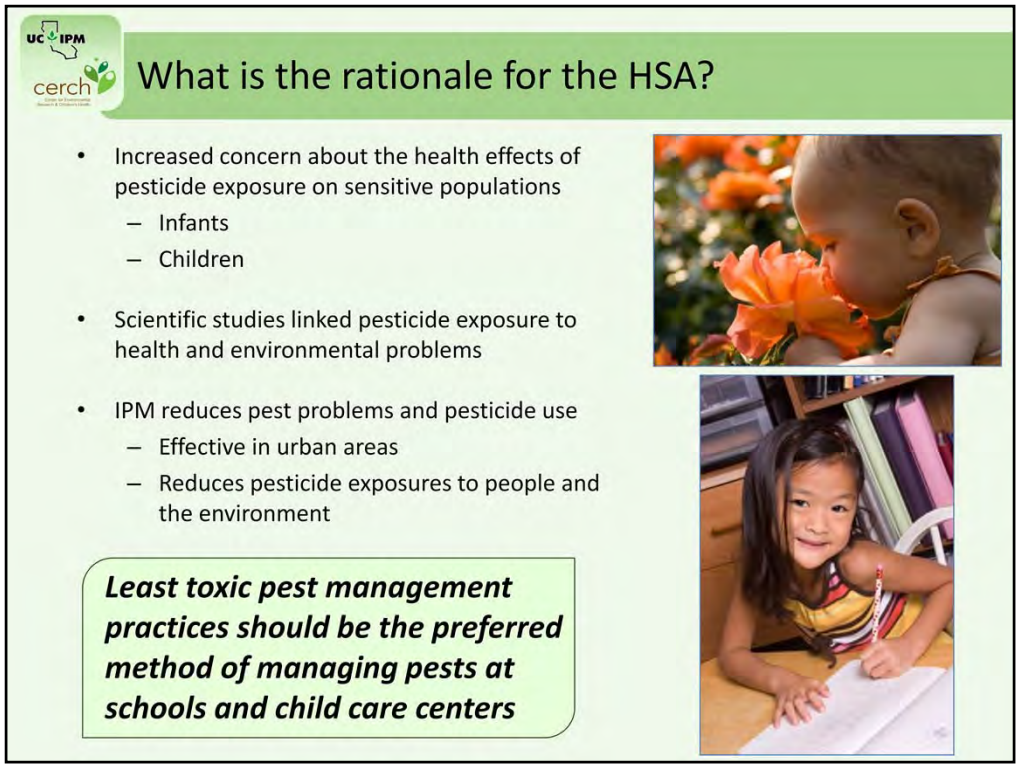
The law requires schools and child care centers to notify parents and staff when pesticides are used and maintain records of pesticide use. The law also requires licensed pest management professionals applying pesticides on school or child care sites to report pesticide use to the county agricultural commissioner and to the state.

In 2006, a second law (AB 405) was passed that prohibits the use of certain pesticides in schools and child care centers.

In 2007, the California legislature passed AB 2865 which extended the Healthy Schools Act to *private* child care facilities (excluding family day care homes). As a result, all infant centers, preschools, extended day child care facilities, school-age child care centers, and employer-sponsored child care centers have to comply with the law.

New revisions in 2015 require public schools and child care centers using certain pesticides to have IPM plans and to report pesticide use by school employees to the state, even if they are not licensed. School employees applying pesticides must also be trained in pesticide safety.

The California Department of Education oversees the right to know part of the law. The reporting requirements of the Healthy Schools Act are enforced by the Department of Pesticide Regulation (DPR). The law also requires that DPR support and promote the use of IPM in schools and child care centers.



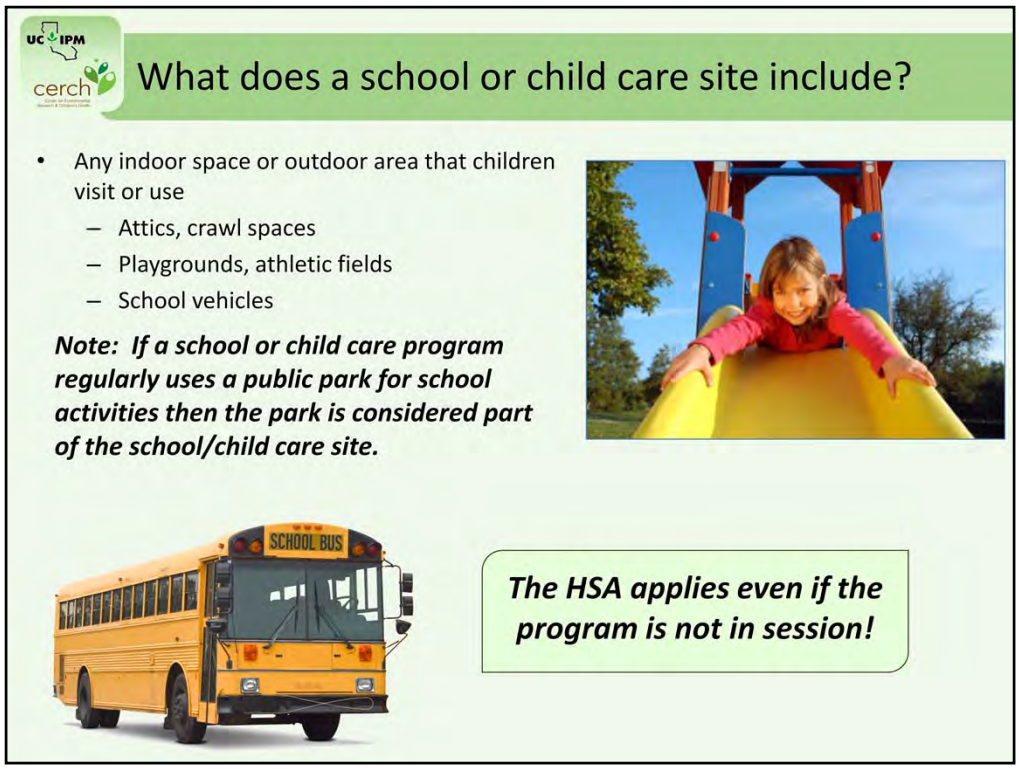
The Healthy Schools Act was passed in response to increasing concerns about the effects of pesticide exposure on sensitive populations such as infants, children, and pregnant women. Scientific studies associating pesticide exposure to health problems were being reported. At the same time, Integrated Pest Management (IPM) was being promoted as an effective way to both remedy pest problems and reduce pesticide use in urban settings. IPM was incorporated as a goal of DPR in 1995. The development of IPM for urban settings offered an effective and least hazardous way to address pests in buildings and grounds occupied by humans. IPM reduces pesticide exposures to people and the environment. Parents argued that its adoption in settings where children spend many hours a day made sense, and the California legislature was persuaded.

The Healthy Schools Act established that effective, least toxic pest management practices should be the preferred method of managing pests at schools and child care centers.

We know what a school is, but what is a child care center?

- Licensed by the California Department of Social Services Community Care Licensing Division
- Provide non-medical care and supervision for infant to school-age children in a group setting where no one lives on site
  - Child care centers
  - Infant care centers
  - Toddler programs
  - School-age centers
  - Child care centers for mildly ill children
- Can be found in school buildings, commercial buildings, and churches

The Healthy Schools Act applies to all public schools and public and private child care centers. We know what a school is, but what is a child care center? Child care centers are licensed by the California Department of Social Services Community Care Licensing Division. Child care centers provide non-medical care and supervision for infant to school-age children in a group setting for less than 24 hours where no one lives on site. Child care facilities include child care centers, infant care centers, toddler programs, school-age centers, and child care centers for mildly ill children. Child care centers can be housed in school buildings, commercial buildings, churches, and other types of buildings.



Any indoor space or outdoor area that children visit or use regularly is considered part of the school or child care center site. This includes attics, crawl spaces, playgrounds, athletic fields, and school vehicles. It also includes nearby parks and fields if children from the school or child care center use the park or field regularly. It is also important to remember that the Healthy Schools Act applies even when the program is not in session! This means when children are on vacation or on weekends or holidays.

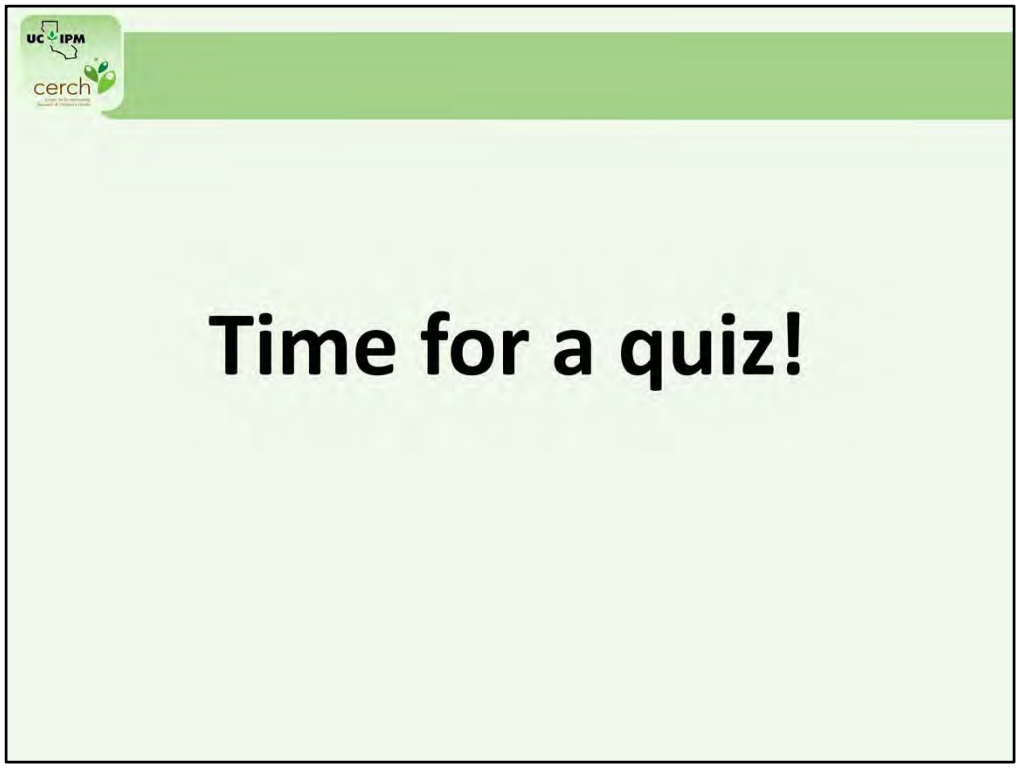
What facilities are exempt from the HSA?

- Family child care homes
  - Located in the licensed family care provider's own home
- Child care centers on military bases that do NOT receive state funding
- Child care centers on Native American Indian reservations
- Private K-12 schools
- Sunday schools, other ***unlicensed*** child care, colleges and universities

Some school and child care facilities are not covered by the Healthy Schools Act. Family child care homes are the largest category of child care programs that are exempt from the Healthy Schools Act. Family child care homes are located in the licensed family child care provider's own home. Even though the Healthy Schools Act doesn't apply to family child care homes, you can still promote the use of IPM in family child care homes if you find yourself providing pest management services to a family child care residence.

Child care centers on military bases that do not receive state funding and child care centers on Native American Indian reservations are also exempt from the Healthy Schools Act.

Private K-12 schools are also not subject to the Healthy Schools Act. Nor are Sunday schools or other unlicensed care for young or school-aged children.



Now let's stop for a quiz.

The Healthy Schools Act does NOT apply to which of the following?

- A) K-12 schools
- B) Family day care homes
- C) Preschools receiving state funding
- D) Child care centers

Sorry, that is not right. Please try again.

Good job! Family day care homes are exempt from the Healthy Schools Act. Click anywhere to continue.

Submit Clear

The Healthy Schools Act does not apply on weekends and school closures for holidays and breaks.

- ○ A) True
- ◉ B) False

Sorry, that is not right. Please try again.

Great job! Click anywhere to continue.

Submit Clear

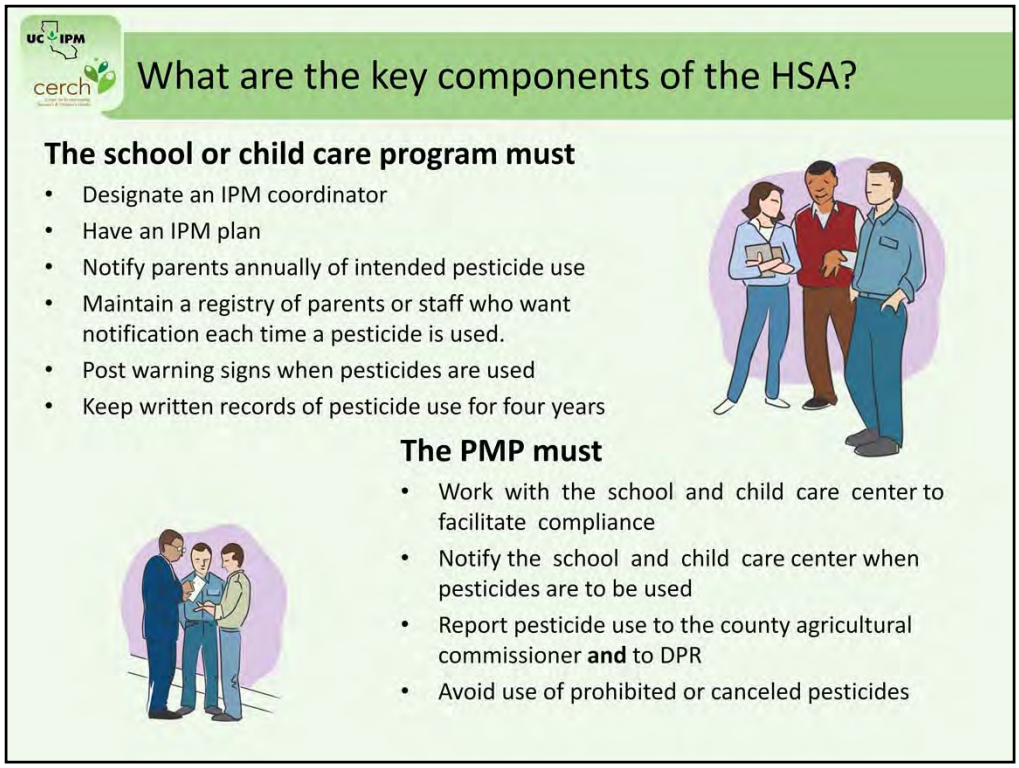
Which of the following can a school or child care site include?

- A) Playground
- B) School vehicle
- C) Attic
- D) All selections are correct

Sorry, that is not right. Please try again.

You are right! A school or child care site includes any indoor or outdoor area that children visit or use. Click anywhere to continue.

Submit Clear



The school or child care program must:

Designate an IPM coordinator.

Have an IPM plan.

Notify parents annually of intended pesticide use.

Maintain a registry of parents or staff who want notification each time a pesticide is used.

Post warning signs when pesticides are used and

Keep written records of pesticide use for four years.

The PMP must:

Work with the school and child care center to facilitate compliance.

Notify the school and child care center when pesticides are to be used.

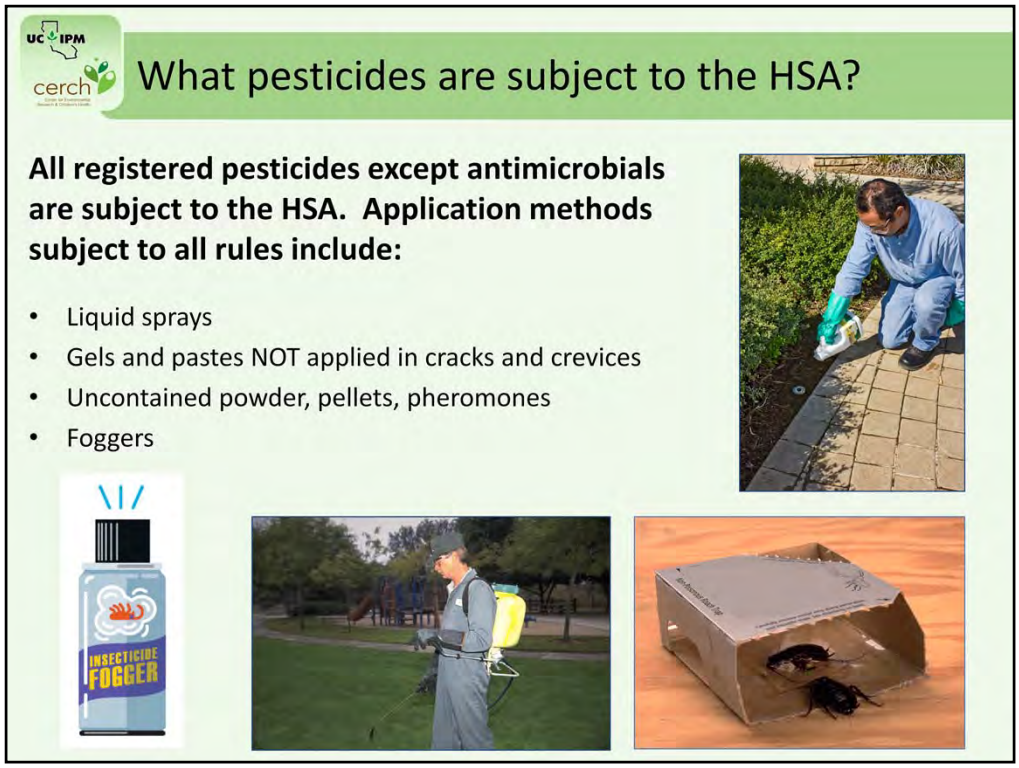
Report pesticide use to the county agricultural commissioner **and** to DPR, and

Avoid the use of prohibited or canceled pesticides.

SB 1405: 2014 Revision to the Healthy Schools Act

- Requires schools and child care centers to report pesticide use by their employees to DPR.
- Requires all school or child care employees applying pesticides to take an annual course approved by DPR that covers school site IPM and the safe use of pesticides around children, beginning in 2016.
- Requires schools to have an IPM plan when using pesticides. The IPM plan must be approved by DPR or based on a DPR template.
- Requires PMPs to take training on school site IPM and the safe use of pesticides around children as a CEU before applying pesticides in school or childcare. The training must be taken during each licensing period.
- SB 1405 goes into effect on January 1, 2015, with the exception of the required training, which goes into effect July 1, 2016.

SB 1405 was passed in 2014 and amends the Healthy Schools Act. Beginning in 2015, schools and child care centers will be required to report pesticide use by their employees to DPR, even if they do not hold a SPCB or DPR license. The law also requires IPM Coordinators and other school or child care employees applying pesticides to take IPM and pesticide safety training annually. Each public school or child care center is also required to have an IPM plan that is available to parents and staff. Finally, the new law will also require pest management professionals applying pesticides in school or childcare center facilities to obtain training on the Healthy Schools Act as a CEU.



All registered pesticides except antimicrobials are subject to the Healthy Schools Act. Application methods that are subject to all rules include liquid sprays; gel and paste pesticides *not* applied in cracks and crevices; *uncontained* powder, pellets, pheromones, and foggers. Some pesticides or application methods are exempt from all or part of the Healthy Schools Act. We'll talk about these exempt pesticides later in the presentation.

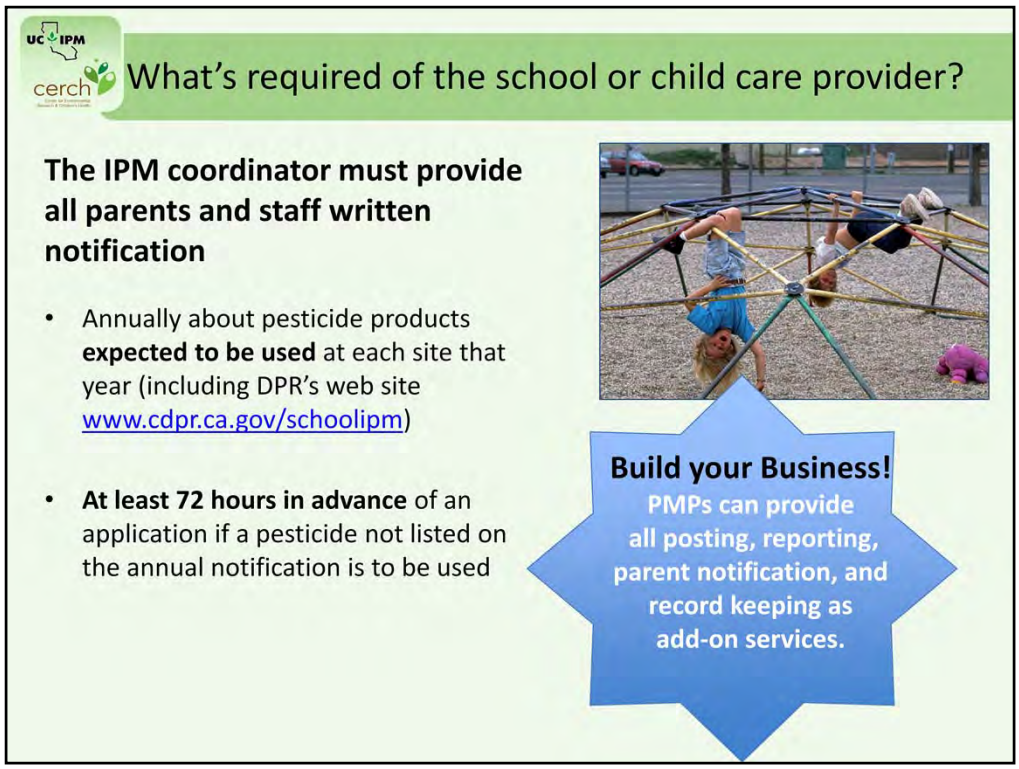
Who is the IPM coordinator?

The Healthy Schools Act requires each school or child care center to have a "School Site Designee", or IPM Coordinator.

The IPM Coordinator is:

- The person assigned to ensure that the HSA requirements are carried out
- Often the center director or maintenance director
- A key contact for the PMP

The Healthy Schools Act requires that each school or child care center identify an IPM coordinator (the law uses the term "school-site designee"). The IPM coordinator is the person assigned to ensure that requirements of the Healthy Schools Act are carried out. Usually, the IPM coordinator is the center director or the maintenance director. The IPM coordinator should be your key contact. You will be providing pesticide notifications to the IPM coordinator, and she/he will also be the conduit for providing information about pest problems and your treatment plans to the school or child care center staff. The IPM coordinator is responsible for ensuring that facility staff implements recommendations to prevent pest problems. Also, you should note that some schools and child care centers contract with their pest management professionals to ensure compliance with the Healthy Schools Act. Providing these services may be a new opportunity for your business. We will talk more about this later.



Every year, the school or child care center IPM Coordinator must provide *all* staff and parents (or guardians) with written notification of the names of all pesticide products expected to be applied at the site during the upcoming year. The notification must identify the active ingredient(s) in each pesticide product. The notice must also provide DPR's School IPM Web site address, www.cdpr.ca.gov/schoolipm.

If you decide to use a pesticide product not included in the annual notification, the IPM Coordinator must provide written notification of your intent to use the product to all staff and parents or guardians of pupils enrolled at the school or child care center at least 72 hours prior to its application. The notice should contain the product name, pesticide active ingredient, and the scheduled date of application. The school or child care center will need that information from you in order to notify parents and staff.

PMPs can provide all posting, reporting, parent notification, and record keeping as an add-on service.

What's required of the school or child care provider?

Schools and child care centers must maintain a registry of parents and staff who want notification of individual applications.

Those on the list must be notified at least 72 hours before an application with the following information:

- Product name
- Active ingredient
- Date of application
- DPR's School IPM web site www.cdpr.ca.gov/schoolipm

Sample notice for specific pesticide application

Dear Parent or Guardian,

At your request, we are writing to notify you about a specific pesticide application(s) at your school. Please see below for detailed information. If you would like to see the Material Safety Data Sheet for this chemical, it is available at

[SCHOOL LOCATION]

If you have any questions, please contact

[SCHOOL DISTRICT REPRESENTATIVE NAME]
at [PHONE].

SAMPLE

Sincerely,

[NAME OF SCHOOL DISTRICT OFFICIAL]

Notice of Pesticide Application

Date Form Completed: _____

School Name: _____

Location of Planned Pesticide Application: _____

Building Name/Number: _____

Playground or Grounds Section: _____

Name of Pesticide To Be Applied: _____

Active Ingredient(s): _____

Planned Date/Time of Pesticide Application: _____

The IPM Coordinator for each school or child care center must allow parents and staff to register with the school or child care center site, usually at the beginning of the year, if they wish to receive notification of individual pesticide applications at the site. Persons who register for notification must be notified of individual pesticide applications at least 72 hours prior to the application every time the product is used during the school year. The notice must include the product name, the active ingredient or ingredient(s) in the product, and the intended date of application. You will need to provide this information to the school or child care center in time for them to provide notification to registry participants. The notice must also provide DPR's School IPM Web site address, www.cdpr.ca.gov/schoolipm. Schools and child care centers will especially appreciate your reminders when registry participants need to be notified.

What are the posting requirements?

School and child care center staff must post signs around treated areas

- 24 hours before application
- 72 hours after application

WARNING
PESTICIDE-TREATED AREA
ADVERTENCIA
ÁREA TRATADA CON PESTICIDA

Name of Pesticide / *Nombre del Pesticida*
1. 2. 3. 4.

Manufacturer's Name; USEPA Registration No. / *Nombre del fabricante; No. de Registro de USEPA*
1. 2. 3. 4.

Intended Application Date / *Fecha Propuesta de Aplicación*

Application Date / *Fecha de la Aplicación*

Treated Areas; Reason for Treatment / *Areas Tratada; Razon de la Aplicación*

School Name: / *Nombre de la Escuela*

ALWAYS BE SAFE
1. If you need more information ask: Name: Title:
2. Do not play on the treated area
3. Wash your hands and exposed skin if you touch the treated area
1. *Si necesita más información pregunte: Nombre: Título:*
2. *No juegue en el área tratada*
3. *Lávese las manos y la piel expuesta si usted toca el área tratada*

For record keeping only and Education Code requirement:
Amount of Pesticide Used: _____

A-7

http://apps.cdpr.ca.gov/schoolipm/tools_templates/warning_sign.pdf

Signs must prominently include

- The words “Warning: pesticide-treated area”
- Product name
- Manufacturer
- U.S. EPA’s registration number
- Scheduled date of application
- Areas to be treated
- Reason for the application (i.e., target pest)

Prior to the application of non-exempt pesticides to a school or child care center site, warning signs must be posted in the area where the pesticides will be applied. The signs must be posted 24 hours prior to the application and remain posted until 72 hours after the application. The warning sign should prominently display the term "Warning/Pesticide-treated Area" and must include the product name, manufacturer's name, the United States Environmental Protection Agency's product registration number, the intended date and areas of application, and the reason for the pesticide application (i.e. the name of the pest).

What are the posting requirements?

- Signs must be visible to anyone entering a treated area. The law does not specify text, color, or size of lettering.
- The word **"Warning"** on the sign does NOT refer to the pesticide toxicity signal words *(danger, warning, caution),* but is universal language for **"Watch out!"**

Build your Business!
PMPs can provide warning signs as part of their business proposal. They should clarify who is posting the signs 24 hours prior to the application.

Download sample warning signs in English and Spanish from DPR's school IPM website www.cdpr.ca.gov/schoolipm/

Warning signs must be visible to anyone entering the area where pesticides are applied. Other than including the term "Warning/Pesticide-treated Area," the HSA does not specify the text, color or size of the lettering used in a warning sign. Sample warning signs are available on DPR's School IPM website as well as in the IPM Toolkit for Early Care and Education, also available online. The term "warning" on a notification sign is not a signal word and does not refer to the pesticide's toxicity. The word "warning," in this case, is used as universal language for "watch out," or "be careful!"

You can provide schools or child care centers with these signs as part of your business proposal to the facility. You should clarify with the program who is posting the warning signs 24 hours in advance of the application. It is the responsibility of the school or child care center to post the signs but, by prior agreement, you may provide this service as part of your contract.

What are emergency conditions?

Emergency conditions exist when the school or child care staff or property owner conclude that the immediate use of a pesticide is necessary to protect the health and safety of children, staff, or other persons. Emergencies are rare! A yellow jacket nest in a playground is an example of an emergency.

- Advance notification is not required in emergency conditions, however the law requires the school or child care to make every effort after the emergency application to notify those on the pesticide notification registry.
- Posting of the site must be completed as soon as the decision to spray has been made, then left in place for 72 hours after the application

Under certain "emergency conditions," advanced notification of pesticide applications is not required. "Emergency conditions" is defined by the Healthy Schools Act as any circumstances in which the school or child care center designee or property owner or property owner's agent deems that the immediate use of a pesticide is necessary to protect the health and safety of pupils, staff, other persons, or the facility. [Education Code § 17609(c)] Emergencies are rare! An example of an emergency might be a yellow jacket nest in a playground. The law requires "that the school designee or property owner shall make every effort to provide the required notification for an application of a pesticide under emergency conditions." In addition, even if prior notification is not possible under "emergency conditions," warning signs must still be posted as soon as possible after the application and remain in place for the required 72 hours.

What is required of the PMP?

- PMPs must provide **five days' (120 hours) notice** to child care staff or the property owner or manager and **three days' (72 hours) notice** to school staff when they intend to apply pesticides at a school or child care site.

- When a school or child care center is part of a larger property, the PMP must notify the school or child care staff if pesticide applications are within 10 feet of their facility's boundary.

Example: You will be treating the grounds of a community college that includes a child care center. If your application is within 10 feet of the center's boundary, you must notify the staff five days before doing the work so that the staff can ensure all the requirements of the HSA are met.

In order for the school or child care center to provide advanced notice to staff and parents, you must provide the school or child care center, via the IPM Coordinator, information on planned non-exempt pesticide applications. PMPs must provide **five days' (120 hours) notice** to child care staff or property owner or manager and **three days' (72 hours) notice** to school staff when they intend to apply pesticides at a school or child care site.

You should provide the program with the same information that is posted on the warning signs described a few screens ago: the product name, active ingredient, the manufacturer's name, the United States Environmental Protection Agency's product registration number, the intended date and areas of application, and the reason for the pesticide application. These rules apply whether you are contracted directly with the school or child care center or with the property owner/landlord/management company.

These requirements also apply to pesticide applications being made on a larger property that contains a school or child care center and the application is being made within 10 feet of the school or child care center boundary; for example, if you are treating a community college playing field adjacent to a child care center serving students on the campus and your application is within 10 feet of the center's boundary, you must notify the staff five days before doing the work.

What records do schools and child care centers have to keep?

- Each school and child care facility must keep records of applications on site for four years
- Records must include product name, active ingredient, manufacturer's name, US EPA registration number, date and areas of application, reason, and amount used
- DPR recommends that records be kept of all pest management practices, including those exempt from notification and posting
- Information must be readily available to the public

Pesticide Application Record

Date	Product Name	Active Ingredient	Manufacturer	US EPA Reg. No.	Location Applied	Reason	Amount Used

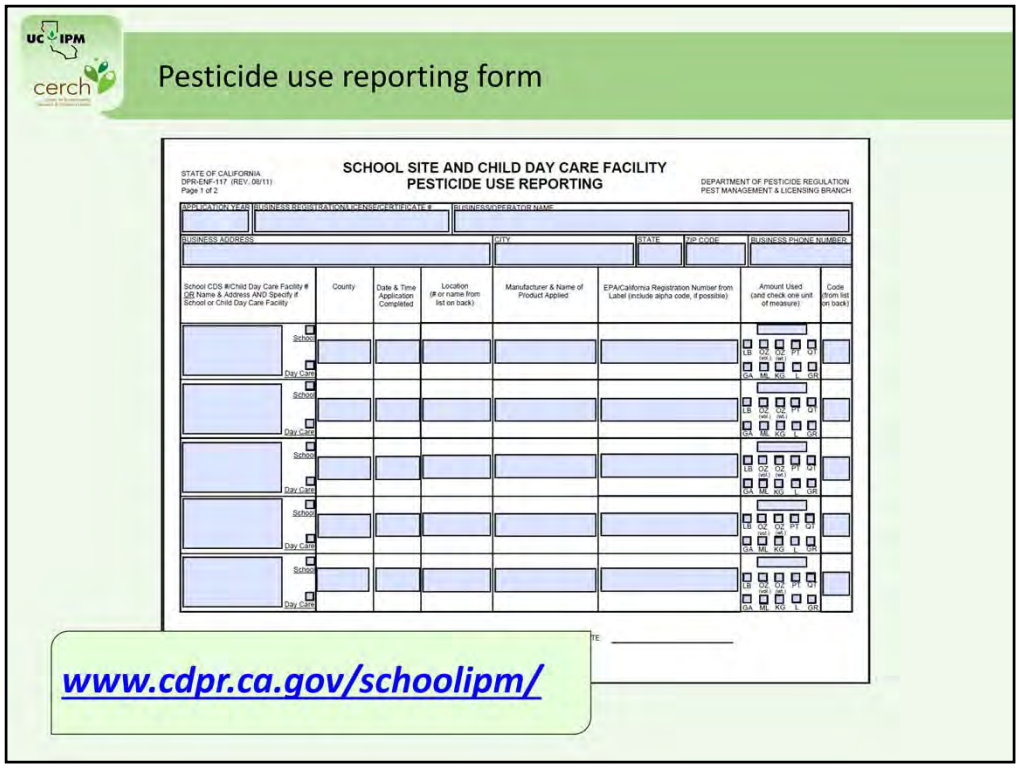
In order to comply with the record-keeping requirements of the Healthy Schools Act, each school or child care center must keep records of all pesticide applications for 4 years. The records must include the pesticide product name, active ingredient, manufacturer's name, U.S. EPA registration number, date and areas of application, reason for application (i.e. the targeted pest), and amount of pesticide used. DPR recommends that in the service of transparency, records be kept of *all* pest management practices, including those that are exempt from notification and posting. This information must be made available to parents, staff and the public if they request it. Therefore, you must provide the school or child care center with this information when you make pesticide applications.

What records do PMPs need to keep?

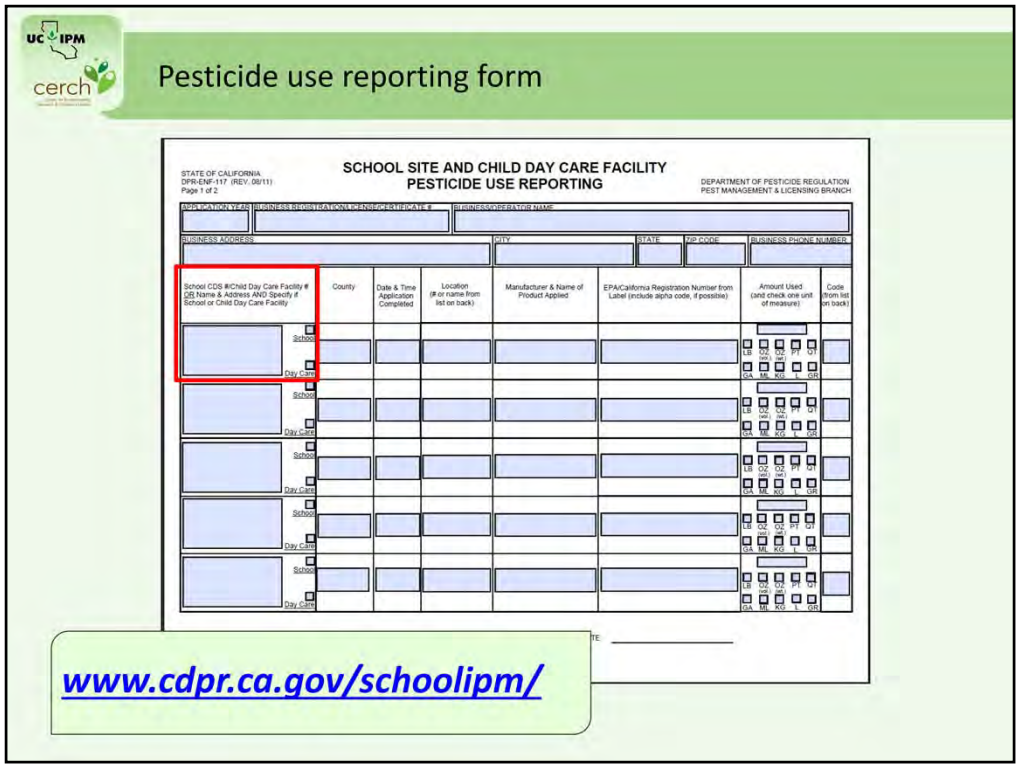
- Pesticide use reports must be submitted
  - **Monthly Summary Pesticide Use Report** (PUR) to the County Agricultural Commissioner (CAC)
  - **Annual School Site Pesticide Use Reporting Form** (PR-ENF-117) to DPR [California Code of Regulations 6624(a)(3). T*he form must be filed annually no later than January 31st the following year.*

- PMPs must keep records of pesticide applications for two years

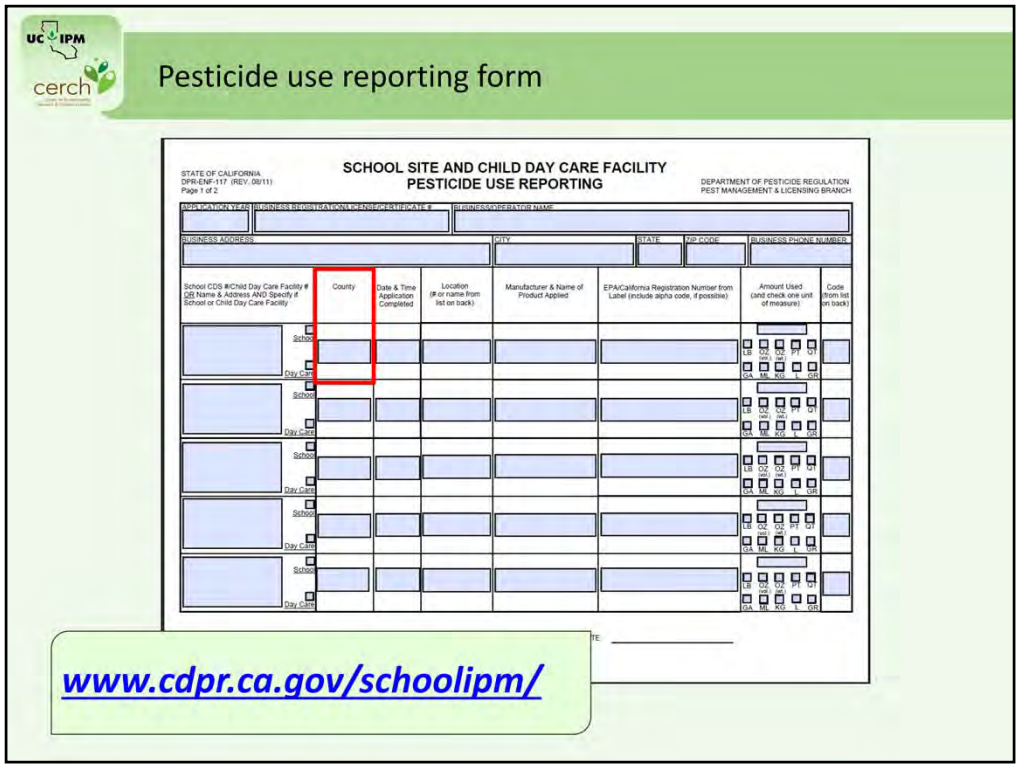
PMPs must submit two different types of reports: a monthly Summary Pesticide Use Report, submitted to the County Agricultural Commissioner; and the School Site Pesticide Use Report Form to be submitted at least annually to DPR by the 30th day following the end of the calendar year during which a pesticide is applied (for example, by January 31, 2014, for applications made in 2013). PMPs must also keep records of pesticide applications for 2 years.



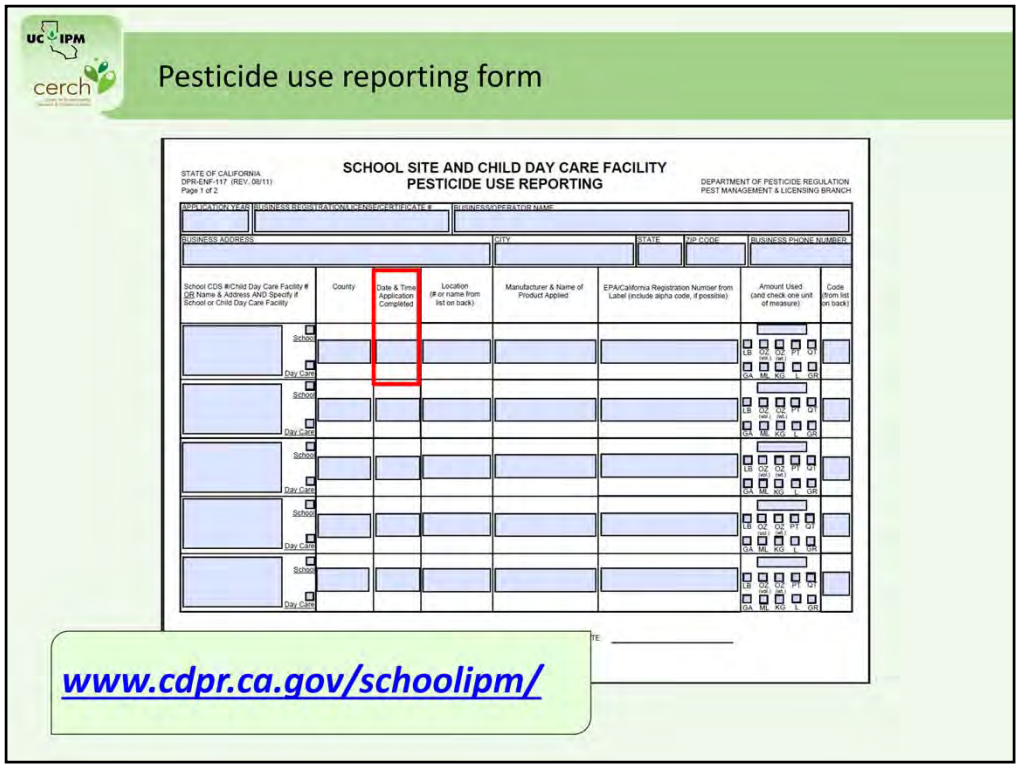
This is the form developed by DPR to report pesticide use in schools and child care centers to DPR annually. It is available on DPR's School IPM website. As a licensed PMP, your business must submit the form to DPR at least yearly when you apply pesticides at a school or child care center facility (except family day care homes). To download the form, go to www.cdpr.ca.gov, click on "Forms" then on "Pesticide Use Reporting."



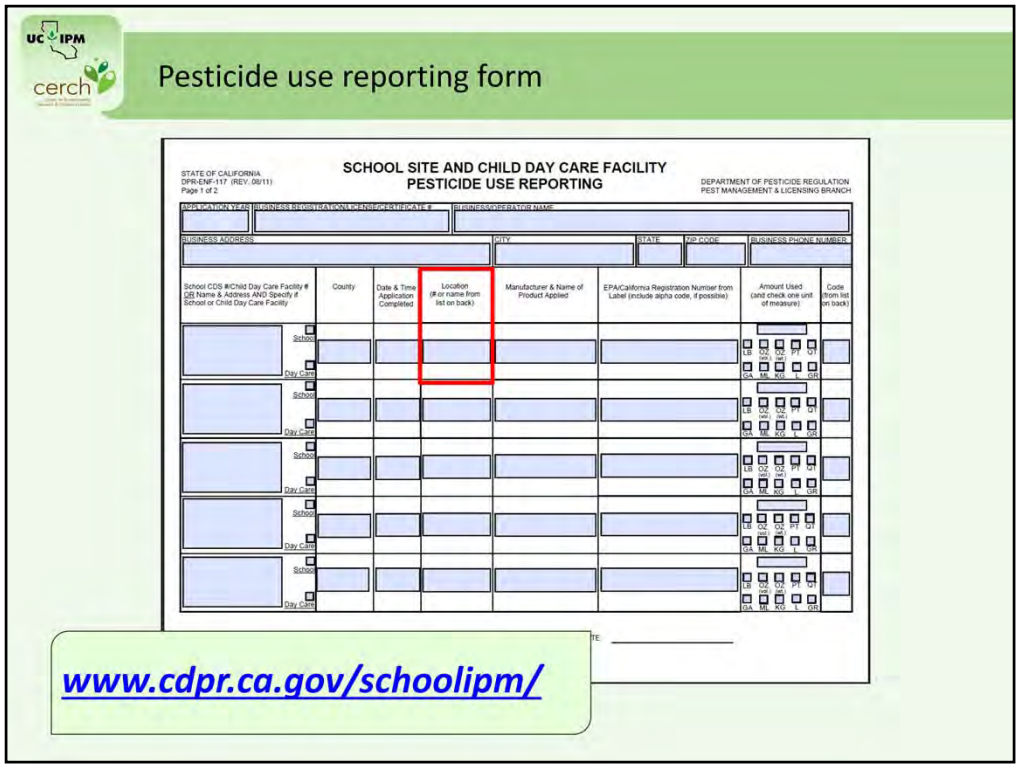
For each application, you are required to record the name and address of the facility, whether it is a school or a child care center,



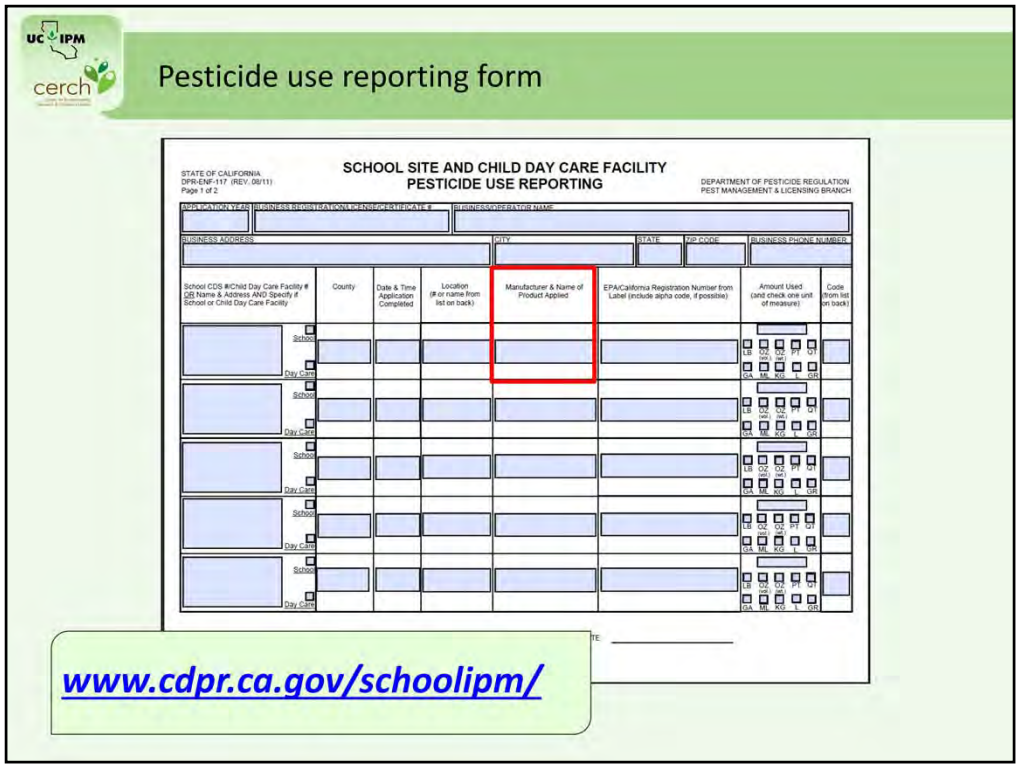
the county where the facility is located,



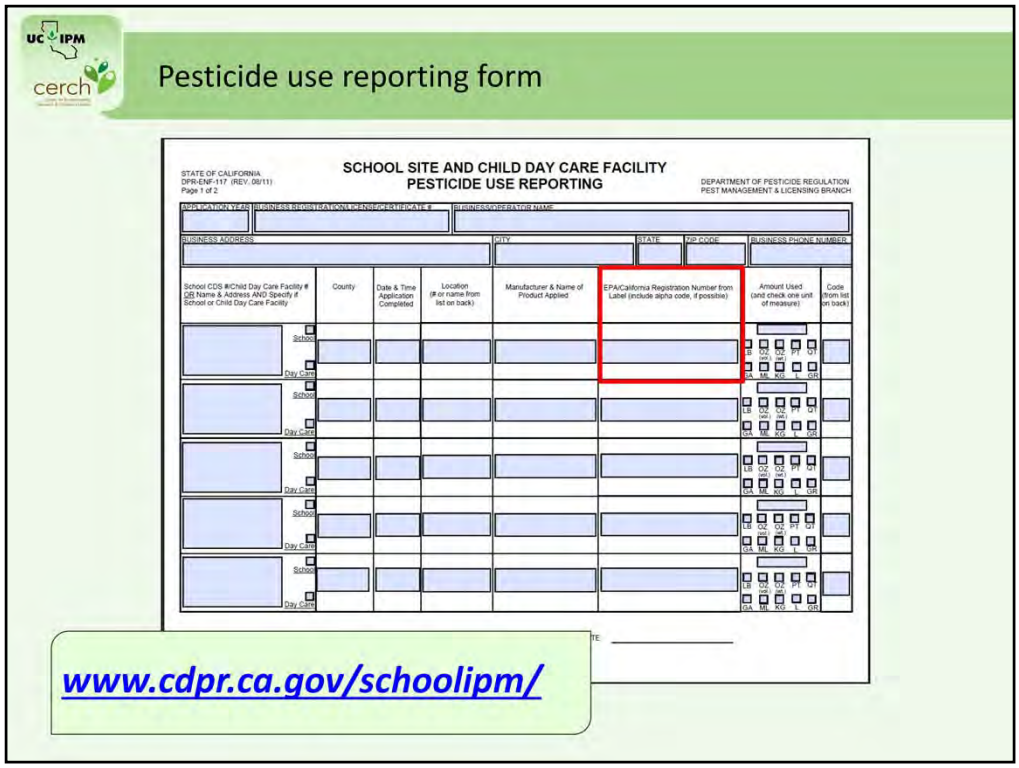
the date and time of the application,



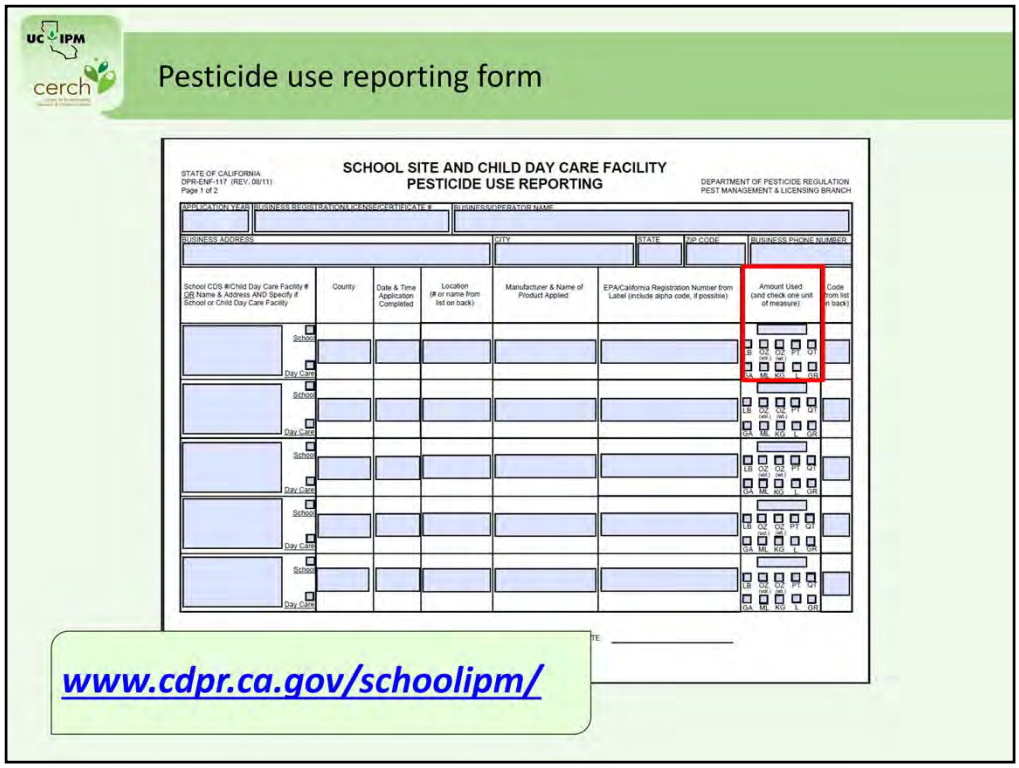
the location where it was applied at the facility (i.e. kitchen, classroom, etc.),



the manufacturer and name of the product applied,



the EPA/California registration number from the product label (including the alpha code, if possible),



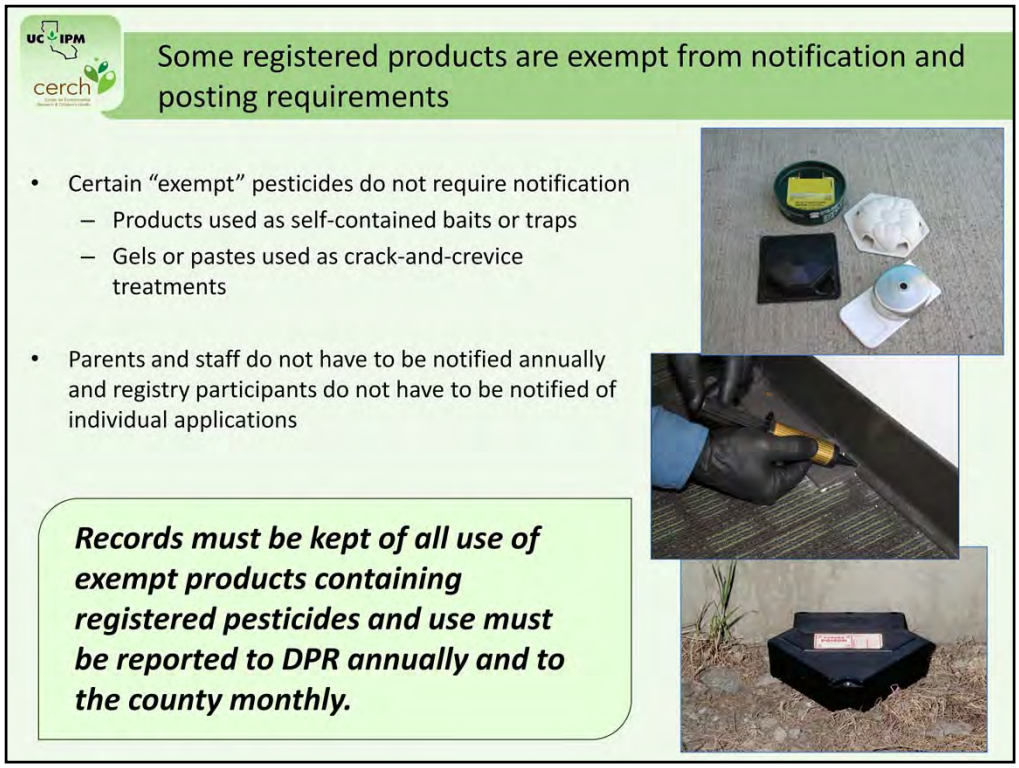
and the amount applied.

What are the property owner obligations to the PMP?

Property owners must notify PMPs if a child care facility is located on that property.

All property owners must notify PMPs working on a property if a child care center is located on that property. Child care centers, in particular, may be located within commercial buildings and may not be immediately obvious to the PMP. The property owner must inform the PMP that this is the case.

Unlike larger properties that *contain* a child care center facility, PMPs do *not* have to notify a school or child care center when private or public property being treated by the PMP is *adjacent* to the facility, unless the property is regularly used by the school or child care center.



The Healthy Schools Act notification and posting requirements do not apply to certain registered pesticide products. These include

- pesticide products applied in the form of a self-contained bait or trap
- pesticide gels or pastes deployed as a crack and crevice treatment

When these pesticide products are used in a school or child care center, parents and staff do *not* have to be notified annually and registry participants do not have to be notified of individual applications. However, these uses of registered pesticides must be reported to DPR annually and to the county monthly. So if you use a pyrethroid ant bait or rodent bait station with poison, you must still report the use and keep records.

Some products are exempt from notification, posting, recordkeeping, and reporting requirements

- Antimicrobials, sanitizers, and disinfectants
- Pesticides exempted from U.S. EPA regulation or registration
  - 25(b) materials – food grade essential oils, other

Antimicrobials, sanitizers, and disinfectants, while they are pesticides and registered with the EPA and DPR, are not subject to the Healthy Schools Act.

Some pesticides are not required to be registered with the U.S. EPA or DPR and are completely exempt from the Healthy Schools Act. The most common pesticides in this category are food grade essential oils. Use of these pesticides does not require notification, reporting or recordkeeping.

What pesticides are prohibited?

Some pesticides can NEVER be used in schools or child care centers

- Conditional, experimental use, or interim registration
- Contains a new active ingredient or is for a new use
- Has been cancelled, suspended, or phased out
- Check the DPR list of prohibited pesticides

List of Pesticide Products Prohibited From Use in Schools and Child Care Facilities

(AB 405, Chapter 566, Statutes of 2005)

Pursuant to Education Code section 17610.1, the pesticide products listed below are prohibited from use on "schoolsites." The term "schoolsite" is defined in Education Code section 17609 to mean any facility used for child care (other than family day care homes), or for public kindergarten, elementary, or secondary school purposes. The term included the buildings or structures, playgrounds, athletic fields, vehicles, or any other area of property visited or used by pupils. Schoolsite does not include any postsecondary educational facility attended by secondary pupils or private school facilities.

The following pesticide products meet the criteria of Education Code 17610.1(a), and therefore, are prohibited from use on schoolsites, effective October 1, 2013:

Product Brand Name	EPA Registration Number
Capreno Herbicide	264-1063-AA
Caramba Fungicide	7969-246-AA
Celsius WG Herbicide	432-1507-AA
CheckMate LBAM Dispenser	56336-58-AA
Contego Pro SL Plant Growth Regulator	73049-462-AA
Disarm 480 SC Fungicide	66330-64-AA
DuPont Fontelis Fungicide	352-834-AA
DuPont Velista Fungicide	352-835-AA
Evito 480 SC Fungicide	66330-64-ZA
Fresh Protect	86381-2-AA
Gavel 75 DF Fungicide	10163-6414-AA

http://apps.cdpr.ca.gov/schoolipm/school_ipm_law/

Some pesticides may *never* be used in schools or child care centers. The use of a pesticide in a school or child care center is prohibited if the pesticide has a conditional, experimental use, or interim registration, and the pesticide contains a new active ingredient or is for a new use. While it can be confusing to sort out what are prohibited pesticides, DPR maintains a list of pesticides that are prohibited for use in schools and child care centers. When in doubt, consult the list.

A pesticide is also prohibited if it has been canceled, suspended, or phased out. Cancelled pesticides may not be on the list. So if you have old product, make sure it is still registered before using it.

Finally, restrictions on the pesticide label may also limit where and when a product can be applied.

Time for a quiz!

Which of the following is a non-exempt product from the HSA?

- (●) A) Pheromones
- ( ) B) Product used as a self-contained bait
- ( ) C) Antimicrobial pesticide
- ( ) D) Gels and pastes applied in cracks and crevices

Sorry, that is not right.
Please try again.

Right! Pheromones are not exempt from the Healthy Schools Act.
Click anywhere to continue.

Submit Clear

How long must signs be posted in treated areas?

- (●) A) 24 hours before and 72 hours after
- ( ) B) 72 hours before and 24 hours after
- ( ) C) 24 hours before and 36 hours after
- ( ) D) 24 hours before and 48 hours after

Sorry, that is not right.
Please try again.

You are right! Signs must be posted for 24 hours before a treatment and for 72 hours after.
Click anywhere to continue

Submit Clear

Where can you go for more information?

For frequently asked questions about the Healthy Schools Act……

- DPR's school IPM
  http://apps.cdpr.ca.gov/schoolipm/
- DPR's child care IPM
  http://apps.cdpr.ca.gov/schoolipm/childcare/
- UC IPM
  http://www.ipm.ucanr.edu/

FREQUENTLY ASKED QUESTIONS

THE **HEALTHY SCHOOLS** ACT

The Healthy Schools Act of 2000 (Assembly Bill 2260) put into place right-to-know requirements such as notification, posting, and recordkeeping for pesticides used at public schools and public child day care facilities. The legislation also put into law the Department of Pesticide Regulation's (DPR) existing School IPM Program and requirements for reporting pesticide use.

The Healthy Schools Act was amended in 2005 to prohibit the use of certain pesticides at schools and public child day care facilities that have conditional, experimental use, or interim registrations or have been canceled, suspended, or phased out. The law was amended again in 2006 to include private child day care facilities (except for family day care homes). For more information, including a copy of the laws, go to DPR's School IPM Web site: www.cdpr.ca.gov/schoolipm.

I. DEFINITIONS

1-1. What types of facilities are subject to the Healthy Schools Act?

Public K-12 schools and both public and private child day care facilities are subject to the Healthy Schools Act (HSA). Specifically the Healthy Schools Act uses the term "school site" to include kindergarten, elementary, or secondary school facilities (including charter schools), and child day care facilities. Day care centers are a type of child care facility and thus fall under the requirements of the Healthy Schools Act. According to section 1596.76 of the Health and Safety Code, the term "day care center" includes preschools, infant centers, extended day care facilities and school age child care centers. Child day care facilities which are subject to the Healthy Schools Act also include employer-sponsored child care centers. The Healthy Schools Act excludes family day care homes, colleges and universities, and private kindergarten, elementary, or secondary school facilities. The term school site also includes the buildings or structures, playgrounds, athletic fields, vehicles, and any other area of property visited or used by the pupils. [Education Code § 17609(c); Health and Safety Code §§ 1596.750, 1596.76]

1-2. Integrated pest management (IPM) has various definitions. How does the Healthy Schools Act define it?

The Healthy Schools Act defines IPM as a pest management strategy that focuses on long-term prevention or suppression of pest problems through a combination of techniques such as monitoring for pest presence and establishing treatment threshold levels, using non-chemical practices to make the habitat less conducive to pest development, improving sanitation, and using mechanical and physical controls. Pesticides that pose the least possible hazard and are effective in a manner that minimizes risks to people, property, and the environment are used only after careful monitoring indicates they are needed according to pre-established guidelines and treatment thresholds. Note that this definition applies only to IPM in schools and child day care facilities. [Food and Agricultural Code § 13181]

1-3. What is a pesticide?

Under state and federal law, a pesticide is any substance that controls, destroys, repels, or attracts a pest. Pesticides include insecticides, insect repellents, miticides, herbicides, fungicides, fumigants, nematicides, rodenticides, avicides, plant growth regulators, defoliants, desiccants, antimicrobials, and algicides. For more information about antimicrobials (such as sanitizers and disinfectants) see 3-8 and 3-14 below. Antimicrobials, including swimming pool chlorine and toilet bowl cleaners, are exempt from notification and posting. However, similar to other pesticides, you will still need to use products that have been registered with the U.S. Environmental Protection Agency (U.S. EPA) and DPR for use in California. (To see if a product is registered in California, go to DPR's Web site, www.cdpr.ca.gov, and click on "Look up pesticide products" at the bottom right.)

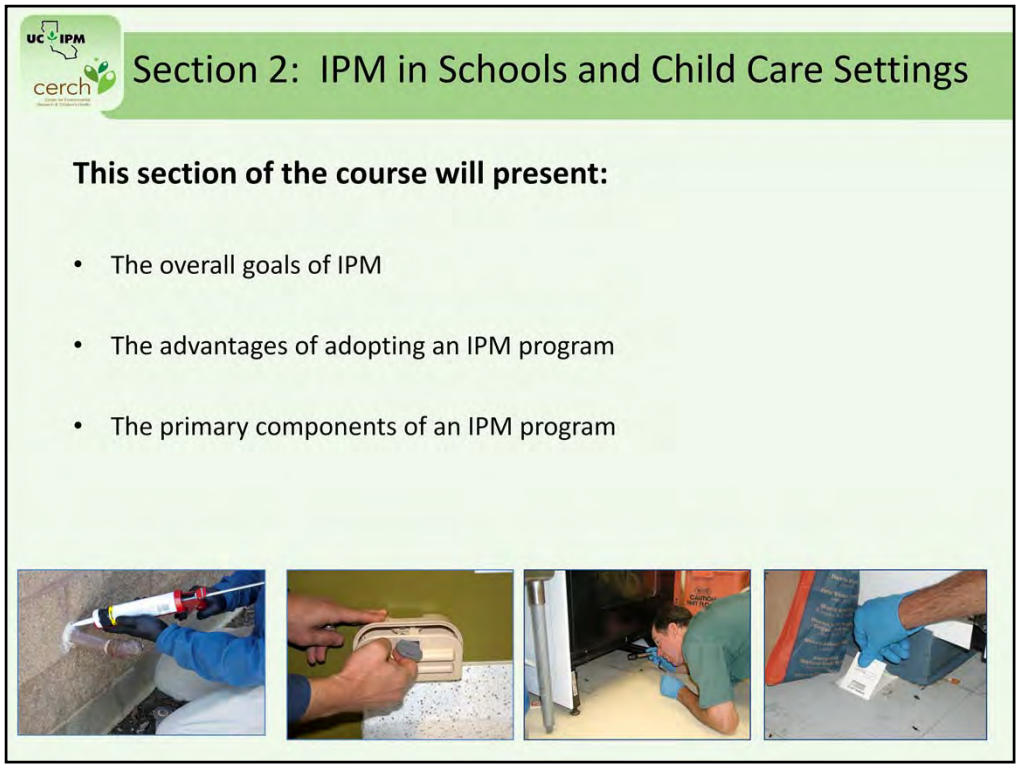
Plant nutrients, fertilizers, and soil amendments are not considered pesticides unless they also include a pesticide active ingredient. For example, weed-and-feed products are considered pesticides because they contain an herbicide. If the label of a pesticide lacks a U.S. EPA registration number, check to see if it's exempt from registration (see 3-13). If it lacks an U.S. EPA registration number and is not exempt from registration, then it's illegal to use it. Go to DPR's School IPM Web site (www.cdpr.ca.gov/schoolipm) and click on "Pesticides Exempted under the Healthy Schools Act" at the bottom right for more information on exempt products. [Food and Agricultural Code § 12753]

Revised July 2010

The HSA requires that the California Department of Pesticide Regulation provide information on IPM practices to schools and child care centers. DPR has a School IPM webpage http://apps.cdpr.ca.gov/schoolipm/ as well as a child care IPM webpage http://apps.cdpr.ca.gov/schoolipm/childcare/

These are great sources of information. UC Davis also has a comprehensive website on IPM http://www.ipm.ucdavis.edu/ which is particularly useful for identifying and responding to specific pests using IPM methods.

UC IPM
cerch
Center for Environmental Research & Children's Health
Providing Integrated Pest Management Services in Schools and Child Care Settings
California Department of Pesticide Regulation
pestec
California Department of Public Health
CDPH
UC San Francisco PEHSU Pediatric Environmental Health Specialty Units
Pest Control Operators of California
Alameda County Department of Healthy Homes
University of California Agriculture and Natural Resources
Los Angeles County Office of Education
Serving Students • Supporting Communities • Leading Educators



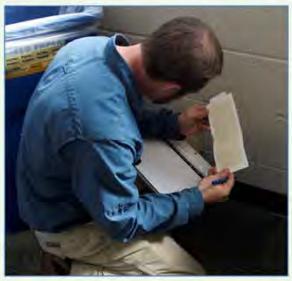
This section of the course will present the overall goals of IPM,

the advantages of adopting an IPM program, and the primary components of an IPM program.

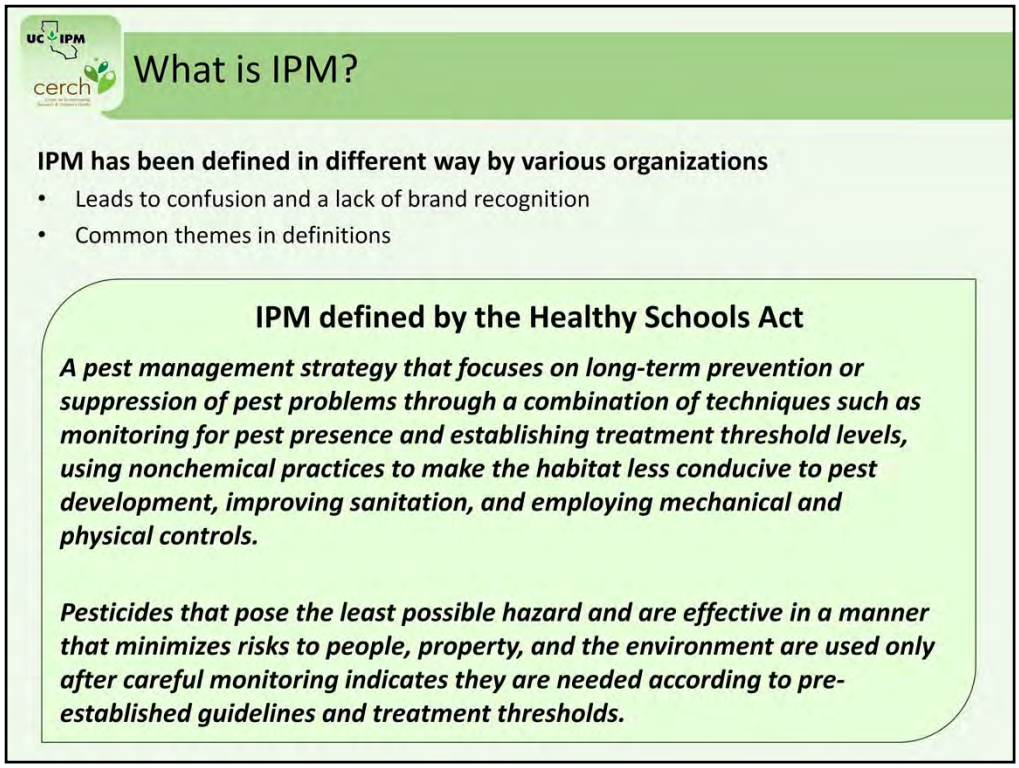
What is IPM?

IPM has been defined in different way by various organizations

- Leads to confusion and a lack of brand recognition
- Common themes in definitions
  - Focus on prevention
  - Make decisions based on monitoring data
  - Use multiple pest management tactics in combination
  - Reduce risks associated with pesticides

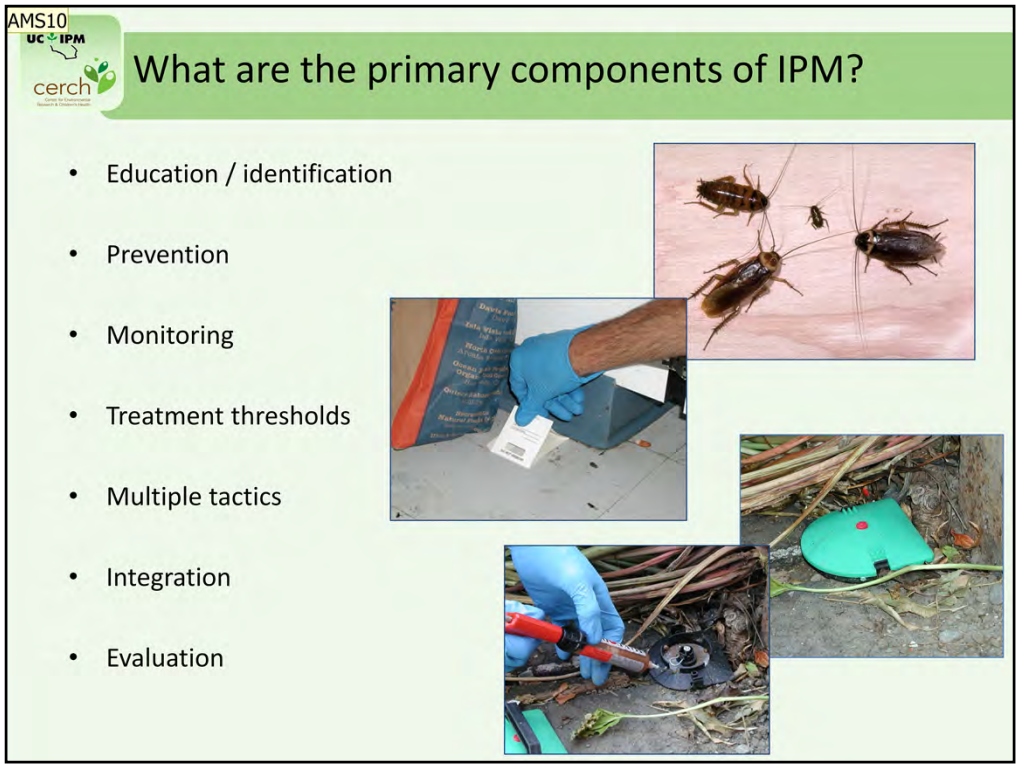


Historically, IPM has been defined in different ways by various organizations, leading to confusion and a lack of brand recognition by the general public. This is especially true in urban areas, where buzzwords such as 'green' or 'eco-friendly' may be more widely used than IPM. There are common themes in these definitions, however, including; focusing on prevention, using monitoring data to make decisions, utilizing a variety of pest management tactics in combination, and reducing risk associated with pesticide applications.



IPM, as defined by the Healthy Schools Act, is *A pest management strategy that focuses on long-term prevention or suppression of pest problems through a combination of techniques such as monitoring for pest presence and establishing treatment threshold levels, using nonchemical practices to make the habitat less conducive to pest development, improving sanitation, and employing mechanical and physical controls.*

Pesticides that pose the least possible hazard and are effective in a manner that minimizes risks to people, property, and the environment are used only after careful monitoring indicates they are needed according to pre-established guidelines and treatment thresholds.

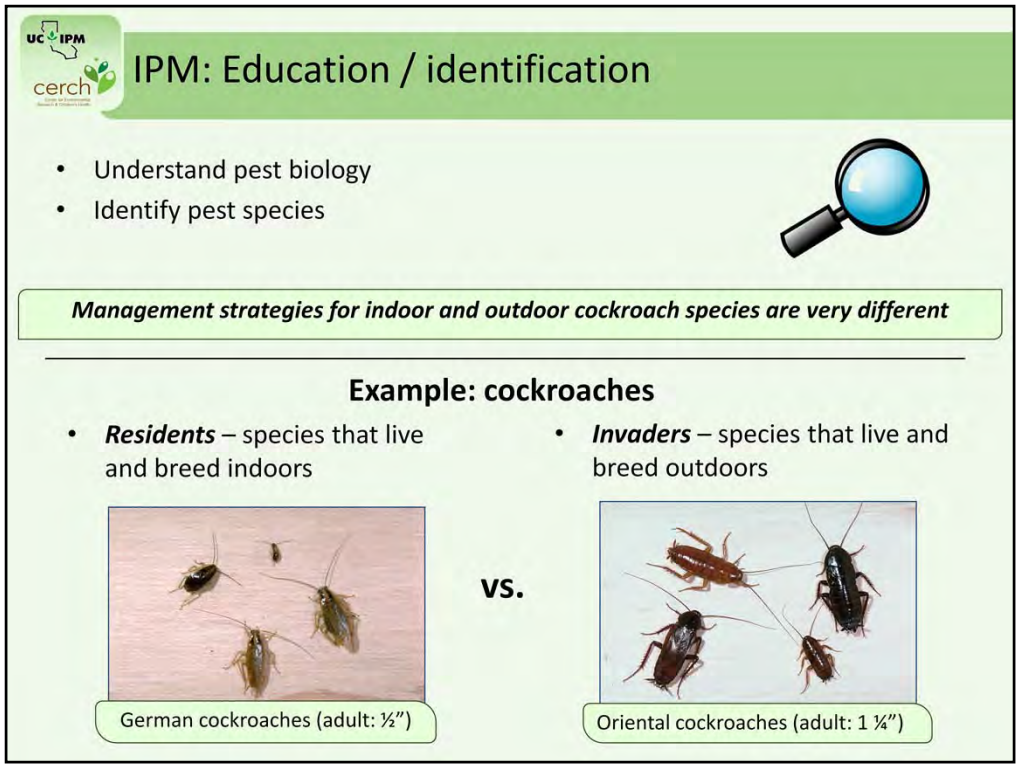


IPM is a decision-making process that seeks to maintain pests at or below an acceptable level while reducing negative impacts associated with pest management on communities and the environment. The process starts by learning about what pests are likely in a given situation, or when a new pest shows up, ensuring proper identification. Next, pest-specific preventive measures are taken to prevent pest problems. Regular monitoring is implemented to detect pests, if present, and determine whether pest density is increasing or decreasing. Once the pest threshold has been reached, action must be taken. IPM mandates a multi-pronged approach that includes several management tactics used within an integrated (i.e. not interfering) approach. The final step involves evaluation of the program and determination of what approaches worked or didn't work. In this way, IPM provides a positive feedback loop useful in establishing quality services.

Slide 63

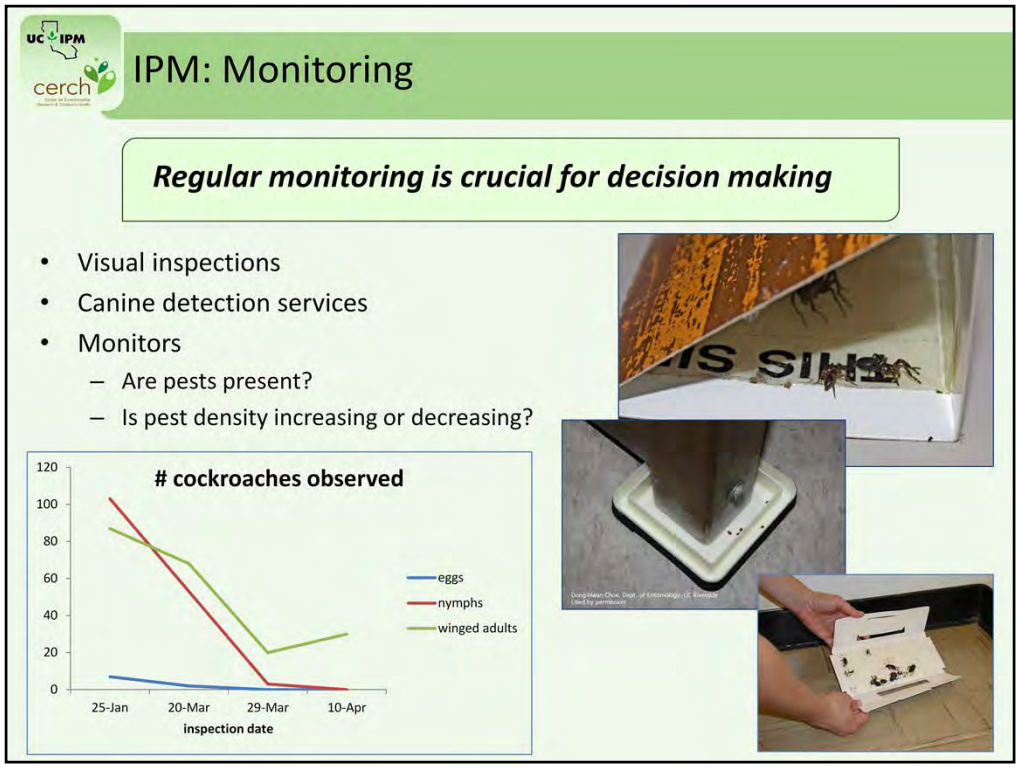
AMS10 two images below show brands and / or labels
Andrew, 8/4/2014

Reactive pest management (i.e. 'call the exterminator') often relies on pesticide applications, rather than on education and prevention. Among the general public these days, there is an increasing recognition of, and concern about, adverse effects of pesticide exposure. Modern consumers have access to huge amounts of information, not always correct, regarding pest management, which may shape their opinions. These factors combined with larger societal changes, such as greater concern for the environment and the health of our communities, call for a change to the older reactive model. Additional signs of the modern times, such as a globalized culture and a warming climate, may contribute to increased pest incidence and density. Providing IPM services is one way you can stay ahead of the curve and manage pests while considering communities and the environment. These issues are very important to a growing proportion of your potential clients!

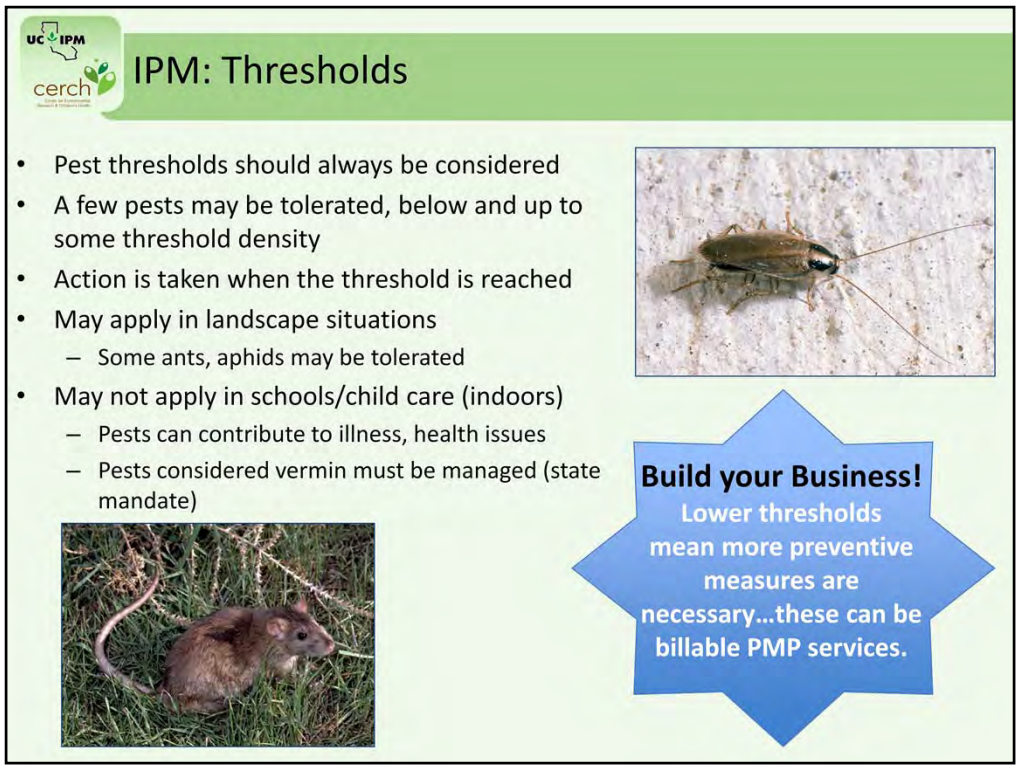


Education is the first and most important step of IPM, since proper identification and knowledge of a pest species will determine the management strategies and tactics necessary to be successful. Management strategies may differ widely among pest species. For instance, some cockroach species live and breed indoors, such as in kitchens, and should be managed using sanitation and insecticidal bait systems, while other species (often the large and conspicuous cockroaches likely to elicit screams) live and breed outside, in irrigated landscapes, woodpiles, and water meter boxes, and should be excluded from structures by properly sealing building cracks, crevices, and holes.

Properly-executed preventive measures can help prevent pest problems in the first place: *an ounce of prevention is worth a pound of cure.* Pests need access to food, water, and shelter to survive. If you can eliminate these resources (by proper containment of food or by fixing water leaks) or prevent access to these resources (by installing screens, door sweeps, and other exclusion devices), pests will not become established and reactive pest management actions will not be necessary.



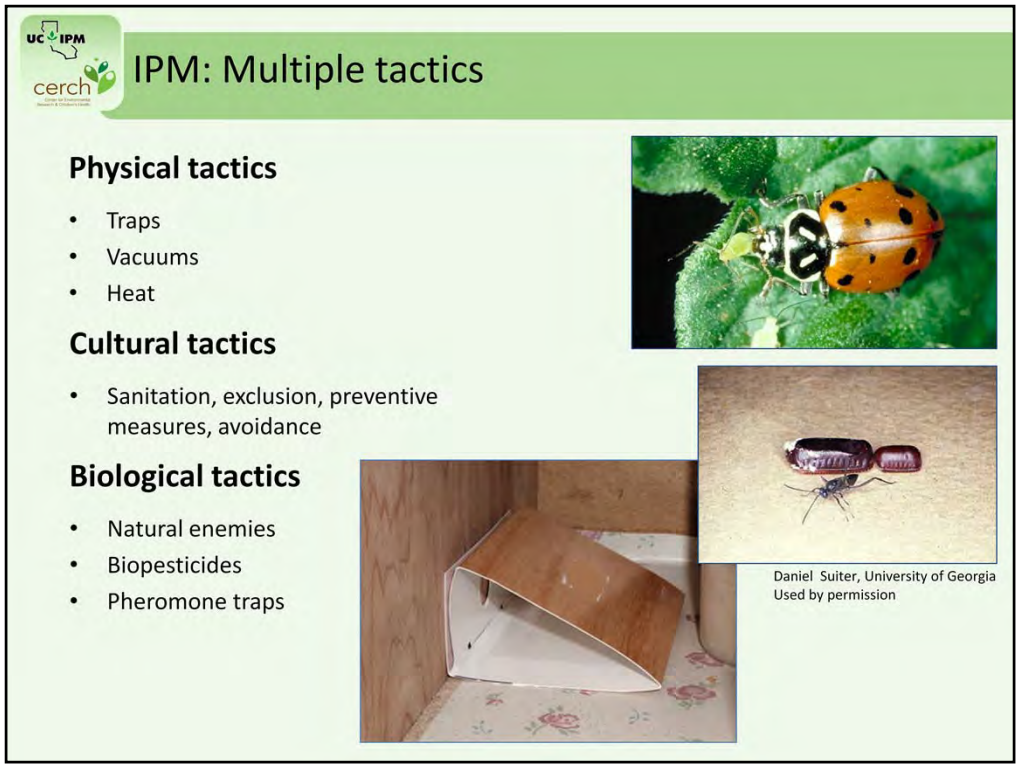
Regular monitoring is a key component of IPM and crucial for decision making. Monitoring can be done through visual or manual inspections, detection services (such as canine detection), or by using monitors. Monitors are devices that trap pests or give some other record of pest presence and abundance in order to detect initial infestations, to respond to increasing or decreasing pest density, and to evaluate treatment actions. Monitors may be passive like sticky traps, relying on chance encounters, or may draw in pests using attractive cues like pheromone traps.



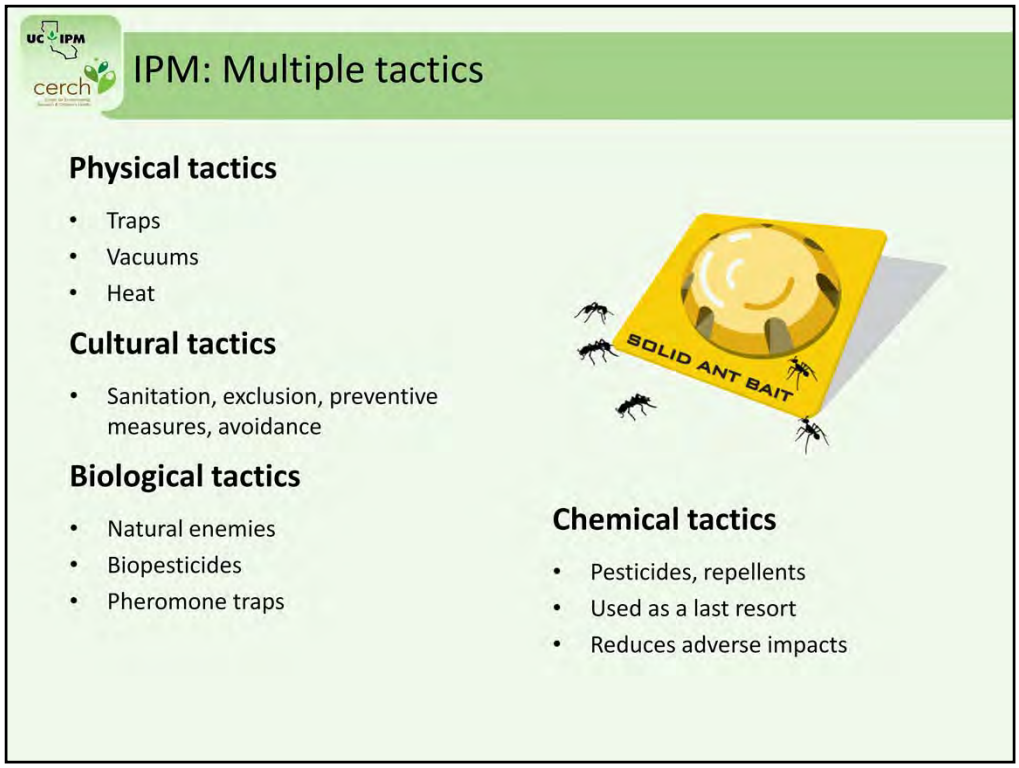
Though developed for IPM in agriculture, the concept of pest thresholds should always be considered when managing pests in any setting. Some pests can be tolerated at low densities. At levels below these thresholds, no actions are necessary. In all cases, once pest thresholds are reached, IPM philosophy states that action should be taken. Pest thresholds depend on many factors, including hazard potential, governmental mandates, opportunity costs, and site-specific concerns. In landscape situations, low numbers of pests are often tolerated. Inside schools and child care settings, however, some pests are a health hazard. Pests considered to be vermin must be managed. This is mandated by the state. Low tolerance for pests in schools and child care centers means prevention is paramount in order to avoid constant pest management actions.

When pest management action is taken as part of an IPM program, multiple tactics are used. Nonchemical methods including physical tactics such as traps, vacuums, and heat treatments, when feasible and appropriate, should always be considered first.

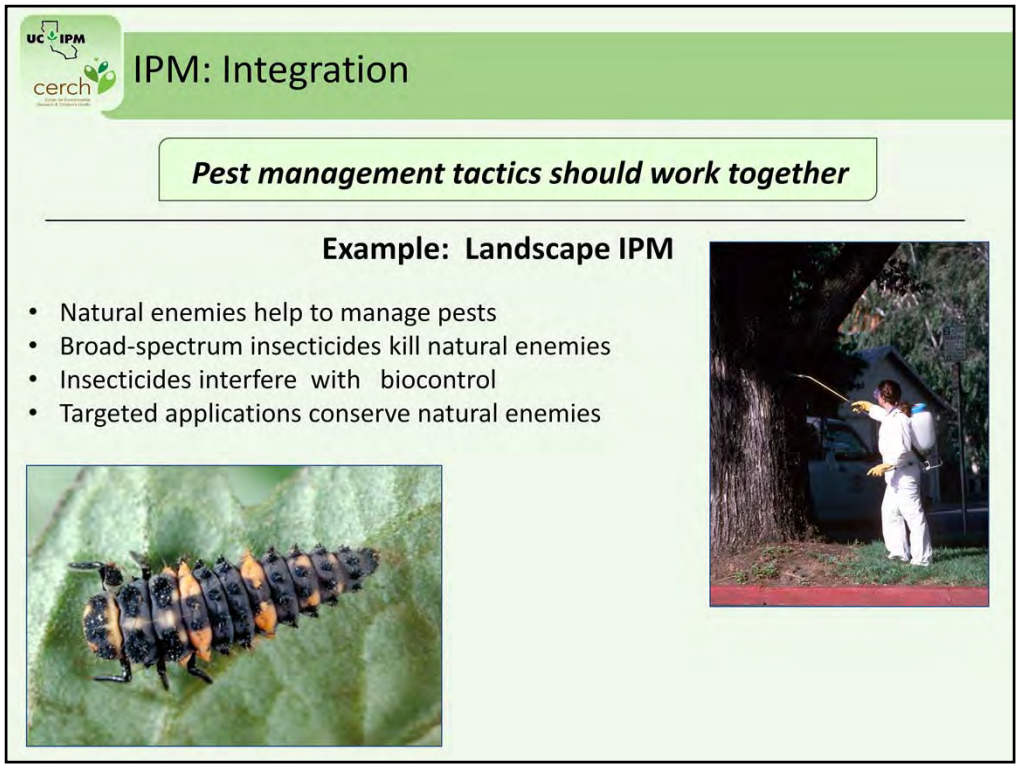
Cultural tactics overlap with prevention, as many prevent future infestations. Sealing a structure during pest invasions, for instance, helps prevent future problems.



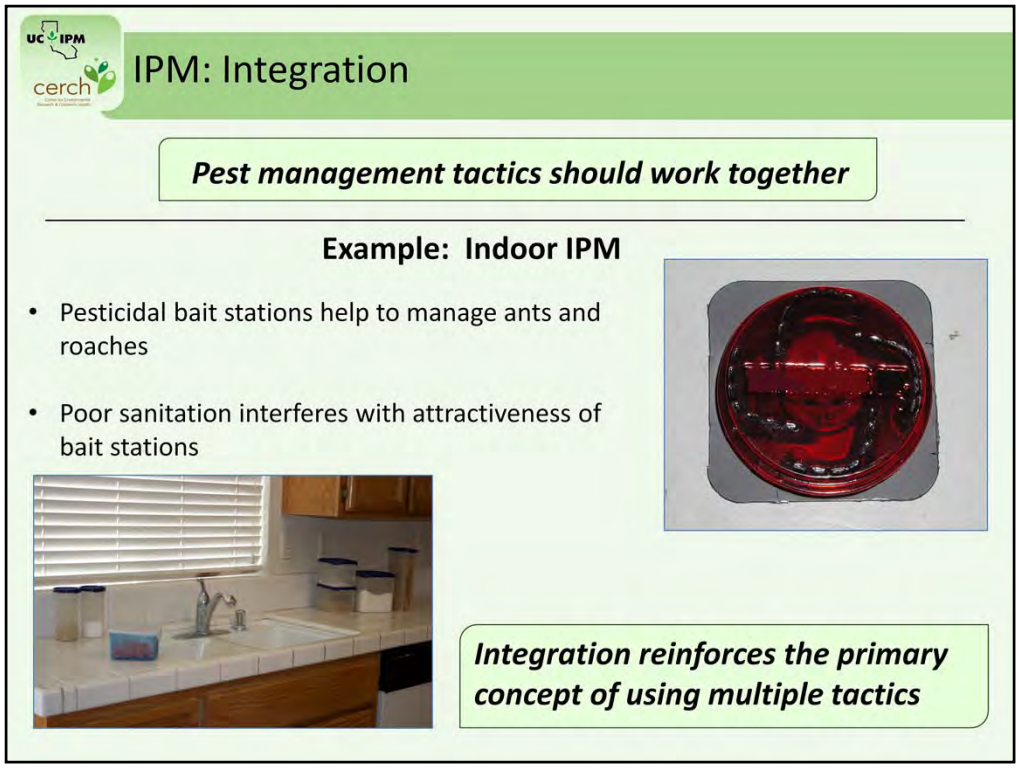
Biological tactics may be available for some pest situations, and should be considered before pesticides. Encouragement of natural enemies in outdoor systems should be constant and ongoing. In some cases, natural enemies, such as predators and parasites, can be purchased and released in order to reduce pest populations. Biopesticides are materials containing microbial natural enemies or their toxins that can be applied in ways similar to chemical pesticides. For example, products containing entomopathogenic fungi may become widely applied for cockroaches. Pheromones are chemicals used by pests to communicate; they can be used as attractants and added to traps and monitors.



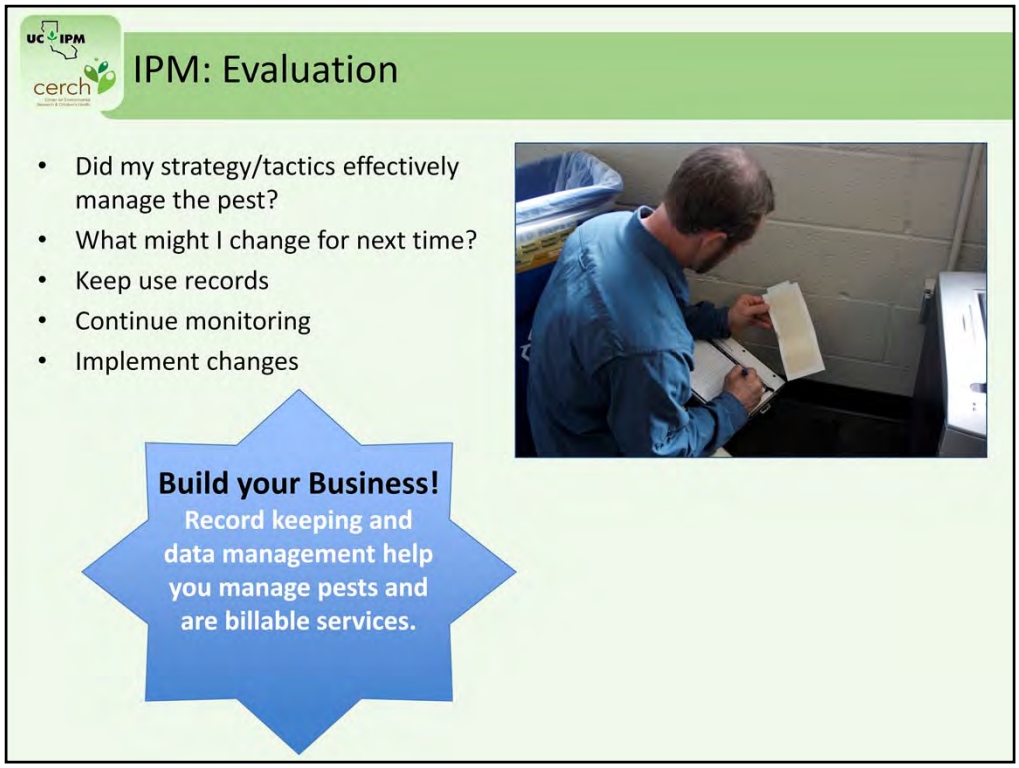
Chemical tactics include conventional pesticides, manufactured substances designed to kill, repel, or otherwise control pests. Pesticides can be applied in many forms: liquids, vapors, fog, dusts, powders, granules, and more. IPM principles hold that chemical tactics should only be used as last resorts (when other tactics have failed, are inappropriate, or are unavailable), should be used in conjunction with other tactics (such as traps, exclusion, sanitation, etc.), and should be carried out in a way as to reduce adverse impacts to the community and the environment. Some ways to limit exposure in schools and child care settings include restricting pesticide applications to cracks and crevices or in bait stations.



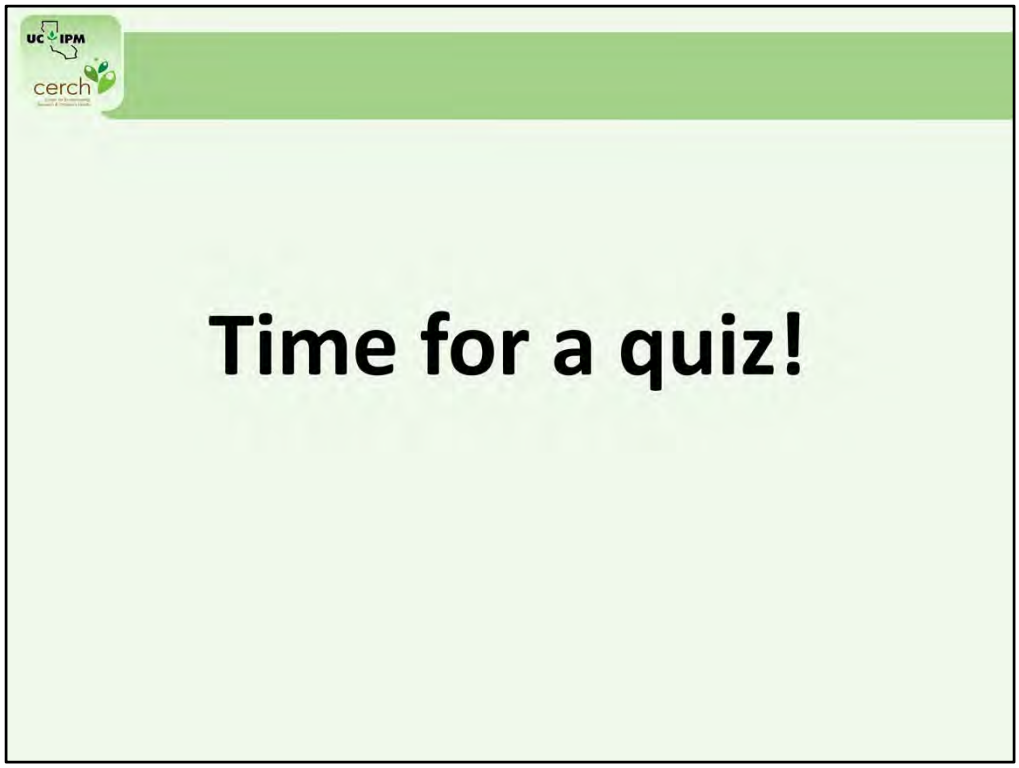
A key component of IPM is integration: tactics used should not counteract or interfere with one another. For instance, in landscapes, natural enemies help manage pests, but broad-spectrum insecticide applications may kill predators, negating any positive effect they may have had on pest density. Instead, targeted applications of pest-specific insecticides would conserve these natural enemies and take advantage of their services.



Another example of integration failure, this time indoors, is when a baiting program for ants or roaches fails due to poor sanitation; the insects will not be attracted to the bait stations if other food resources are readily available. Integration also reinforces the primary concept of multiple tactics, since integration requires more than one tactic.



Evaluation involves assessing the IPM program and considering changes that could be made to improve performance. Individual tactics should be evaluated for efficacy. Evaluation is made easier when accurate and regular records of pest density and actions taken are maintained. Record keeping is integral to practicing IPM and should be captured as a billable service.



Now let's stop for a quiz

What is NOT a primary component of IPM?

- A) Identification
- B) Monitoring
- C) Prevention
- D) Using pesticides as a first approach

Sorry, that is not right. Please try again.

That's right! Pesticides should not be used as a first step. Click anywhere to continue.

Submit Clear

It is important to identify a pest species and understand its biology before deciding on a treatment.

- (●) A) True
- ( ) B) False

Sorry, that is not right. Please try again.

Great job! Click anywhere to continue.

Submit | Clear

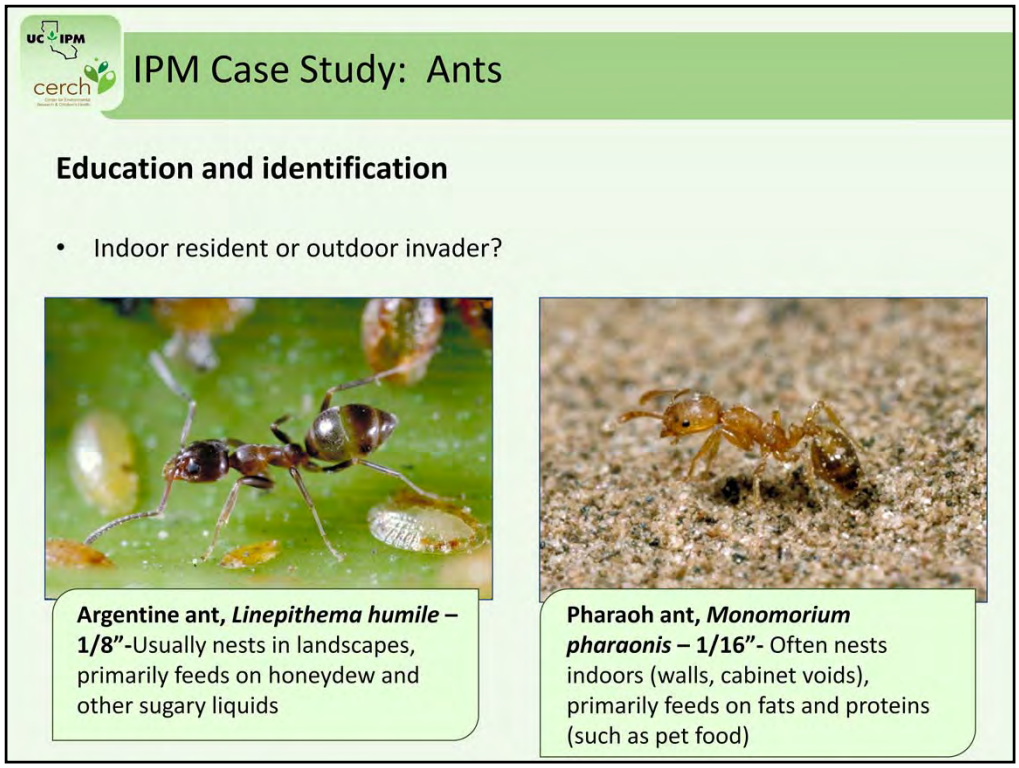
What is NOT a method to prevent pests?

- A) Using screens
- B) Sealing up food
- C) Applying gel bait to cracks and crevices
- D) Fixing leaks

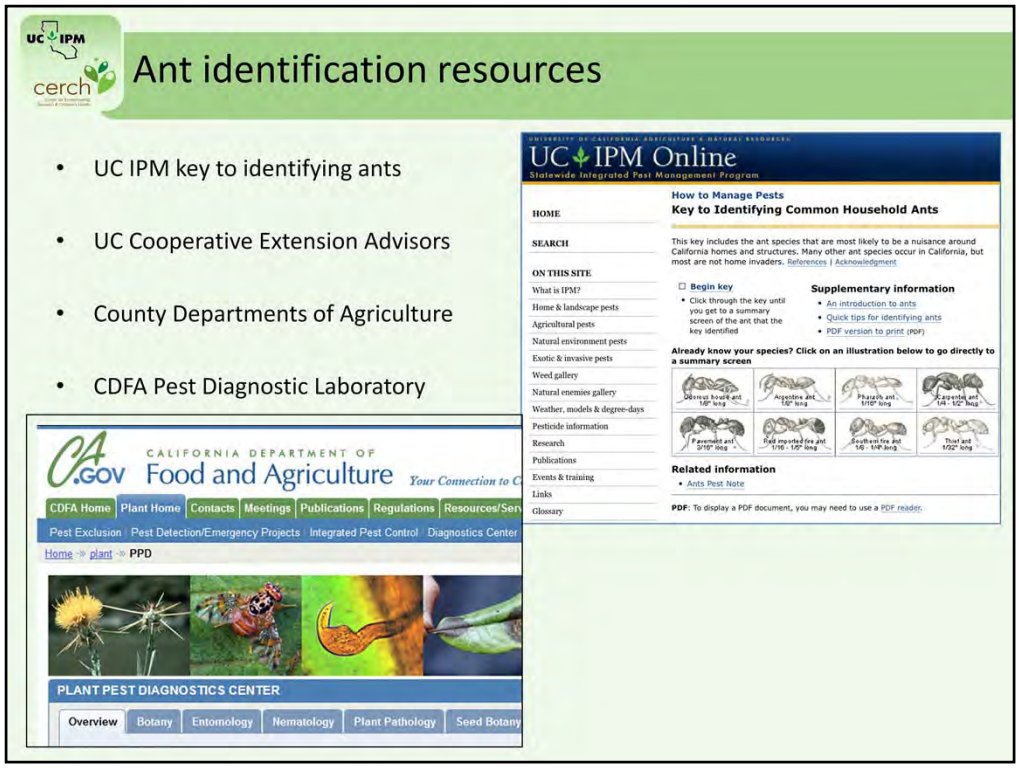
Sorry, that is not right. Please try again.

Great job! Applying gel bait will help control pests, but will not prevent them. Click anywhere to continue.

Submit Clear



Now, let's revisit these primary components of IPM using specific examples, through consideration of a group of common pests in schools and child care settings: ants. When ants are first encountered, the first step towards management is always identification. Success will depend on knowing the nesting and food habits of the species, among other factors. For instance, most ants in California primarily nest outside and can be managed indoors by exclusion and sanitation, while a few species actually nest indoors and will be less affected by such tactics. Similarly, food preferences of the pest species should inform bait choices.



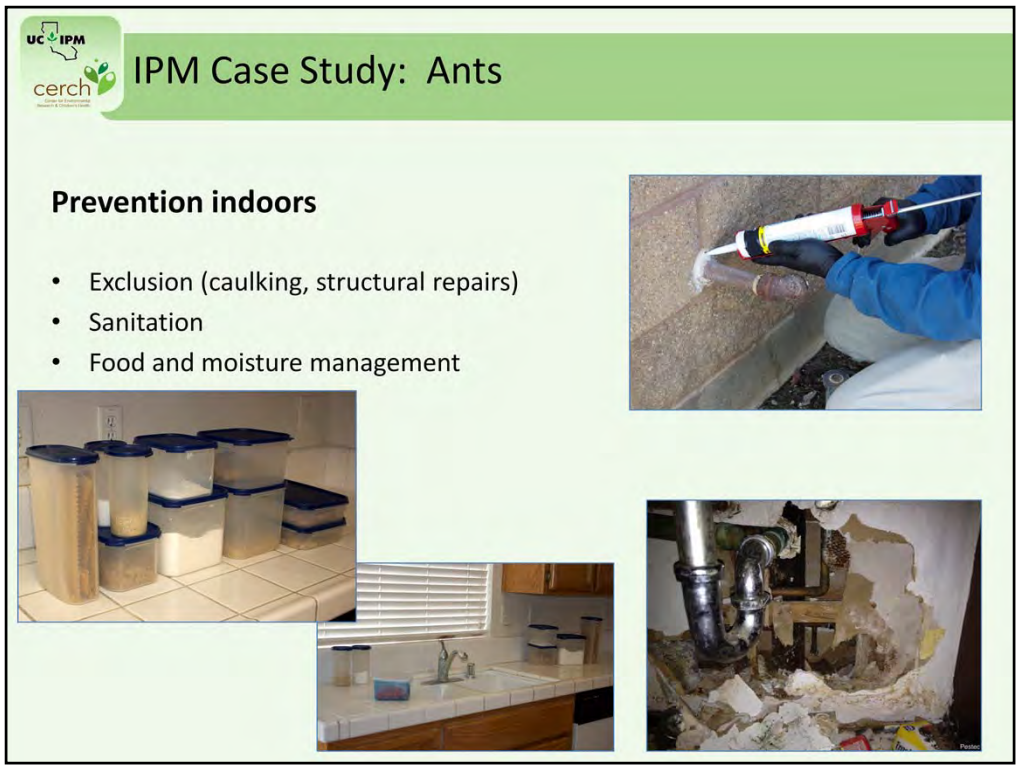
The UC IPM web site contains an interactive ant key that can be used to identify most nuisance species in California. Additional important resources include the local UC Cooperative Extension offices, your county's Department of Agriculture and the California Department of Food and Agriculture.

IPM Case Study: Ants

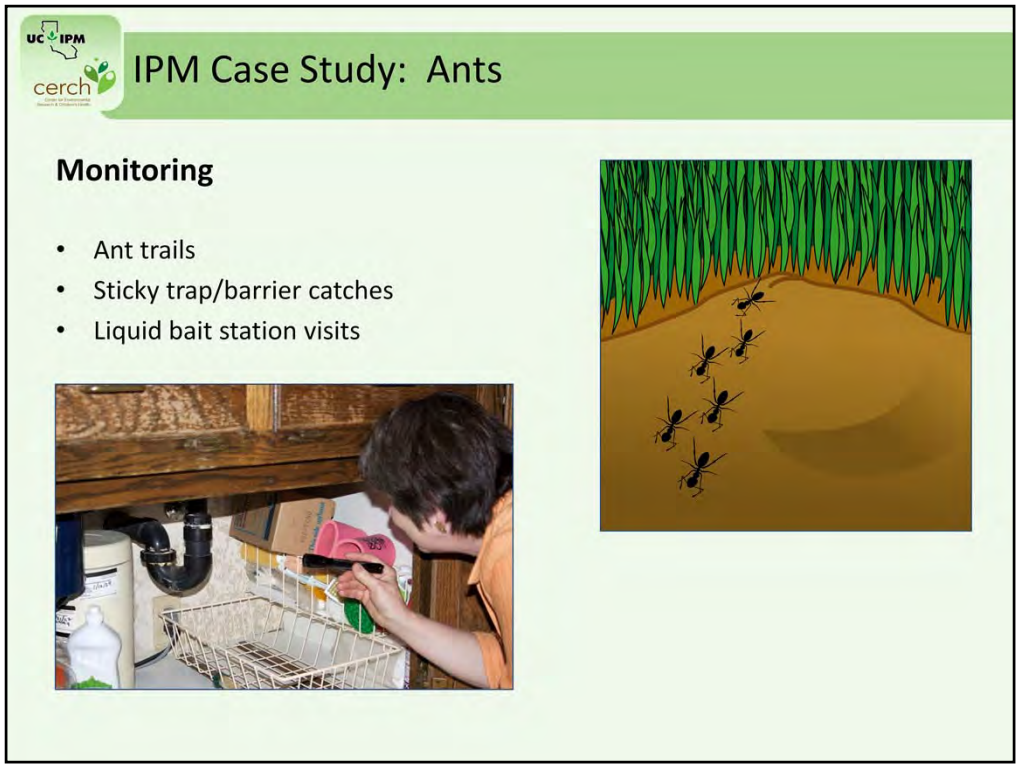
Prevention outdoors

- Proper landscape plant selection
- Management of honeydew-producing insects

Once a positive identification has been made, steps should be taken to prevent ants from becoming pests. If a certain species is expected at a site, preventive measures can be instituted before ants are observed. For instance, in outdoor systems, when trying to prevent Argentine ants (outdoor nests, sugar feeders) from accessing honeydew-producing insects (aphids, scale, mealybugs, whiteflies, etc.) in the landscape, care can be taken to avoid plant species known to harbor such pests. This denies an important resource to the ants and also exposes the honeydew-producing pests to natural enemies that may have been driven off by the ants. Honeydew-producing pests could also be managed directly.



Ant prevention indoors means excluding entry for outdoor species, sealing up potential nest sites for indoor species, and reducing resources available to ants by using proper sanitation, reducing excess moisture, fixing plumbing leaks, and storing food in sealed containers.



Monitoring for ants may be easier and more informative than for other pests since ants form foraging trails, showing a patient observer where they may be entering a structure, where their nest is, and where they are accessing resources such as food and water. Ants may also be incidentally caught in sticky traps or drowned in liquids, giving away their presence. Volumes of liquid bait missing from bait stations may mean ants are visiting the stations.

IPM Case Study: Ants

Thresholds

- Depend on the situation
  - Inside: one ant indoors is rarely too many, but a single scout may bring thousands more
  - threshold may be as low as 1
  - Outside: Situation specific…many may be tolerated
- Ants are important predators and scavengers outdoors

Pest thresholds depend on the situation; as few as one ant found inside may alert managers to points of entry from outside that should be sealed or to sanitation issues that should be remedied while many hundreds of ants outdoors may require no action at all. It is important to remember that ants are beneficial as predators and scavengers in many outdoor systems; the image shown depicts a native grey ant attacking a peach twig borer larva, an important agricultural pest.

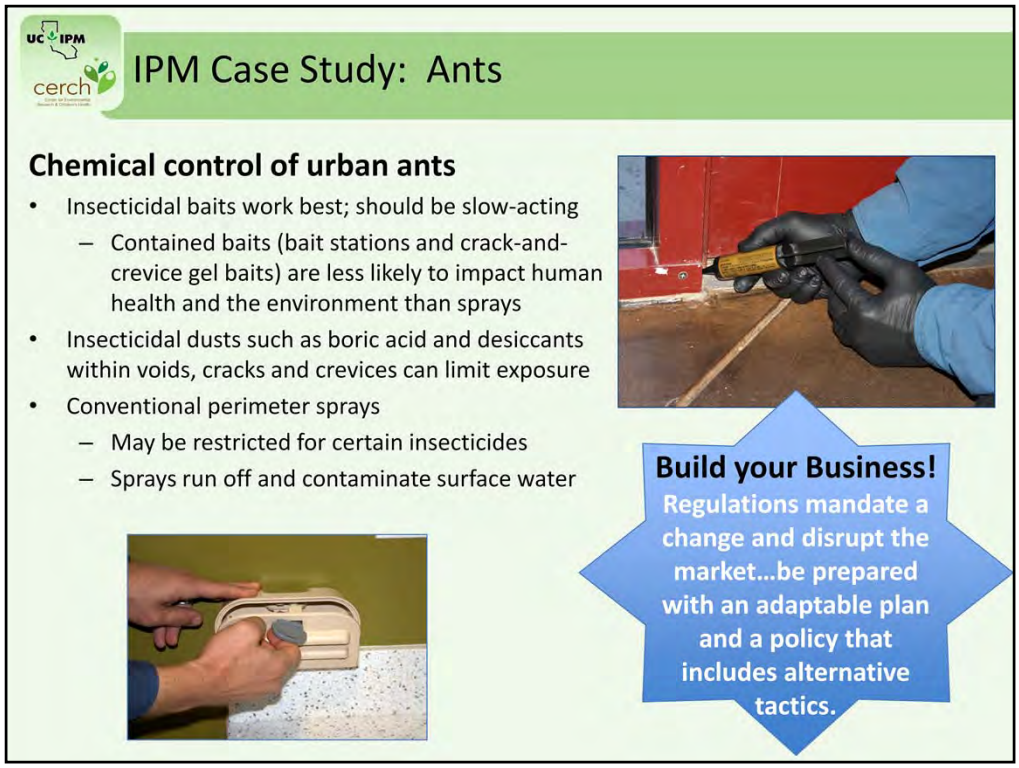
IPM Case Study: Ants

Multiple tactics and integration

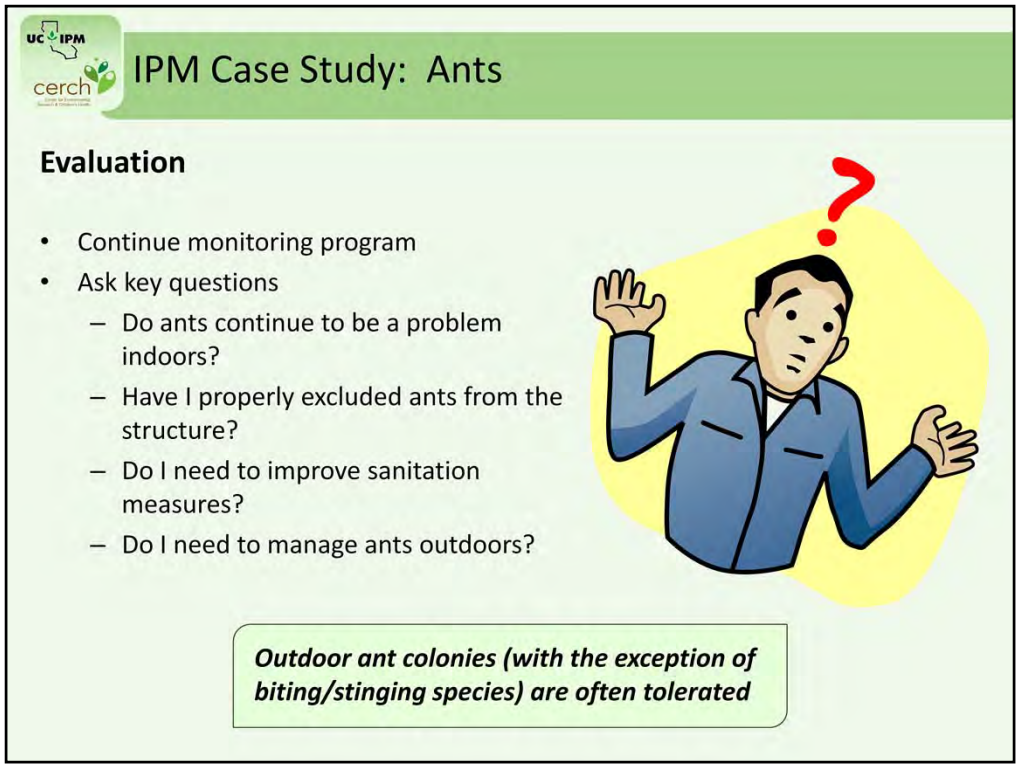
- Inside
  - Exclusion (physical)
  - Sanitation (cultural)
  - Liquid bait stations, gel baits (chemical)

- Outside
  - Plant selection, honeydew management (cultural)
  - Locked liquid bait stations (chemical)

Multiple pest management tactics should be used in concert to effectively suppress or eliminate ants and associated problems. Indoors, a combination of exclusion measures, appropriate sanitation practices, and the use of baits may completely solve recurring ant issues. In outdoor situations, ants may be best managed by targeting the honeydew-producing insects that attract ants in the first place; forceful streams of water may effectively knock aphids off shrubs and wash honeydew off leaves. Self-contained liquid bait stations may be used when these efforts have failed or are not feasible.



Insecticidal baits for ants should be slow acting in nature, allowing ants to transfer the toxin to nestmates, thereby greatly increasing the number killed. If properly contained and secured, these baits are much less likely to impact human health and the environment than applications of liquid insecticides. Some bait applications may be exempt from requirements of the HSA. Placement of insecticides deep within voids, cracks, and crevices is another way to limit human exposures. Conventional perimeter treatments of repellent insecticides, such as pyrethroids, may no longer be legal due to increasing evidence that spray residues wash off and contaminate urban surface waters. Take advantage of new regulations and be prepared with a plan that includes alternative tactics.



An ant IPM program involves constant evaluation. A continuing and regular monitoring program will help to detect ants early and to document changes in the pest population. When managing ants, you may also want to ask key questions in order to determine weaknesses in your program. Are ants a continuous problem? Have they been properly excluded from the structure? Do you need to change any sanitation measures? Do ants need to be managed outdoors? Remember that outdoor ants, with the exception of biting or stinging species, can often be tolerated.

Ants: What to do

Pest problem: Argentine ants are observed in the kitchen

PMP

- Follow ant trail to locate entry points
- Inspect building exterior for potential entry points
- Seal cracks/holes associated with entry
- Continue monitoring
- Consider sugar-based bait stations (must be child-proof, tamper-proof, self-contained)

School / child care center staff

- Contain food, water resources (sanitation)
- Clean up ants with soapy water

If Argentine ants were observed in the kitchen of a school or child care center you serve, you should practice IPM as follows: Locate the source of the ant invasion (it will ultimately be outside somewhere), find all locations where ants are entering the building or may enter in the future, seal up these entry points, and continue your monitoring program. If ants persist indoors, you may consider using self-contained bait stations (out of reach of children), either indoors where ants forage or outdoors where ants nest. Staff at the school or child care center can help by containing all food and water and by wiping up any ants they see (and the associated trails) with soapy water and a cloth.

Spiders: What to do

Pest problem:
Cellar spiders creating webs on ceilings and wall corners

PMP

- Remove spiders and webs with vacuum or brush
- Visually inspect and deploy sticky traps to locate possible points of entry
- Install door sweeps
- Manage flies by improving exclusion and sanitation

Pesticide applications for spiders indoors are never warranted

School / child care center staff

- Manage flies by improving exclusion and sanitation
- Remove spiders and webs with vacuum or brush

If spiders and their webs are the pest issue, practice IPM as follows. Physically remove spiders and their webs using a vacuum or spider brush. For example, a vacuum is very effective at removing black widows on playground equipment. If the problem is indoors, find points of spider entry from outside, seal up these structural gaps (such as by installing door sweeps or window screens), and manage spider prey such as flies that may be indoors due to improper exclusion and sanitation. School and child care center staff can help with any of these tasks. Pesticide applications for spiders indoors are never warranted.

Cockroaches: What to do

Pest problem: German cockroaches discovered on sticky trap in pantry

PMP

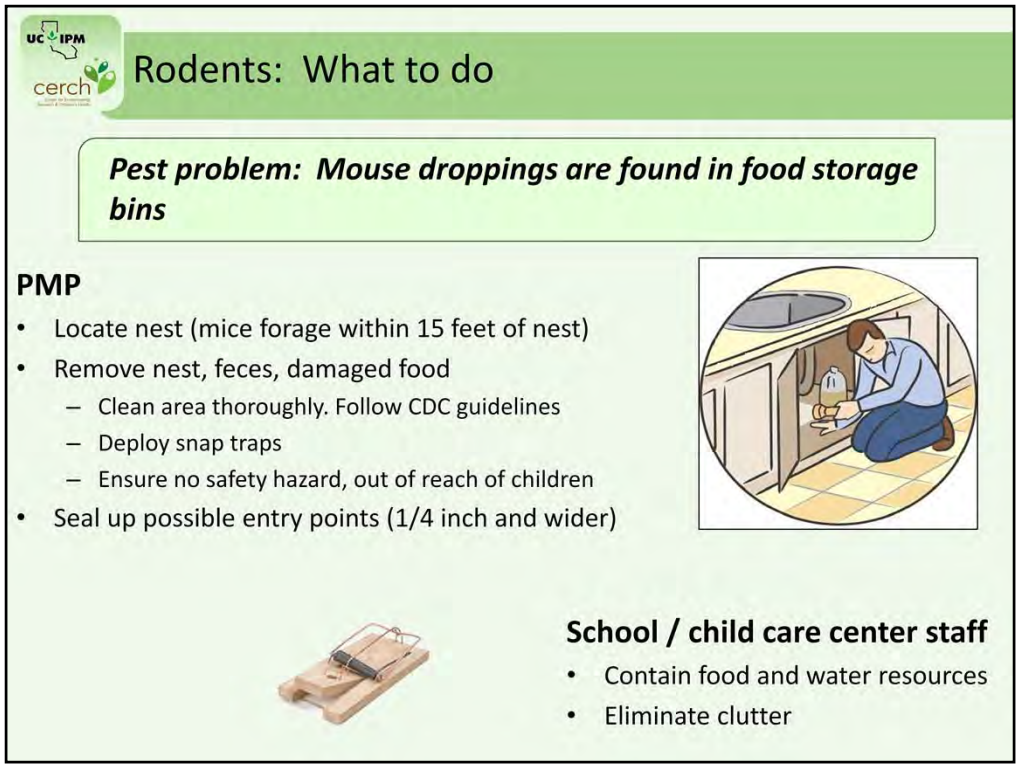
- Communicate with staff about sanitation measures
- Deploy more traps to locate breeding sites
- Use vacuum with HEPA filter to remove debris, insects, eggs from reproductive harborages
- Set out self-contained bait stations or apply gel baits to crevices

School / child care center staff

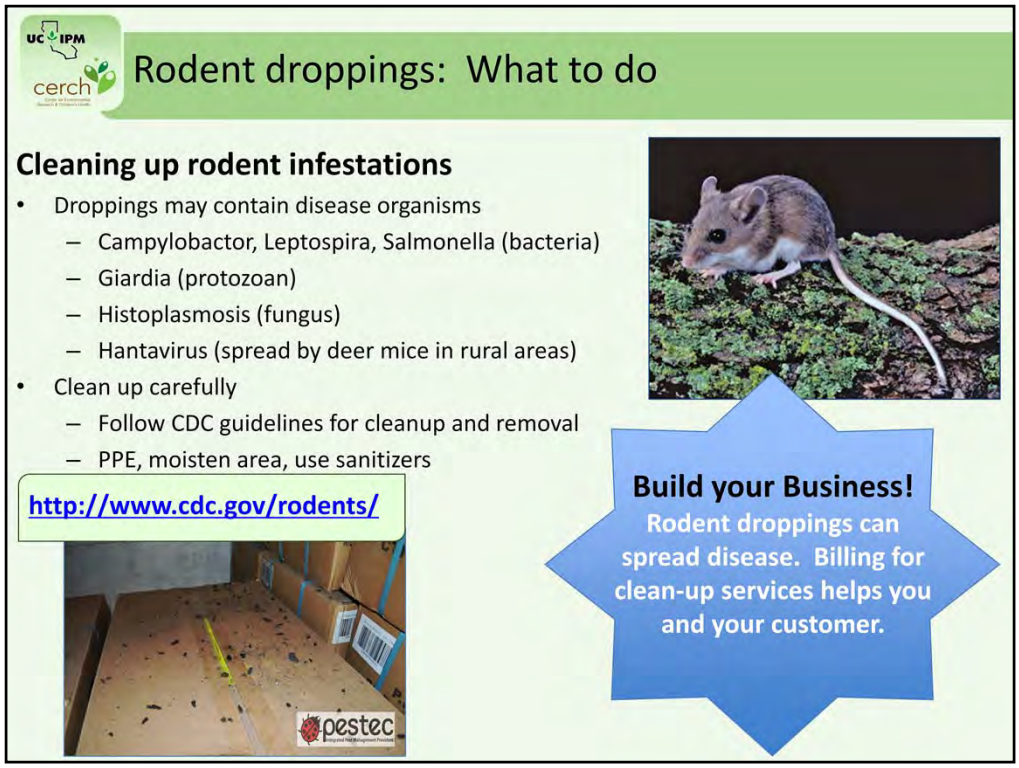
- Contain all food and water resources
- Eliminate cardboard boxes and clutter

If you catch German cockroaches on a sticky trap used for monitoring in the pantry, then it is time to take action. Get help from the center's staff to ensure proper sanitation measures are in place, deploy more traps to determine where cockroach density is highest (these areas will be associated with breeding sites, where eggs are deposited), use a vacuum with a HEPA filter or other physical tool to remove roaches, their eggs, shed skins, and other debris from these locations (cleaning with soapy water and then a disinfectant is an important follow-up action), set out self-contained bait stations labeled for German cockroaches, and seal cracks, gaps, and other access to breeding areas. Staff can help further by properly containing all food and water and by eliminating cardboard boxes and clutter from problem areas.

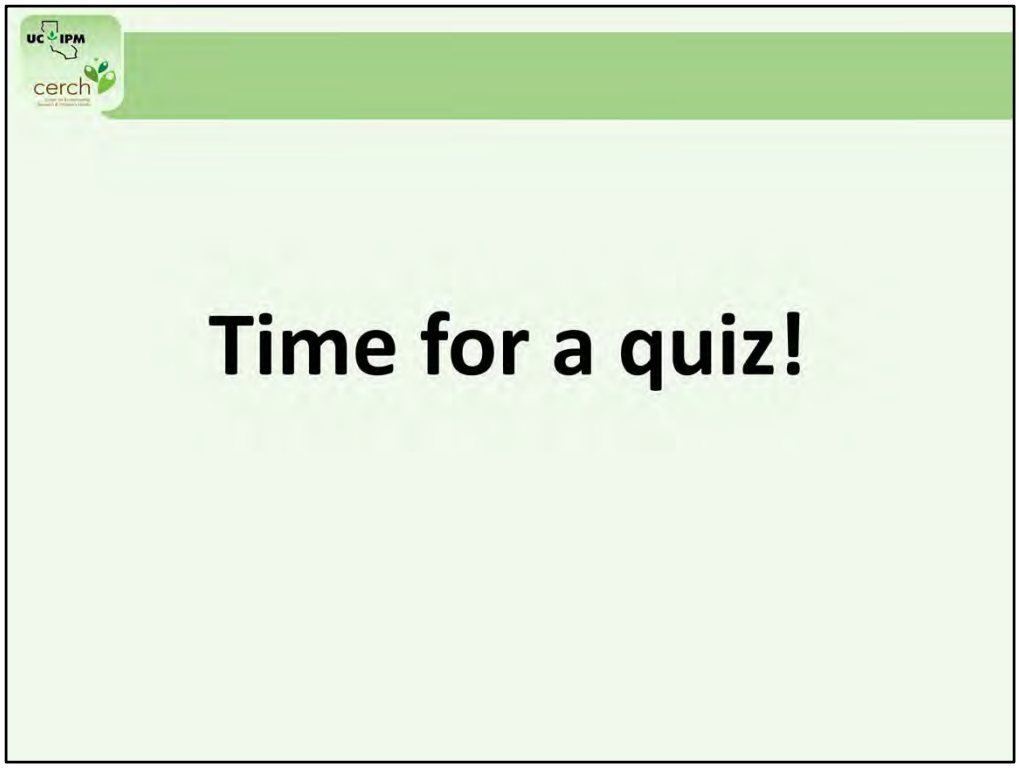
After eliminating a cockroach population, it is important to remove dead insects, shed skins and feces (frass) associated with harborage sites and breeding locations. These items can create and aggravate allergic reactions and asthma. Be sure to wear proper personal protective equipment (PPE), use hot water and detergent, and follow up with a sanitizer. Cockroach frass is a potent allergen. Billing for clean-up services can help you and your customer! Please see our Biohazard Cleaning Fact Sheet as part of this educational module.



If mouse droppings are found in food storage areas, practice IPM to eliminate them: locate the nest (it will be a mass of shredded paper or other fibrous material in a sheltered location within ten or 15 feet of where droppings were observed), remove the nest, any feces, and any food that may have been contaminated, deploy snap traps along walls and other rodent pathways, ensuring that the traps pose no hazard to children or staff, and seal up any possible points of entry from outside (mice can pass through any hole or crack larger than one quarter inch in width). The staff of the center can help prevent future infestations by providing proper sanitation and eliminating clutter in the facility.



Rodent droppings may pose health concerns since they may contain disease-causing bacteria, protozoa, fungi, and viruses. Some, like hantavirus, spread by deer mice in rural areas (depicted in image at upper right), may be highly virulent. These should be cleaned up carefully. Be sure to follow the CDC's guidelines to ensure you are using the proper personal protective equipment and methods. This can be a valuable service for your company. Please see our Biohazard Cleaning Fact Sheet as part of this educational module for more information.



Now lets’ stop for a quick quiz

What is the best way to control ants if chemical use is deemed necessary?

- A) Spot spray the nest
- B) Use baits in stations
- C) Use perimeter treatments

Sorry, that is not right. Please try again.

Yes, you are right! Baits in stations pose the least risk to people and the environment. Click anywhere to continue.

Submit Clear

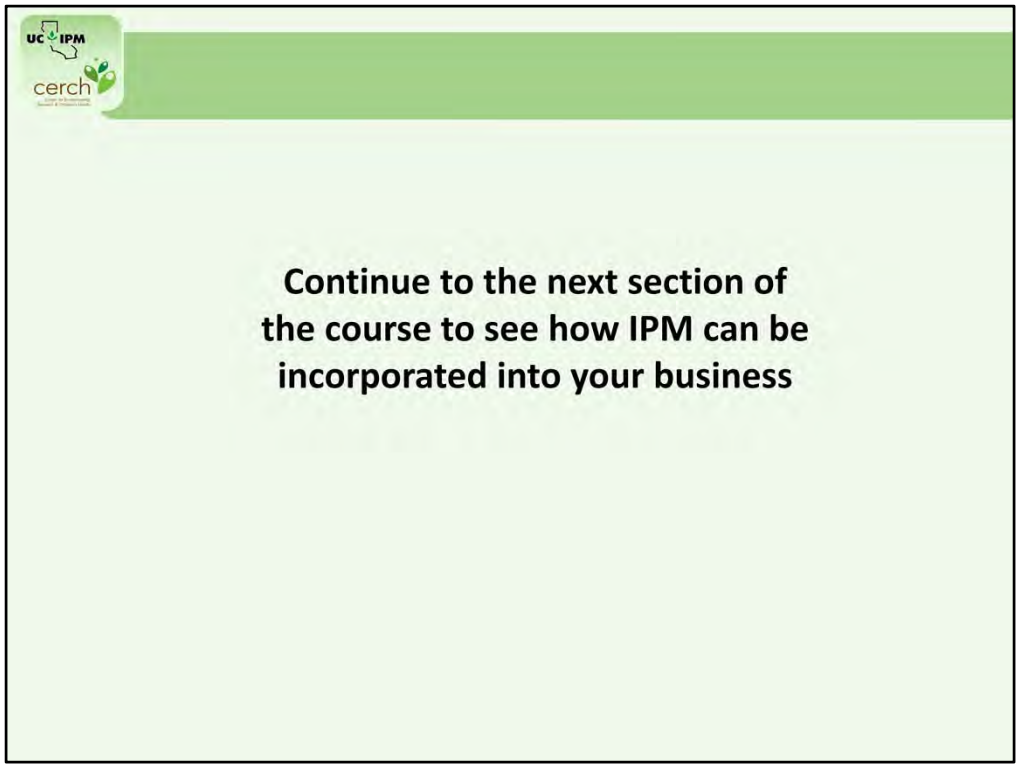
Liquid pesticides should be considered the first line of defense against spiders indoors.

- ○ A) True
- ◉ B) False

Sorry, that is not right. Please try again.

Great job! Click anywhere to continue.

Submit | Clear



This is the end of the IPM section of this course. In the next section, you'll see how IPM can be incorporated into your business.

UC IPM
cerch
Center for Environmental Research & Children's Health
Providing Integrated Pest Management Services in Schools and Child Care Settings
California Department of Pesticide Regulation
pestec
California Department of Public Health
CDPH
UC San Francisco PEHSU Pediatric Environmental Health Specialty Units
Pest Control Operators of California
Alameda County Department of Healthy Homes
University of California Agriculture and Natural Resources
Los Angeles County Office of Education
Serving Students • Supporting Communities • Leading Educators

Section 3: IPM as an effective business model

In this section you will learn about

- Business aspects associated with IPM
- Benefits of using IPM as part of your business
- Key components of an IPM business model
- IPM Certification
- Marketing opportunities

IPM is often viewed as more work and less profitable than conventional pest control services. However, schools, child care providers, and other clients are increasingly demanding services that minimize negative impacts to the environment and their community. In this section, we will review the business aspects associated with implementing IPM in schools and child care and discuss the benefits of using IPM as part of your business model. We'll discuss the key components of an IPM business model and what it takes to be IPM certified. Finally, we'll describe this project's social media forum which may help you market your IPM services.

As with many industries, major changes are occurring in the pest control industry. There are increasin restrictions on pesticides, and new products and services are constantly being developed and marketed. With health concerns about pesticide exposure and with the Healthy Schools Act in place, there is increasing interest in IPM approaches to pest management. These changes create new business opportunities.

Some things have not changed. For example, some pest thresholds are set by laws and liabilities. For instance, cockroach and rodent feces and urine pose risks to human health as sources of disease and asthma triggers, meaning that these pests should not be allowed to occur indoors. Therefore, mandating a pest threshold of one (one roach or rodent observed means action should be taken). Failure to maintain pests below these thresholds (a very real possibility when providing reactive or pesticide-reliant services) may expose property managers and owners to the risks of health code violations, fines, damage to their reputations, and lawsuits.

What has changed is the increased attention to the risk posed by pests and the pay-outs for these pests as demonstrated by these lawsuit awards. This increased attention has raised the risk liability for pest control companies. In the past pest control operators (PCOs) and the industry as a whole paid most attention to lawsuits based on misapplications and chemophobic persons. The industry responded b improving its professionalism with programs such as the NPMA's Quality Pro certification and stressing pesticide application safety. With the increasing focus on healthy housing and the link between cockroaches and asthma, and emerging pest threats such as mosquitos carrying West Nile Virus and bed bugs, the potential for more lawsuits exists when pest management methods are incomplete.

PMPs can protect themselves by providing quality IPM services, instituting preventive measures, monitoring for pests regularly and often, communicating in writing, keeping detailed records of monitoring data and actions taken and employing a variety of effective tactics to quickly and decisively manage infestations.

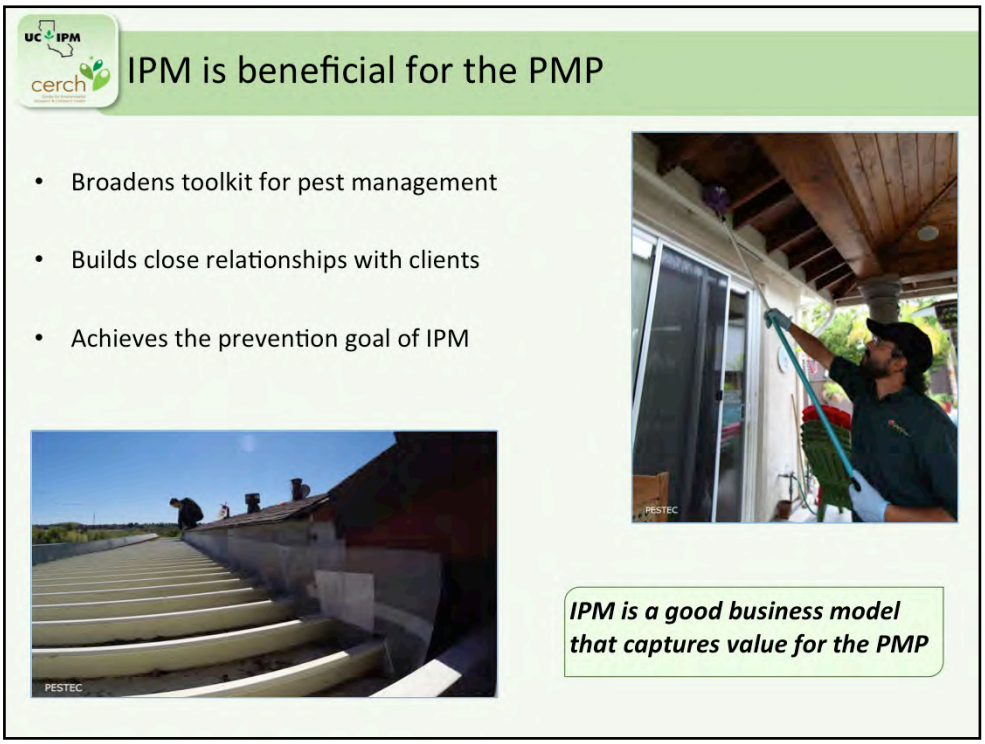
IPM adds value for the client

- A preventive program protects your client's business
- IPM addresses client concerns
  - Pest reduction
  - Minimal pesticide use
- Supports compliance with the Healthy Schools Act

http://www.sfenvironment.org/download/pest-prevention-by-design-guidelines

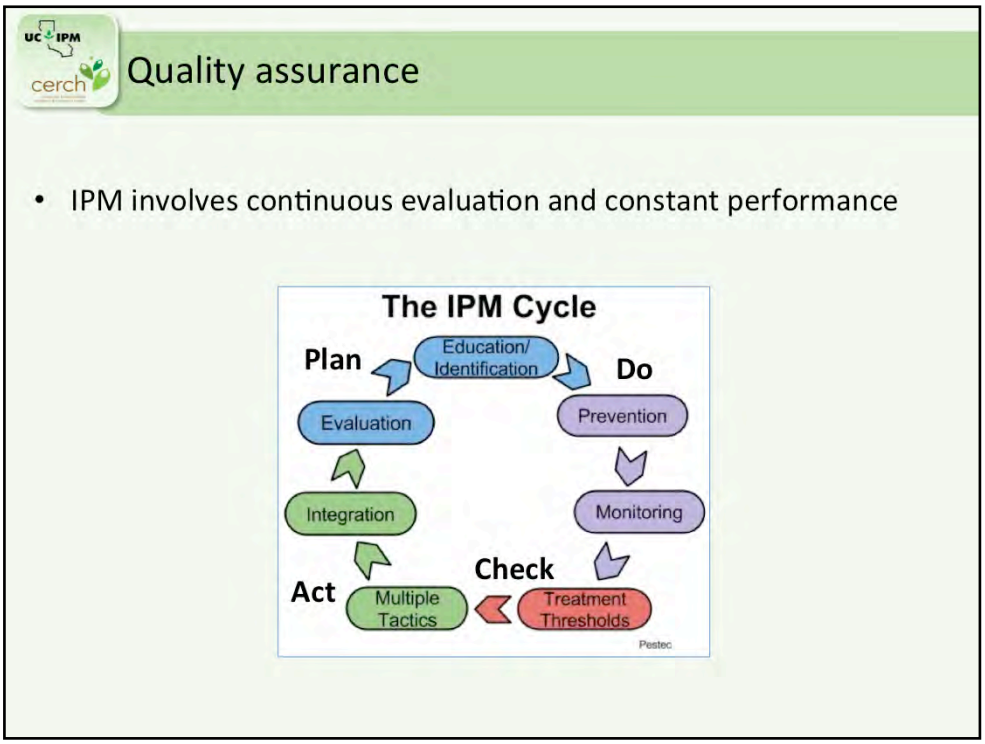
IPM services are valuable for your customers. IPM protects a school and child care program's environment. It reflects the growing demand for reduced risk pest management and ensures that PMPs have a broad toolkit to control pests with minimal pesticide use. Some pest control companies have found that IPM programs are initially more expensive for clients, but that over time the costs go down. For instance, building and site design with pest prevention in mind may represent additional costs up front but may effectively prevent pest entry for years, resulting in substantial savings and a healthy indoor environment for years to come. The free publication "Pest Prevention by Design," developed by the San Francisco Department of the Environment and the International Code Council, includes many ideas for this kind of holistic prevention.

Contracting for IPM services also makes it easier for school and child care programs to comply with the Healthy Schools Act, which helps them keep their stakeholders (the children's parents) satisfied customers.



Not only is IPM beneficial for the client, it is also beneficial to the pest management professional. The needs of every client are unique and the IPM toolkit is expansive. By offering and providing a service that satisfies the client's unique needs and reinforcing that satisfaction with communication, IPM programs foster close relationships that promote loyalty and contract renewals.

To achieve the prevention goal of IPM, service programs should employ constant monitoring and additional services that fill the gaps that exist in every organization. With experience PCO's can value these services appropriately, generating on-going revenue and opportunities for add-on services. Thus, IPM is a good business model that captures value for the pest management professional.



IPM involves continuous evaluation of performance and constant improvement. Many large institutional pest control contracts require a quality assurance plan, but the concept applies to all company management systems.

The quality assurance cycle is ongoing and evolving as is IPM. The Plan-Do-Check-Act cycle of IPM is:

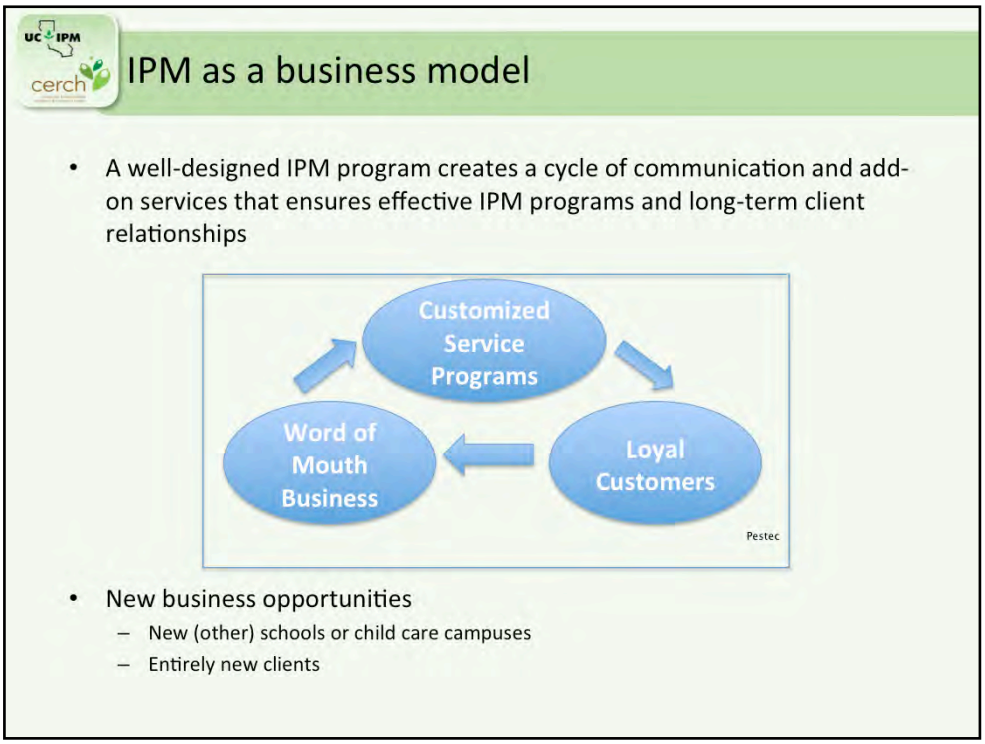
Step 1: service development and agreement. Here the PCO learns from the client what their pest problems are and educates the customer on the service solution, or IPM service program that will resolve their problem.

Step 2: is the delivery of the service that includes a detailed inspection, report, monitoring, prevention, and treatment plan.

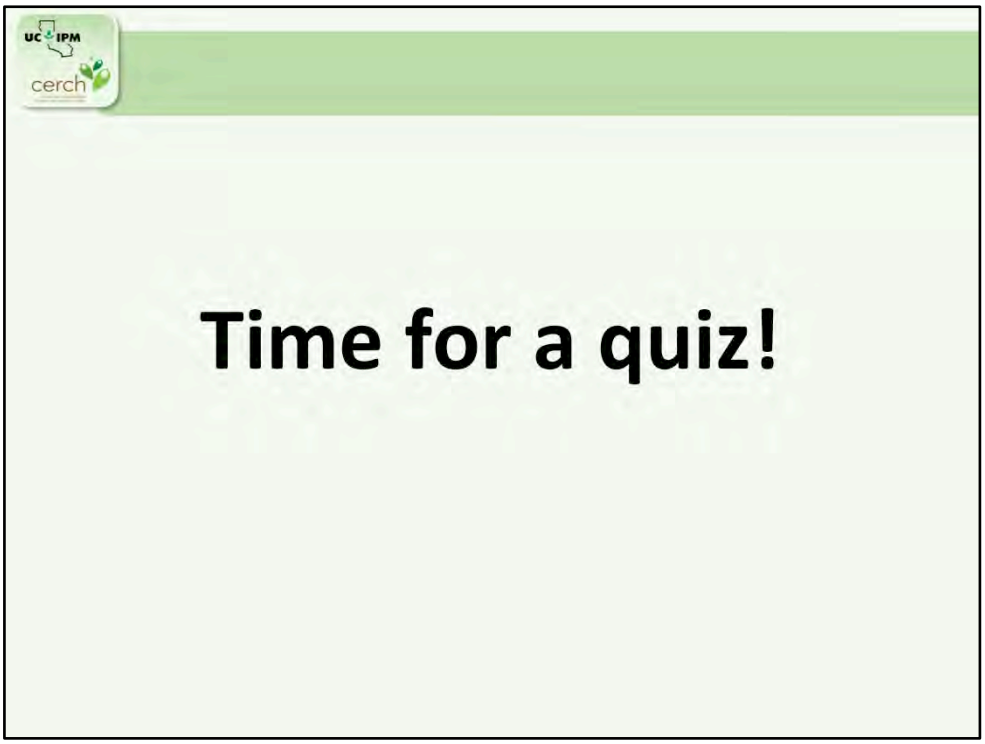
Step 3: is checking to see if the plan is working, are the pests under control now, or below our action threshold?

Step 4: is the additional treatment that is needed to achieve control. This could require additional treatments or other services such as training for staff persons on the IPM program.

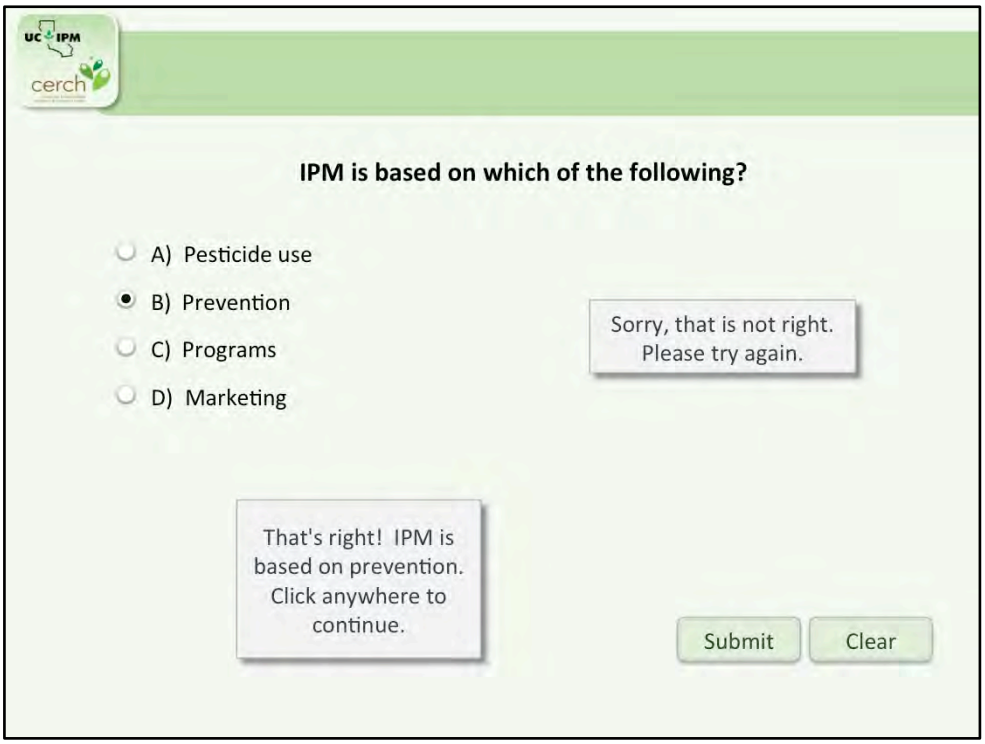
Step 5: is the evaluation step- was this program successful? Was the PCO profitable while satisfying the client's needs? This evaluation is then communicated back to the client to strengthen the partnership and to avoid repeating actions that did not work.

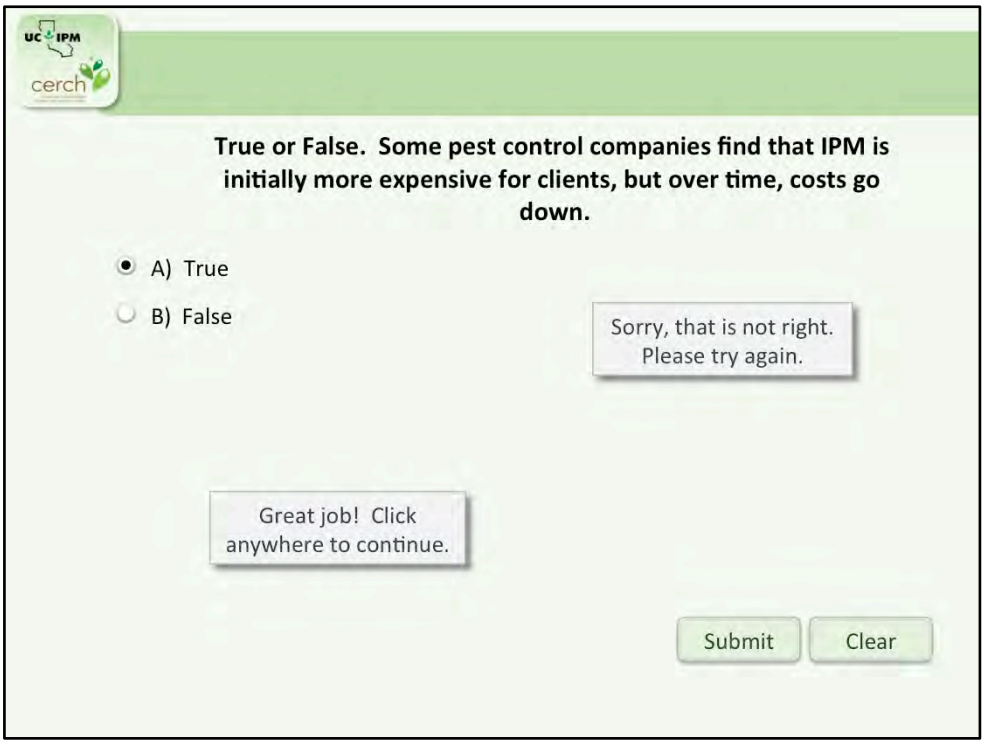


Effective business models exhibit sustainable growth. A well-designed IPM program creates a cycle of communication and add-on services that ensures effective IPM programs and long-term client relationships. Done well, these components create positive feed-back loops that increase the number of clients and business opportunities. These might include new schools or child care campuses as populations and programs expand or entirely new clients. Remember, the Healthy Schools Act is intended as a Right-to-Know law, with the intended audience being the parents of the kids. This audience can be a PCO's best friend. Make sure your brand is visible and your services professional so they will remember your company when they have a pest problem at home or work.



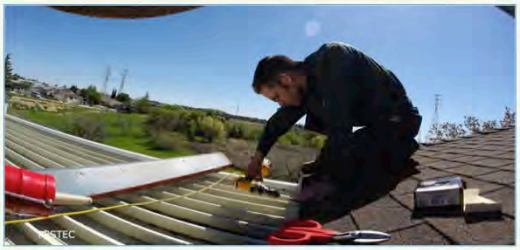
Now, let's stop for a quiz


IPM is based on which of the following?
A) Pesticide use
B) Prevention
C) Programs
D) Marketing
Sorry, that is not right. Please try again.
That's right! IPM is based on prevention. Click anywhere to continue.
Submit
Clear


UC IPM
cerch
True or False. Some pest control companies find that IPM is initially more expensive for clients, but over time, costs go down.
A) True
B) False
Sorry, that is not right. Please try again.
Great job! Click anywhere to continue.
Submit
Clear

Key components for IPM business success in schools and child care settings

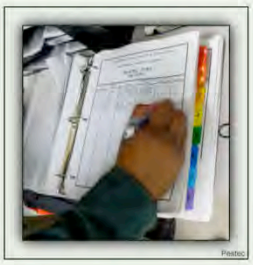
- Communication
- Scope of work
- Monitoring and prevention
- Accurate record keeping
- Program evaluation
- Assessment of time and costs
- Add-on services
- Marketing



The core components of a successful IPM business model are clear communication, a well defined scope of work, ongoing monitoring and pest prevention, careful handling of data, program evaluation, careful assessment of time and costs, offering of billable add-on services (such as handling compliance with the Healthy Schools Act), and marketing that highlights client benefits.

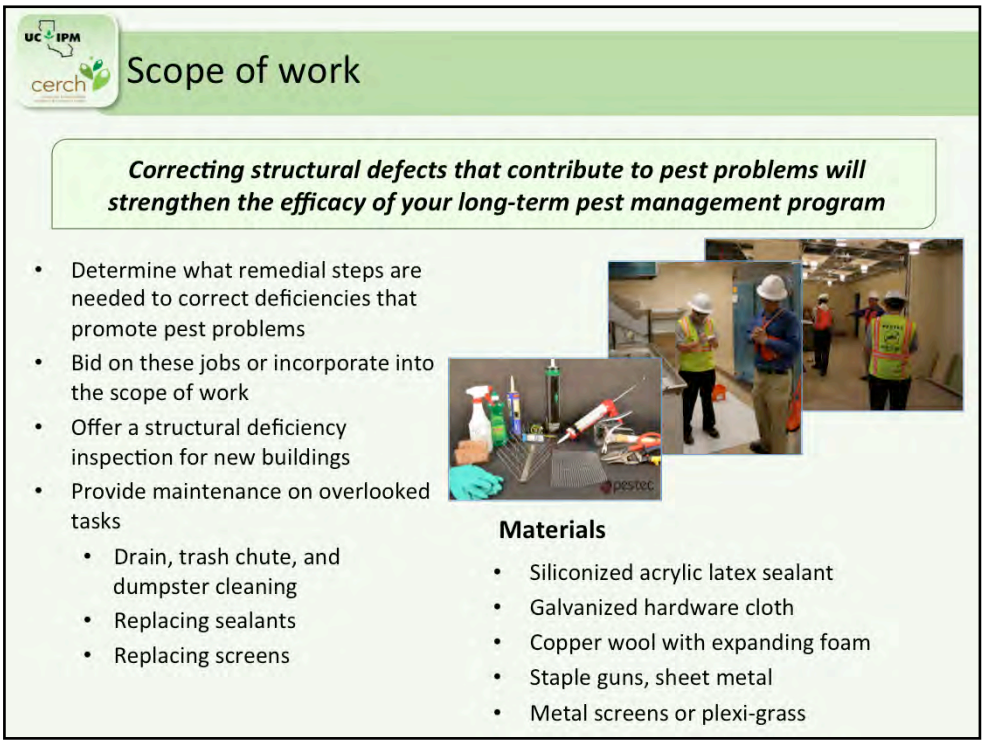
Communication

- Everyone is part of the IPM team
- Let others know what their responsibilities are
- PMP documents and reports what the client needs to know
- Clearly explain the client's responsibilities
- Communicate the science and logic of your findings and recommendations
- Consider more frequent services, change in tactics, or other pesticides



One of the key differences in the approach to contracting IPM versus conventional pest management is the concept of forming a team to manage pests. Everyone that occupies a school or child care center is part of the IPM team, though they may not know it. It is your responsibility to let the people you interact with and their counterparts know what their responsibilities are. This can happen verbally when you are providing monitoring services or addressing a pest problem, in writing within your reports, or in a pest sighting log book, or by an email including digital photos. As a pest management professional, it is your responsibility to get to the places no one else wants to go, to see and document the things no one else wants to see, and to report the things that they MUST know if they want to keep their site free of pests. A clear understanding of the roles and responsibilities of each pest management stakeholder/ team member should be outlined in your statement of work and IPM plans.

Child care and school staff do not always comply with recommendations to reduce pest access, harborage, or food and therefore IPM can be challenging to implement. To help bring everyone on board with the IPM program, you will need to communicate the science and logic of your findings and recommendations. Although many IPM recommendations are common sense, they are not common knowledge. Don't get discouraged. If you continue spreading the word, then people will listen and eventually work with you. In the meantime you may need to escalate your actions with more frequent services, a change in tactics, or other pesticides. The school and child care staff share in this decision when they do not comply with your recommendations.



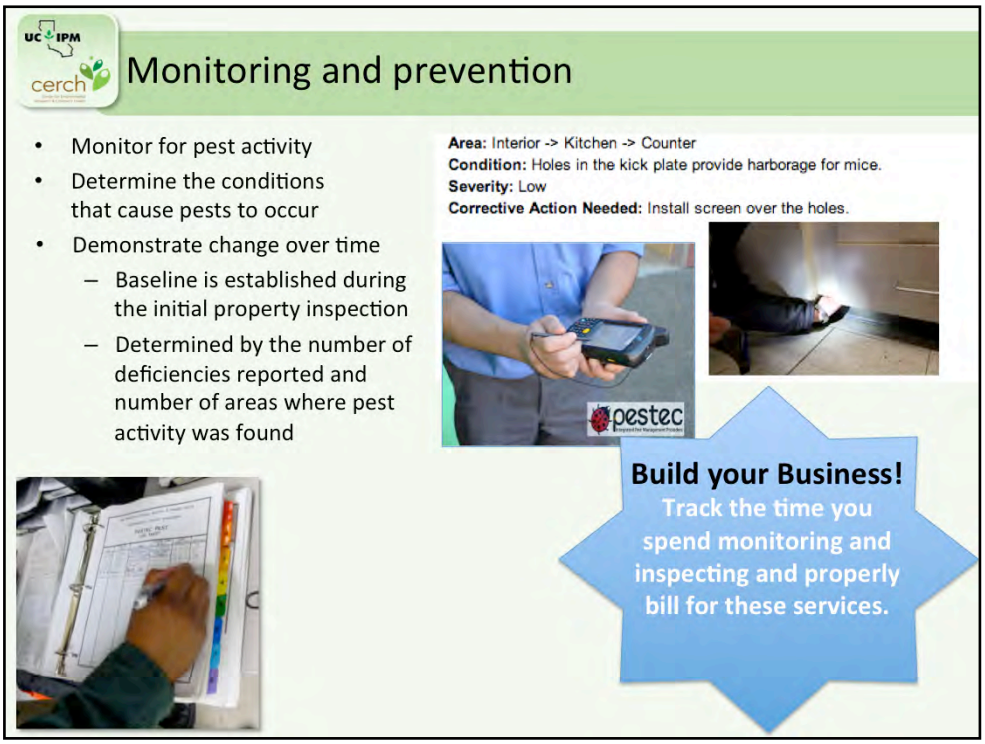
The first goal of IPM is to prevent pests. In the context of an IPM program in schools and child care centers, correcting building defects that contribute to pest problems will strengthen the overall efficac of your long-term pest management program. After your initial inspection, determine what remedial steps may be needed to correct deficiencies that promote pest infestation. For a successful business model, make sure you can provide these services and bid successfully. A separate license is not required

An excellent service PCO's can offer clients that are moving into newly constructed buildings is a structural deficiency inspection. This service is best provided when the construction company is still working on-site and the service can generate a punch list of construction details that the builders can correct before they leave. This highly valuable service can save the client thousands of dollars and man headaches later on by having the building pest proofed prior to moving in or before taking responsibilit for future repairs.

Even after the client has taken responsibility for the maintenance of a building, many maintenance tasks may be overlooked or under prioritized. These tasks may include drain/ trash chute/ and dumpste cleaning, replacing worn out sealant around back splashes, or replacing rusted out screen vents.

The tools needed to provide these services range from commonplace to specialized and can usually be acquired at a local hardware store. These may include Premium Siliconized Acrylic Latex Sealant (no caulking), galvanized hardware cloth, copper wool and/or other exclusion stuffing materials, expandin foam or pre-mixed concrete for larger gaps, staple guns, and sheet metal.

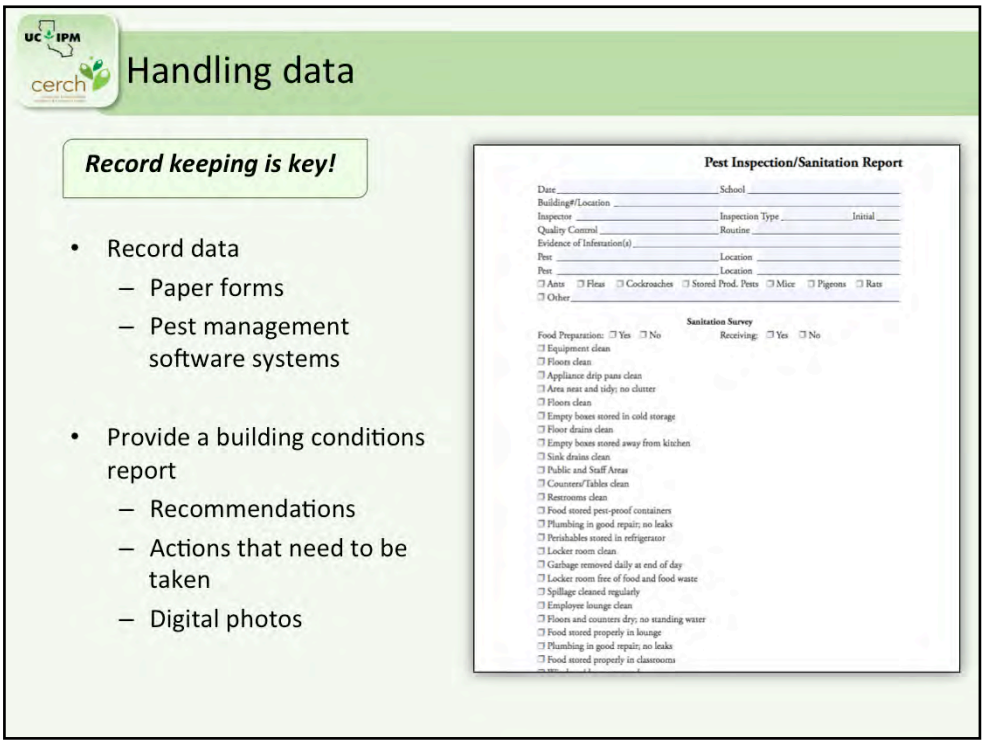
More advanced materials may include extruded metal screens and plexi-glass for nearly invisible barriers.



As mentioned earlier, the first goal of IPM is to prevent pests. A primary component of an IPM program for schools and child care centers is monitoring for pest activity AND the conditions that cause them. For example, you may notice holes in the kick plate underneath the kitchen counter. These holes can allow mice or other pests to enter. By monitoring regularly, you and your customer can catch these problems early on and make changes to prevent future problems. In such a case, you might install a metal screen over the holes.

You can evaluate the effectiveness of your program by demonstrating change over time. This should include change in *both building deficiencies and pest activity, when present. The baseline for measuring this change is established during the initial property inspection and can be determined by the number of deficiencies reported and the number of areas where pest activity was found.*

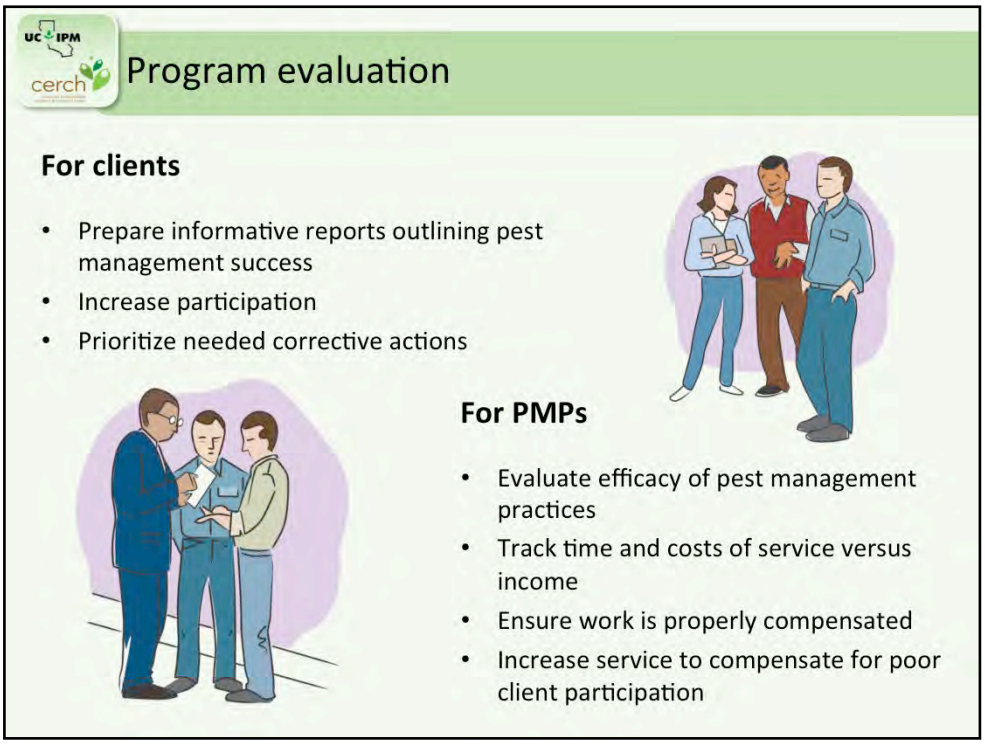
To successfully run your business, it is essential to value and track the time you spend inspecting and monitoring pest problems and make sure you properly bill for these services. Where previously you may have billed for a specific service, such as monthly spraying, with IPM it may be necessary to bill for monthly inspections and treatment as necessary services.



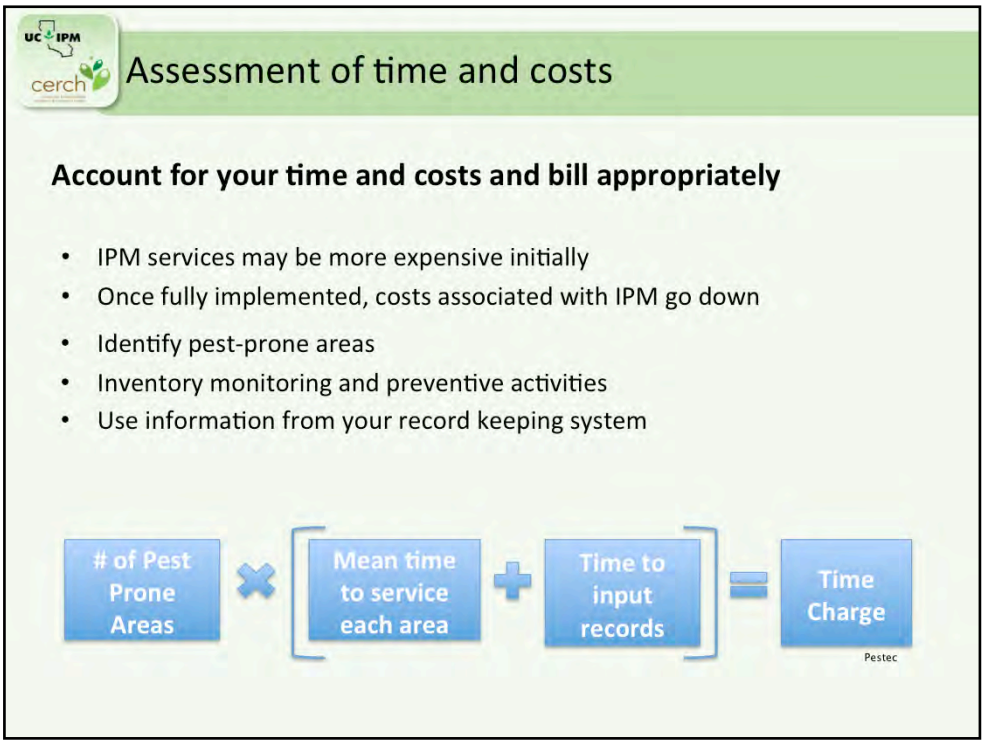
A monitoring service is only as good as it's record keeping system. Sample paper forms are available from EcoWise certified and GreenPro as well as the DPR School IPM website in the curriculum for Structural IPM.

Since paper forms can be cumbersome and will require subsequent data entry for visualizing pest trends, pest management software systems may offer better data management. These systems are advertised in trade magazines such as *Pest Control Technology* and *Pest Management Professional* and have the added benefit of providing online customer access for viewing pest service reports and paying bills.

Regardless of what system a pest control business employs, it is always necessary to report back on the building conditions at the end of each service. Let the IPM coordinator know your recommendations and what actions need to be taken. A follow up email with digital photos may also help ensure that the IPM recommendations are effectively communicated.

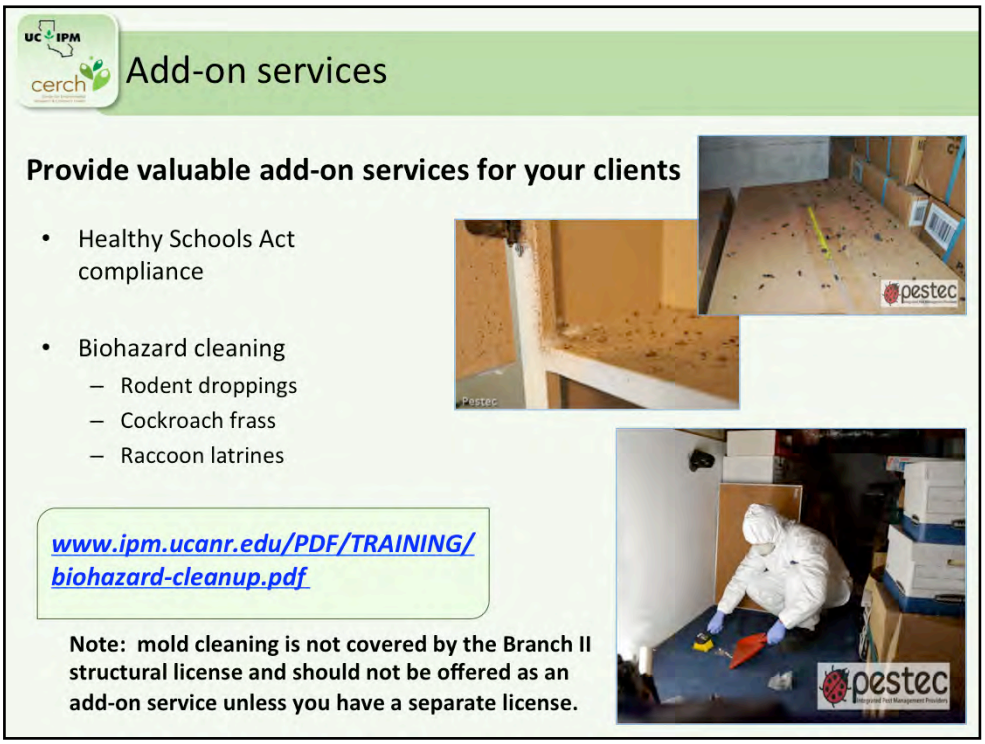


Program evaluation is a primary component of IPM in practice. Clients might prepare reports outlining successes, try to increase participation among the staff, and determine what staff actions may be needed to facilitate and complement the IPM program in place. Program evaluation by the PMP, including consideration of the time, costs, and profitability associated with specific pest control services, is necessary to ensure that the work is properly compensated monetarily so that the business *and* the client can thrive.



As mentioned already, it is important that pest control businesses properly account for their time spent and other costs and bill customers appropriately. Initially, IPM services may be more expensive than conventional pest control services, but once fully implemented and once structural deficiencies have been addressed, overall costs should go down. Several academic studies suggest that IPM programs are not more expensive for schools.

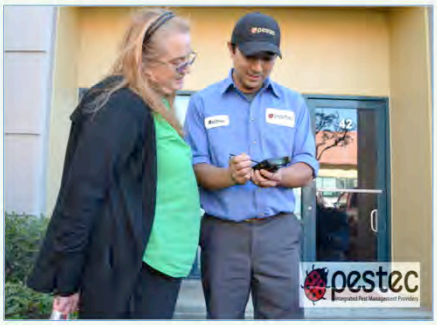
Billable services include time spent identifying and inspecting pest prone areas (such as kitchenettes, trash areas, play structures), monitoring and preventative activities performed at each location (checking sticky traps, servicing bait stations, de-webbing areas), and time spent to compile information and produce reports and recommendations (paperwork or with a handheld device). Make sure that you track the time and resources you spend for each activity. Consider incorporating these data into your inspection and monitoring forms and data management systems.



You can provide valuable add-on services such as Healthy Schools Act reporting and record-keeping compliance or biohazard cleaning. Earlier in the presentation we talked about rodent droppings and cockroach frass. Raccoon latrines are another important pest problem in play yards. Raccoon feces contain a roundworm that can cause brain damage in children. See our fact sheet for more information on clean-up methods for these three pest hazards. Keep in mind that mold cleaning is not covered by the Branch II structural license and should not be offered as an add-on service unless you have a separate and appropriate license.

Marketing IPM services

- Listen to the needs of the customer
  - Identify shortfalls and causes of pest problems
- Focus on information
  - Gathering
  - Documentation
  - Dissemination
- Be able to understand and communicate on the client's needs based on pest pressures, site conditions, and requirements of the HSA



IPM is ….

- Effective at preventing pests
- Cost-effective and safe
- Compliant with the HSA
- Validated by third-party certifiers
- An opportunity for PMPs and schools / child care providers to be branded as "Green" businesses

Marketing IPM is very much like marketing conventional pest management services. It's key to listen to the needs of the customer, helping them to identify any service shortcomings and causes of their recurring pest problems. The key difference is that in IPM the focus is on information – information gathering, documentation and dissemination. Your salespeople must therefore be highly communicative and able to contextualize the client's needs based on the pest pressures of the site and condition of their buildings while considering the requirements of the Healthy Schools Act.

It is important to get the message across that IPM is effective at preventing pests, is cost-effective, and safe. IPM is compliant with the Healthy Schools Act and validated by third-party certifiers. Using IPM gives you, schools, and child care providers an opportunity to be branded as a green business.

Three differen third-part certifyin agencie – Ecowise, Green Shield, an GreenPro – offer IPM certifications for pest control companie and, in some cases, individual PMPs With increased education regarding the requirements of the Healthy Schools Act in child care centers and schools, an wit the increasing number of certifie green buildings, the likely trend for the future is t se more pest control companies adopt IP policies and bi on contracts tha specify a third party IPM certification. Such certifications may help companies to continually improve service programs an their botto line.

Other benefits o becoming IPM certified are that th certifications provid another sourc of product differentiatio from competitor and withi your company's existing service lines. If you ar not plannin on standardizin all your service programs to meet the requirements of the HSA, then having th suppor o these organizations i developing certified services will help you develop the systems you need in your compan to meet th requirements of th law. These system will include additiona training, recordkeeping, service planning, reporting, and program evaluation. IP certificatio partner can b a great source of informatio and assistance for you business, as well as an excellent marketin tool.

Lastly, if you are sellin a contract tha falls unde the IPM certification standards, the certification applies t th customer a well Wit the focu o pes prevention on exclusion and source control, obstacle tha you ma fac i getting the customer to comply with IPM recommendation may b approached a a contractual obligation. If the are contractin a certified service and do not perform their obligation under th contract, th burde o risk may then fall on the customer

Societal values are changing right now and pest control business that can respond to these new demands will thrive. Change is an opportunity for growth.

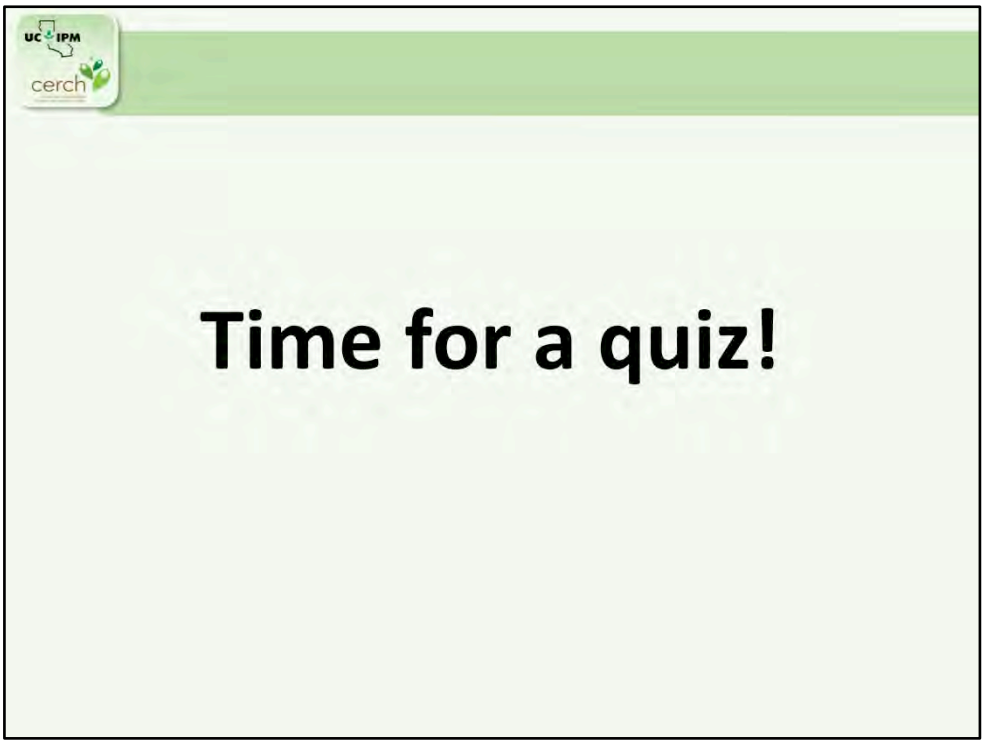
Market your success

CERCH conducts extensive outreach to schools and child care facilities in California and nationally

- With your permission, contact information for PMPs and companies completing this course will be posted on the CERCH website: http://cerch.org/research-programs/child-care/IPM-CEU-Participants

The CERCH web site is linked to agencies serving thousands of schools and child care centers across California and will be a long-term resource for providers.

The Center for Environmental Research and Children's Health (CERCH) conducts extensive research to child care centers in California and across the country. As part of this course CERCH will develop a database of individuals and companies that have completed this CEU course. This information will be linked to child care referral agencies in California and other agencies serving child care centers, as well as the certification agencies. Thus, this database will provide a mechanism for child care providers to find pest control companies familiar with IPM and the Healthy Schools Act and may be a valuable marketing tool.



Now, let’s stop for a quick quiz.

What is NOT one of the key components of a successful IPM business model in schools and child care?

- A) Scope of work
- B) Evaluation
- C) Trapping
- D) Marketing

Sorry, that is not right. Please try again.

Great job! Click anywhere to continue.

Submit Clear

Correcting structural defects can strengthen the overall efficacy of your long-term pest management program.

- (●) A) True
- ( ) B) False

Sorry, that is not right. Please try again.

Great job! Click anywhere to continue.

Submit Clear

DPR IPM in Schools and Child Care Videos

IPM for Child Care Centers – A Video Series (English)

IPM for Child care Centers – A Video Series (Spanish)

A good resource on IPM in child care is a series of videos prepared by the California Department of Pesticide Regulation. The videos are in English and Spanish. These videos may provide some new information to you, but may also be a valuable tool to educate your clients about IPM.

For more information .....

CDPR programs supporting IPM in schools and child care, including training, IPM Toolkit, Handouts:
http://apps.cdpr.ca.gov/schoolipm/childcare/

CDPR Tools and Templates for forms, notification, etc. Very helpful!
http://apps.cdpr.ca.gov/schoolipm/tools_templates/main.cfm

UC IPM:
http://www.ipm.ucanr.edu/

Center for Environmental Research and Children's Health (CERCH) child care programs:
http://cerch.org/research-programs/child-care/

Pest Prevention by Design – SF Dept. of Environment:
http://www.sfenvironment.org/download/pest-prevention-by-design-guidelines

There are several other excellent resources on IPM. The California Department of Pesticide Regulation's "Growing up Green" program offers extensive information on IPM and the Healthy Schools Act. The University of California's Statewide IPM program also maintains extensive information and resources regarding pest management, including IPM methods for many specific pests. Finally, CERCH at UC Berkeley has worked with other programs to develop an IPM Toolkit for child care providers. This toolkit, available online, can serve as an excellent tool to educate child care providers about IPM.

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Final section test questions for HSA section (70% is required to pass; if participant doesn't pass, new version of test will be given with questions and answers shuffling)

1. What is **NOT** considered part of a school site under the Healthy Schools Act?
    a. Playgrounds, athletic fields at a child care facility
    b. Government building 1/4 miles away from a child care center
    c. School vehicles
    d. A public park visited by students more than 20 hours a week during 14 or more weeks per year

2. Following the requirements of the Healthy Schools Act, the school or child care provider must:
    a. Notify parents of intended pesticide use
    b. Maintain a registry for parents/staff who want notification of pesticide use
    c. Post warning signs
    d. Keep written records of pesticide use
    e. Designate an IPM coordinator
    f. All of the above

3. Following the requirements of the Healthy Schools Act, the PMP must:
    a. Work with the school/child care center to facilitate compliance
    b. Notify the school/child care center when pesticides are to be used
    c. Report pesticide use to the county agricultural commissioner and to DPR
    d. Avoid banned pesticides
    e. Provide five days (120 hours) notice of intent to apply any non-exempt pesticide
    f. All of the above

4. 72 hours before an application, what information does the school or child care center need to send out to the registry of parents and staff who want to be notified of individual applications?
    a. Product name, active ingredient, and the date of application
    b. All the trade names of the chemical
    c. Potential health effects of exposure to the pesticide
    d. MSDS of the chemical

5. How long do the signs need to be posted in the treated area before and after the application?
    a. 24 hours before, and 72 hours after the application
    b. 5 days before, and 30 days after the application
    c. A week before and two weeks after the application
    d. As long as there is a smell

6. Signs need to be posted by the school or child care center before and after pesticides have been applied. What information does **NOT** need to be included on the sign?
    a. The words "Warning: pesticide-treated area"
    b. Product name
    c. Active ingredient
    d. The phone number to the child care center
    e. Scheduled date of application and areas to be treated

7. True or False. When you are treating the grounds of a community college that includes a child care facility, you need to notify the child care staff about an application that is less than 10 feet way from the child care boundary.
    a. True
    b. False

8. How long do PMPs need to keep records of pesticide applications?
    a. 6 months
    b. 2 years
    c. 10 years
    d. 20 years

9. Which is **NOT** a pesticide report that must be submitted by PMPs serving schools or child care centers?
    a. Monthly Summary Pesticide Use Report to the county agricultural commissioner
    b. Annual School Site Pesticide Use Reporting Form to DPR
    c. Monthly Summary Pesticide Report to DPR

10. True or False
    Pest control businesses using products exempt from notification and posting under the Healthy Schools Act still need to record and report use to DPR annually and the county agricultural commissioner monthly if the product is **NOT** exempt from registration.
    a. True
    b. False

11. Which of the following pesticide containing products are exempt from notification and posting requirements under the Healthy Schools Act?
    a. Self-contained baits or traps
    b. Gel or paste not used as crack-and crevice treatments
    c. Pellets
    d. Uncontained powder

12. Which of the following pest control products are exempt from record keeping and reporting requirements?
    a. Foggers
    b. Food grade essential oils
    c. Liquid sprays containing registered pesticides
    d. A pest control gel not applied in a crack

Final section test questions for IPM section (70% is required to pass; if participant doesn't pass, new version of test will be given with questions and answers shuffling)

1. Why is pest ID so important in an IPM program?

   A. It will help determine management strategies
   B. So you can tell your client what problem they are facing
   C. In order to spray it before it becomes a big problem
   D. It isn't important to identify pests

2. Which of the following will NOT help prevent pest problems?

   A. Leaving food out on the counter
   B. Installing door sweeps
   C. Caulking cracks
   D. Trimming bushes away from buildings

3. True or False

   Monitoring for pests helps determine whether pests are present and whether the population is increasing or decreasing.

   A. True
   B. False

4. Fill in with the correct response

   In schools or child care facilities, more preventive measures are necessary because thresholds are _____ than in landscapes.

   A. Higher
   B. Lower

5. What series of categories shows the correct order corresponding to these specific pest management tactics?

   Biopesticides, exclusion, vacuum, repellent

   A. Chemical, Physical, Cultural, Biological
   B. Chemical, Cultural, Physical, Biological
   C. Biological, Cultural, Physical, Chemical
   D. Biological, Physical, Cultural, Chemical

6. When should pesticides be used in an IPM program?

   A. Never
   B. Only if applied in bait stations
   C. Only as a last resort when other tactics have failed or are unavailable
   D. Just on weekends

7. If using pesticides, what are some ways to limit exposure in a school or child care setting?

   A. Restrict applications to cracks and crevices
   B. Use bait stations
   C. Use as a last resort and make precise targeted applications
   D. All selections are correct

8. Which of the following is NOT an important component of the evaluation phase of an IPM program?

   A. Keeping records
   B. Estimate the pest density based on previous experience
   C. Evaluating monitoring data
   D. Identifying shortcomings of the treatment(s) used and considering appropriate changes

9. How can you monitor for ants in IPM?

   A. Observing ant visits to bait stations
   B. Using sticky trap/barrier catches
   C. **Both A and B.**
   D. Pheromone traps

10. For which pest situation would this IPM program be best suited?

    Follow pest trail to locate source, inspect building exterior for potential entry points, seal all cracks/holes associated with entry, continue monitoring, and consider sugar-based bait stations (must be child and tamper-proof and self-contained)

    A. Cellar spiders creating webs on ceilings and wall corners
    B. Mouse droppings are found in food storage bins

C. German cockroaches have been discovered on a sticky trap in a food storage area
D. Argentine ants are observed in the kitchen

11. For which pest situation would this IPM program be best suited?

Remove pest with vacuum or brush; visually inspect and/or deploy sticky traps to locate possible points of entry; possibly install door sweeps; reduce prey

A. Cellar spiders creating webs on ceilings and wall corners
B. Mouse droppings are found in food storage bins
C. German cockroaches have been discovered on a sticky trap in a food storage area
D. Argentine ants are observed in the kitchen

12. For which pest situation would this IPM program be best suited?

Communicate with staff about sanitation measures; deploy more traps to locate breeding sites; use vacuum with HEPA filter to remove debris, insects, eggs from reproductive harborages, consider self-contained bait stations; clean frass to reduce allergens

A. Cellar spiders creating webs on ceilings and wall corners
B. Mouse droppings are found in food storage bins
C. German cockroaches have been discovered on a sticky trap in a food storage area
D. Argentine ants are observed in the kitchen

13. For which pest situation would this IPM program be best suited?

Locate nest; remove nest and all feces/damaged food, follow guidelines to avoid airborne pathogens; deploy snap traps; clean area to eliminate biohazards

A. Cellar spiders creating webs on ceilings and wall corners
B. Mouse droppings are found in food storage bins
C. German cockroaches have been discovered on a sticky trap in a food storage area
D. Argentine ants are observed in the kitchen

Final section test questions for Business section (70% is required to pass; if participant doesn't pass, new version of test will be given with questions and answers shuffling)

1. Fill in with the correct response

   IPM programs create a cycle of _____ that ensures effective service and long-term client relationships?

   A. Pest control
   B. Work
   C. Communication
   D. Chaos

2. What are some good ways to communicate pest problems to other members on your team?

   A. Verbally
   B. Written
   C. Email with photos
   D. All selections are correct

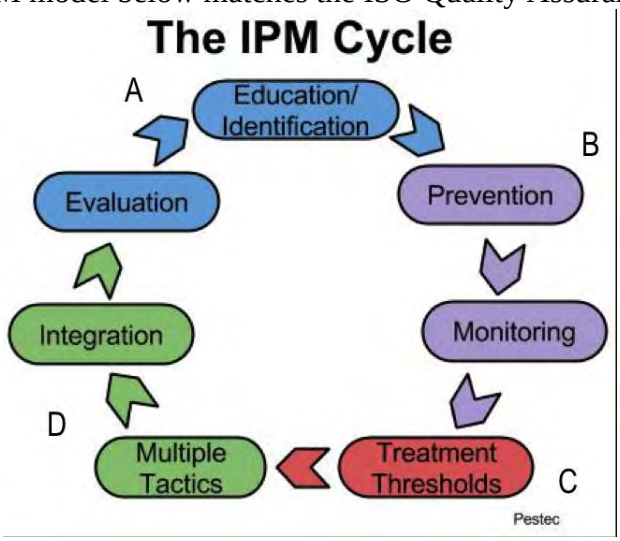
3. What are TWO things that may result from adopting an IPM policy?

   A. You won't have to follow the HSA
   B. You will be able to create a marketing tool
   C. You can improve your service programs
   D. You will have to train more staff

4. What is NOT a reason for an increasing interest in IPM?

   A. Increasing restrictions on pesticides
   B. Pest thresholds are changing
   C. Health concerns
   D. New materials are being developed

5. The IPM model below matches the ISO Quality Assurance Cycle.



Which series below shows the correct order of the ISO components that correspond to the IPM components in ABCD order?

A. Plan, Do, Check, Act
B. Plan, Act, Check, Do
C. Check, Do, Plan, Act
D. Check, Plan, Act, Do

6. What are some things for which you can bill?

A. Regular monitoring and inspecting
B. Time spent compiling records and reports
C. Correct structural deficiencies
D. **All selections are correct**

7. What clean up service should NOT be offered as an add-on service unless you have a separate license?

A. Cockroach frass
B. Rodent droppings
C. Mold
D. Raccoon latrines

Appendix 2: Fact Sheets

Healthy Schools Act Fact Sheet

Healthy Schools Act requirements specific to Pest Management Professionals (PMPs)

Why should you care about the Healthy Schools Act?

The Healthy Schools Act places requirements on PMPs that you MUST know about!

The Healthy Schools Act (HSA), seeks to minimize pesticide exposure to children in public schools and public and private child care centers. The law is overseen by the Department of Education and the Department of Pesticide Regulation (DPR).

What does the HSA require?

The HSA has 5 main components:

- **Right to know:** parents and staff have a right to be informed about pesticide applications in schools and licensed child care centers.
- **Record keeping**: PMPs, schools, and child care facilities must keep records of pesticide applications.
- **Reporting**: PMPs must report pesticide applications directly to DPR in addition to the monthly summary report to the county.
- **Training**: PMPs serving schools and child cares must take a DPR-approved training course that meets the HSA training requirement that covers IPM in schools and the safe use of pesticides in relation to the use of pesticides at schools and child care sites. This training will be required once during each license cycle and will count toward continuing education (Effective July 1, 2016).
- **IPM Plans**: Schools and child care centers must have an IPM plan to address pest problems.

Where does the HSA apply?

The HSA applies to:

- All public K-12 schools
- All public and private child care centers.

What is a school or child care site?

- A school or child care site includes all buildings or structures (including attics and crawl spaces), playgrounds, athletic fields, school vehicles, or any other area of school property visited or used by pupils.
- Licensed family child care homes, where the owner/director lives on site, are exempt from the Healthy Schools Act.

Healthy Schools Act requirements specific to Pest Management Professionals (PMPs)

What does the HSA require of PMPs?

1. PMPs must provide **five days' (120 hours) notice** to child care staff or property owner or manager and **three days' (72 hours) notice** to school staff when they intend to apply pesticides at the school or child care site.

    - Note: If a child care facility is located on a larger property with other uses, notification is required if pesticide applications are within 10 feet of the facility, even if they are not inside the facility. For example: If you treated the grounds of a community college that included a child care facility and the applications were less than 10 feet from the child care boundary, you would have to notify the child care staff five days before doing the work. Note: Property owners must notify a PMP if a child care program is present at a location under a service contract.

    - Applications to private property or parks adjacent to schools and child care do not require notification, unless the property or park is regularly used by the school or child care. The PMP must be notified of these circumstances.

    - Parents who have requested notification must be notified **by the school or child care program** at least 72 hours before an application. The school or child care program will need the following information from the PMP :

        - Product name
        - Active ingredient
        - Date of application

Emergency Conditions

- Advanced notice is not required when "emergency conditions" are present. Emergency conditions exist when the school and child care staff or property owner conclude that the immediate use of a pesticide is necessary to protect the health and safety of children, staff, other people, or the facility. A yellow jacket nest is an example of a possible emergency. Posting of the site must be completed as soon as the decision to spray has been made, then left in place for 72 hours after the application.

Healthy Schools Act requirements specific to Pest Management Professionals (PMPs)

2. Parent notification and site posting is only required for registered pesticides applied using liquid sprays; uncontained powder, pellets, pheromones; or foggers, or others not included below.

- No notification and posting is required for registered pesticides used as self-contained baits, tamper and child-resistant bait stations, and gels or pastes used as crack-and crevice treatments; **however**, the PMP must keep records of these applications and report them to the Department of Pesticide Regulation and the County Agricultural Commissioner (see below).
- The following pesticides do not require notification, record keeping, or reporting:
  - Antimicrobials, sanitizers, and disinfectants
  - Pesticides exempt from U.S. EPA regulation or registration; i.e., 25(b) materials – food grade essential oils and others

3. The PMP must keep records of pesticide applications for 2 years and report pesticide use to the county agricultural commissioner *and* DPR:
   - Submit two pesticide use reports

     1) The **Monthly Summary Pesticide Use Report** (PUR) to the county agricultural commissioner (CAC)
     2) The annual **School Site Pesticide Use Reporting Form** to DPR. For pesticides applied at the end of December, the form must be submitted by January 30th of the following year

   - The school or child care program must keep records for 4 years and the records must be accessible to the public.

4. PMPs serving schools and child cares must take a DPR-approved training course that meets the HSA training requirement that covers IPM in schools and the safe use of pesticides in relation to the use of pesticides at schools and child care sites. This training will be required once during each license cycle and will count toward continuing education (Effective July 1, 2016).

5. The PMP must not use prohibited pesticides.
   - Some pesticides cannot be used in schools or child care. The pesticide label and registration must be current. DPR maintains a list, updated quarterly, of pesticides prohibited from use in child care facilities. (http://apps.cdpr.ca.gov/schoolipm/school_ipm_law/)

Resources

Center for Environmental Research and Children's Health (CERCH) child care programs

- http://cerch.org/research-programs/child-care/

UC Statewide IPM Program

- www.ipm.ucanr.edu/

California Department of Pesticide Regulation IPM in Schools and Child Care

- School IPM (www.cdpr.ca.gov/schoolipm/)
- IPM in child care (http://apps.cdpr.ca.gov/schoolipm/childcare/)

Information about pesticide products and safety and the Healthy Schools Act

- List of pesticides prohibited from use in schools and child care centers: (http://apps.cdpr.ca.gov/schoolipm/school_ipm_law/prohibited_prods.pdf)

Biohazard

Fact Sheet

Biohazard Clean-up

Why should you care about biohazard clean-up?

Cleaning up biohazards protects children's health and can be a new source of revenue to your company.

Rodent, raccoon, and cockroach urine and feces can contaminate play areas, toys, food contact surfaces, and utensils. Some diseases they spread include:

- Campylobacter (bacteria)
- Leptospira (bacteria)
- Salmonella (bacteria)
- Raccoon roundworm
- Giardia (protozoan)
- Histoplasmosis (fungus)
- Hantavirus

Cockroach frass and rodent urine also contain allergens, and the smell of droppings and urine attracts other pests. Clean-up is important to protect children's health.

Pest management professionals can provide valuable add-on services addressing these biohazards under your current license.

Employees involved in biohazard removal should wear personal protective equipment:

- Tyvek suit
- Disposable gloves. Don't use cloth or leather
- Goggles
- Work boots or shoes
- Half or full-face respirator with HEPA cartridges or an N95 respirator

Note: clean-up of mold requires a separate license. See below for tips on removing biohazard material caused by various pests.

Rodent Biohazard Clean-up

Rodent Feces and Urine

All personnel involved in cleaning rodent biohazard material should wear PPE.

Spray the floors and walls where there is evidence of rodent activity with a disinfectant solution. Give special attention to dead rodents, rodent nests, droppings, food, or items contaminated by rodents. Thoroughly soak these items with the disinfectant and allow to sit wet on the surface for the recommended dwell time. Use a shovel or other tool and place in a heavy-duty plastic bag, seal tightly, and then double bag. Wash hard surfaces again with a disinfectant cleaner. Never attempt to remove dry materials with a vacuum or by sweeping. When complete, dispose of protective clothing and disinfect boots.

Deer mice are the principal reservoir of *Sin Nombre* virus, which causes Hantavirus Pulmonary Syndrome (HPS). Although rare and mostly limited to rural areas, HPS can cause severe respiratory disease in humans.

Resources

- Cleaning up after rodents (http://www.cdc.gov/rodents/cleaning/)
- Facts about hantaviruses (http://www.cdc.gov/hantavirus/pdf/HPS_Brochure.pdf)

Raccoon Biohazard Clean-up

Raccoons

Raccoons leave their feces in one area called a **raccoon latrine**. The raccoon roundworm can spread to people by the ingestion or inhalation of eggs from their feces, and can cause brain damage in young children. Roundworms are not killed by chemicals or bleach and they can stay in the soil for years.

Photos courtesy L. Kristen Page, Wheaton College

To clean a raccoon latrine:

- Wear protective personal protective equipment. Avoid stirring up dust and debris. Wet the latrine area with water from a spray bottle to reduce dust.
- Use a shovel or disposable rigid scoop to gently lift feces and any other contaminated material and place it into a heavy-duty plastic garbage bag.
- Close the plastic bag tightly with a twist-tie or tape, and place it inside another garbage bag, seal tightly and discard it in a garbage collection can.
- Disinfect hard, smooth surfaces (including shovel blades) with boiling water. Most chemicals do not kill roundworm eggs and are not suitable for outdoor use. If the latrine is on the ground and the soil is heavily contaminated with feces, remove and discard the top 2-4" of soil and replace it. Large quantities of soil are best discarded in landfill disposal sites.
- Dispose of protective clothing.

Resource

- Raccoon Latrines: Identification and Clean-up (http://www.cdc.gov/parasites/baylisascaris/resources/raccoonlatrines.pdf)

Cockroach Biohazard Clean-up

Cockroach Feces

Cockroach feces can contain germs, and they also cause allergies and trigger asthma. Removing the feces is important to prevent asthma in children.

To remove cockroach feces:

- Use a vacuum with a HEPA filter to remove dust, dead insect bodies and parts.
- Use the crevice tool to vacuum cracks where roaches hide.
- Remove all traces of the roaches, including the eggs.
- After vacuuming, take the vacuum cleaner outside, remove the vacuum bag, seal it in a plastic garbage bag, and discard in trash. Wipe down the entire vacuum cleaner with a damp cloth.
- Thoroughly clean and then disinfect the surface with an EPA-registered disinfectant. Indoor disinfectants that use citric acid, lactic acid or accelerated hydrogen peroxide have been listed as safer by the EPA.

Resource

- Common asthma triggers (http://www.cdc.gov/asthma/triggers.html)

Resources

Center for Environmental Research and Children's Health (CERCH) child care programs

- http://cerch.org/research-programs/child-care/

UC Statewide IPM Program

- www.ipm.ucanr.edu/

California Department of Pesticide Regulation IPM in Schools and Child Care

- School IPM (www.cdpr.ca.gov/schoolipm/)
- IPM in child care (http://apps.cdpr.ca.gov/schoolipm/childcare/)

Information from the Centers for Disease Control and Prevention (CDC)

- Cleaning up after rodents (http://www.cdc.gov/rodents/cleaning/)
- Facts about hantaviruses (http://www.cdc.gov/hantavirus/pdf/HPS_Brochure.pdf)
- Raccoon Latrines: Identification and Clean-up (http://www.cdc.gov/parasites/baylisascaris/resources/raccoonlatrines.pdf)
- Common asthma triggers (http://www.cdc.gov/asthma/triggers.html)

Appendix 3: In-person Course Handouts

APPENDIX I

Sample IPM Contracts & Other Guidance When Hiring a Pest Control Company

Sample IPM Contract Language for Landscape Contracts and Structural Contracts

The following sections include sample language and components of a contract specific to an IPM service contract. This model provides program descriptions and statements of work. This is not intended to be a ready-to-go contract since certain sections that may be required for use in individual districts is not included, such as General Terms and Conditions, Disputes, etc. Contact the school district contracts manager for assistance.

Landscape IPM: Contract Components and Sample Language

adapted from the State of Maryland's School IPM Contract Manual

Background

The basis of the [Name School] school district IPM services is the use of IPM strategies that emphasize pest prevention and the safe and effective management of pest problems. This involves the regular monitoring for the presence of pests in the landscape, in turf and surrounding grounds of school buildings and, when necessary, implementation appropriate control measures. The goal of the IPM program is to provide effective, long-term pest control, while minimizing the use of pesticides. The Contractor must exhibit awareness and sensitivity to the fact that the school environment cannot be compromised through deliberate or inadvertent contamination by pesticides.

Scheduled, routine pesticide treatments in any area of the school are prohibited. Pesticides should be applied only when nonchemical methods have proven ineffective or are impractical, and only in areas of known infestation. It is essential to the success of the IPM program that the Contractor provides proactive services that identify landscape design deficiencies, plant maintenance practices, and plant choices that contribute to pest problems.

All IPM services and activities shall be planned and performed with the needs of the school children and staff as the foremost priority, working with school site staff to coordinate pest management activities to avoid disruption of school activities.

Description of Service

The Contractor shall furnish all labor and materials for the development and implementation of a comprehensive IPM program in designated schools and facilities. The Contractor shall demonstrate an understanding of the concept of IPM. The implementation of management practices in an IPM program is not based on the routine application of pesticides, but on monitoring and inspecting for pests, modifying landscapes and plant selection, and changing landscape and plant maintenance practices that can contribute to pest problems. Pest control is achieved in an IPM program by emphasizing pest prevention and making informed and accurate decisions as to when control measures are needed and the type of control measures to be used.

At a minimum, the IPM program shall consist of the development and implementation of routine pest management services; routine and special meetings among pest management personnel and school staff; routine and specially scheduled training; and written reports describing program status and recommendations for the corrective actions that need to be implemented by the school, the Contractor, or the school board.

IPM Coordinator and Liaison

To provide the degree of oversight and consistency of services necessary for a successful IPM program, the school districts shall designate an IPM Coordinator for the school district and an IPM liaison for each individual school. The IPM Coordinator is responsible for the notification, posting and recordkeeping requirements of the Healthy Schools Act {See section 1.4 of the guidebook for the requirements of the Healthy Schools Act}. These people should have the interest and capability to address all pest management issues, regardless of the pest involved or the area affected. The IPM Coordinator should participate in all decisions that may directly or indirectly affect pest management. A list of personnel designated as school liaisons should be provided to the Contractor by the school district. The Contractor's pest management technician should meet with the school liaison, upon initiation of the contract, and prior to performing pest management services. The Contractor and school liaison will:

1. Identify and discuss specific problem areas in the landscape and turf areas;
2. Facilitate access to all management areas on school property;
3. Identify and discuss landscape features or maintenance practices that might contribute to pest infestations;
4. Discuss effectiveness of previous control efforts; and
5. Notify pest management personnel of any new restrictions or special safety precautions.

Routine Services

Routine IPM Services shall include the control of all landscape and turf pests such as, but not limited to, defoliating insects, sucking insects and mites, wood-boring insects, leaf mining insects, gall-forming insects and mites, root-feeding insects, diseases of ornamental landscape plants and turf grass, weeds, and vertebrate pests including gophers, ground squirrels, voles, moles, birds, deer and other vertebrate pests. Preventive recommendations for control of these pests are included as Routine IPM Services.

Additional Services

The school district reserves the right to negotiate with the Contractor for the purchase of related pest control services not specifically covered, such as pruning, tree removal, and other plant maintenance practices, and to add or delete grounds or fields to or from the Contract.

Special Service Request and Emergency Services

Routine IPM services shall consist of performing all components of an IPM program, as described in the Contractor's Pest Management Plan and Service Schedule (see Pest Management Plan and Service Schedule below) for each school management area during the period of this contract.

Requests for corrective action, special services, or emergency service shall be placed with the IPM Coordinator. The Contractor shall respond to a request for emergency services on the day of the request. In addition, the Contractor shall respond to special service requests within one (1) working day after receipt of request. If the special service or emergency service request entails the application of pesticides, applications will take place in the minimum time allowable by law. All emergency and special services should be recorded in the school IPM logbook. In the event that such services cannot be completed within the required time frames, the Contractor shall immediately notify the IPM Coordinator and indicate an anticipated completion date. The Contractor shall describe, in the proposal, his/her capability to meet this requirement (e.g., radio-dispatched service, names of office personnel handling the account, availability of technical and on-site personnel assigned to this program).

Pest Management Plan and Service Schedule

The Contractor shall survey all management areas covered under this contract and develop a written Pest Management Plan. This plan shall provide detailed information on areas of pest infestation; landscape design, plant selection deficiencies, and plant maintenance practices that contribute to pest infestation; and recommendations for correcting those conditions.

This plan should include a detailed description of the monitoring program that will be used to identify pest infestations in landscape and turf areas. It may include the use of traps, visual inspections, degree-day accumulations and other environmental indicators, and staff interviews. Other appropriate IPM activities, including decision making, intervention tactics and strategies, and evaluation methodologies should be included. A school system-approved pesticide list with labels and Material Safety Data Sheets (MSDS), if available, should be included in the management plan. The Contractor also shall submit a written Service Schedule to the IPM Coordinator and other school personnel for approval. This schedule will be structured so that the entire school grounds, landscapes, and turf areas are surveyed routinely.

The frequency of service visits for each management unit should be specified. This document should be included with the IPM service records of each school and revised as necessary.

The Pest Management Plan and Service Schedule must be approved by the school district before implementation of the program. This specifically includes approval for any proposed pesticide usage. Any subsequent changes to the Plan and Schedule and/or additions to the approved pesticide list must be requested in writing and receive the concurrence of the school district.

Structural and Procedural Recommendations

Landscape maintenance practices that may contribute to structural pest infestations shall be reported, in writing, to the building liaison and the IPM Coordinator by the Contractor at the completion of each inspection.

Recordkeeping

The Contractor shall provide and maintain a complete and accurate pest management logbook. The logbook shall permit efficient evaluation and management of the program, accurate information retrieval, and adhere to recordkeeping required by California law. The logbook shall be kept in a designated location at the facility and a copy sent to the IPM Coordinator following each service visit. Clear and concise records shall reflect the common names of pests monitored at the school as well as turf and landscaping maintenance deficiencies, problem plants, nonpesticidal and pesticidal control measures applied, immediate and long-term recommendations regarding pest management, communications with students and staff, MSDS, and labels for all products that may be used at the facility. A section of the logbook shall be allocated for school personnel to report pest sightings and other information that shall be reviewed by that Contractor during regular service visits. The Contractor shall provide, in the proposal, an example of the logbook format with a detailed explanation of how it will be used, the structure of the book, and information that has to be recorded in the logbook.

Contractor Licensing

Each Contractor submitting a proposal for consideration by the school district shall have and maintain, during the life of the contract, a California Pesticide Business License issued by DPR or the Structural Pest Control Board.

A copy of the current valid license shall be submitted with the Contractor's proposal and no consideration will be given to proposals that lack evidence of licensing. Failure to maintain the Pesticide Business License with all necessary pest control categories shall be sufficient grounds for immediate termination of the contract. It shall be the Contractor's responsibility to immediately notify the IPM Coordinator of any change in status.

Personnel

The Contractor shall provide, under this contract, only qualified pest management personnel with adequate and verifiable experience in the conduct of IPM programs. All on-site personnel must understand current pest management practices and be able to make decisions and field diagnoses regarding the use of IPM practices and techniques. The proposal shall present a plan or method for assuring continuity of pest management personnel assigned to this contract, and knowledge and sensitivity to the needs of the schools. The Contractor should understand that quality assurance and daily pest management services are two activities that are separate and distinct from one another, and require sufficient time and manpower.

The Contractor shall designate a Program Technical Supervisor (PTS), who shall have primary responsibility for the conduct of this pest management contract, ensure that all required reports are submitted to the IPM Coordinator on time, and be available for routine and emergency consultation. The following minimum requirements regarding this individual's experience and training shall be provided in the proposal:

1. Resume, including current home address.

2. Current certification or licensure in California as a Pest Control Applicator. Certification as a Pest Control Advisor also is acceptable.

The PTS shall provide on-site supervision to assure safety, carry out coordination and continuity of program services, and fulfill special requests from the IPM Coordinator. The responsibilities of the on-site supervisor will be carried out by the PTS, not the pest management technician. A pest management technician shall provide on-site pest management services.

Manner and Time to Conduct Services

Routine services should be performed during the late afternoon hours, Monday through Friday, excluding holidays, except when school is not in session or as specifically approved by the IPM Coordinator. Pesticides shall not be applied while foods are being prepared, served, or put away, or when the school building is open for business.

The Contractor shall observe all safety precautions throughout the performance of this contract. Certain areas within some facilities may require special instructions for persons entering the area. Any restrictions associated with special areas will be explained to the Contractor and the IPM Coordinator by the school building liaison. These restrictions shall be adhered to and incorporated into the Contractor's Pest Management Plan and Service Schedule for the school building.

All contracted personnel shall wear an identification card in a clearly visible manner during the performance of their duties. Vehicles used by the Contractor or the contractor's personnel shall be identified. The Contractor must park in designated areas in close proximity to each school building. At a minimum, the Contractor shall provide his/her personnel with clean uniforms to be worn while performing their duties. Additional personal protective equipment required for the safe performance of work shall be determined and provided by the Contractor in compliance with California law.

Nonchemical Alternatives

Nonchemical pest management alternatives include biological, physical, cultural and mechanical methods. Nonchemical management of weeds may include the repair of cracks and crevices in sidewalks, playgrounds, and parking lots to reduce germinating seeds. Weeds in planted beds may be managed through the use of mulching or mechanical removal such as hoeing or hand picking. In some cases, biological control agents may be released to help control weeds. Nonchemical control of weeds in lawns and playing fields may include alterations of turfgrass variety, or changes

in mowing heights or in fertilization and irrigation regimes. Nonchemical management of insect and disease pests of landscape plants may include the removal of pest-prone plants and replacement with pest resistant varieties, the addition of plants to the landscape that encourage the activities of beneficial insects or discourage the activities of pests, the physical removal of pests by pruning or hand picking, the use of barriers to prevent colonization of plants, the use of various traps to capture pests or disrupt activities such as mating, the release of biological control agents, and the alteration of practices such as fertilization, irrigation, mulching, and pruning to discourage pest activity.

Pesticide Alternatives

Pesticide applications shall be made only to areas of known pest infestation or activity, and where nonchemical control measures, such as plant selection, habitat modification, physical, mechanical, and biological control were not successful or are not feasible.

Application of pesticides shall not occur until a full inspection has been completed. If chemicals are needed, least-hazardous pesticides and formulations, such as boric acid, silica gels, and diatomaceous earth should be considered whenever possible.

Pesticide applications that may impact the operations or occupants of a school building shall be permitted only during hours when the school building is closed and after all notification procedures have been met. See Part One in this guidebook for a summary of regulations pertaining to notification. A contingency plan for performing pesticide applications on school grounds should be part of the Pest Management Plan and Service Schedule. This should include a list of pests, pesticide products, formulations, application methods, timing of application, and other relevant information that may be needed in specific situations and landscape areas.

Thresholds for pests of landscape plants are generally lacking. However, several studies indicate that insect and mite pests cause noticeable aesthetic injury to plants when approximately 10 percent of the plant is affected. Treatments should be considered when 10 percent of a plant's foliage is removed or discolored, or if the pest has the potential to kill the plant, as is the case with some boring and scale insects. Controls should be initiated against weeds in sidewalks, play areas, parking areas, and driveways when they pose a threat to safe pedestrian traffic or create serious structural damage to these surfaces. Insect, disease, and weed pests of turfgrass in playing fields should be controlled when the associated loss of turfgrass poses a threat of injury to children engaged in sports activities. Insect, disease, and weed pests of school lawns should be controlled only when the damage caused by these pests is intolerable.

The Contractor shall minimize the use of and potential exposure to pesticides wherever possible.

For example:

1. Use nonchemical control methods and materials.

2. Use spot treatments of pesticides. Treat only heavily infested plants.

3. Integrate control methods (i.e., plant selection, timing of watering, mechanical weed control, etc.).

4. Use reduced-risk pesticide application techniques, such as soil injections, rather than foliar applications, when possible.

5. Routine preventive pesticidal spray treatments are prohibited. Cover or barrier treatment of grounds with a pesticide must be specifically requested by the Contractor and approved by the IPM Coordinator, prior to performing the treatment. Preventive pesticide treatments are acceptable only on a case-by-case basis. The Contractor must provide detailed plans; list the rationale for the treatment, and the methods of application if preventive treatment is warranted for a specific school building or landscape area. Preventive treatments are subject to review by the IPM Coordinator and can be eliminated at any time.

Reporting

The Contractor's Program Technical Supervisor shall, at a minimum, provide annual written reports to the school district and attend regular meetings with the IPM Coordinator, school administration, school liaisons, and other concerned individuals. These reports and meetings will address all pest management activities provided by the Contractor for each facility's grounds and evaluation of the IPM program's progress. These reports should identify landscape conditions or personnel practices that require correction by the school district in order to promote the program' s overall effectiveness. In addition, the Contractor shall provide monthly service reports to the IPM Coordinator within 15 days following the end of each month. The service reports shall include, but not be limited to, the following:

1. Landscape and turf areas serviced.

2. Man-hours for each facility's grounds for Routine Services.

3. Location, man-hours, and work description of Special, Emergency, and Additional Services.

4. Results of monitoring and inspections, including accepted common names of pests, numbers of each pest, and the location on each facility's grounds.

5. Written evaluation of turf conditions, landscape problems, specific plant infestation, and immediate and long-term program goals for either resolving pest problems or improving the IPM program for each facility's grounds.

6. Identification and listing of pesticides used by common/generic name (no codes), concentration and quantity of finished spray used, and other pest management techniques used for each school building and management area.

Evaluation

Monthly service reports during the growing season and annual reports will be used by the IPM Coordinator and the Contractor to develop a tangible means for evaluating the overall IPM effort

on the facility's grounds. The Contractor's Program Technical Supervisor shall meet as needed with the IPM Coordinator to discuss the status of the pest management program and review program activities and reports, or resolve ongoing or special problems. If the school district hires an outside evaluator, the contractor may be required to meet with this person or provide information.

Training

The Contractor shall include, in the bid proposal, a detailed description of the in-service training programs provided to their personnel, including pertinent documentation and records. In addition, the Contractor should be able to provide training or develop a plan to use outside expertise to provide training on all aspects of IPM program design and implementation to a wide array of school-associated personnel, including school administrators, maintenance and housekeeping staff, the IPM Coordinator and school liaisons, and community members.

Notification

The Contractor shall provide the IPM Coordinator and school liaisons with a list of pesticides that may be used on school grounds before the school year begins. Product labels and Material Safety Data Sheets for all pesticides shall be provided to the IPM Coordinator and made available in the school IPM program logbook for review by school liaisons, parents, and other interested parties.

The Contractor shall notify the IPM Coordinator and school building liaisons in advance of all pesticide applications to ensure that all provisions of the State and school district's advance notification policies are met. Although each school district is ultimately responsible for student notification of pesticide use and for sending notification home with students, the Contractor will be responsible for satisfying all legal requirements for posting. The Contractor will notify the IPM Coordinator upon completion of pesticide applications made to school grounds.

Inspections

Throughout the duration of this contract, school facilities (or grounds) will be inspected periodically by school district personnel to determine the effectiveness of the IPM program and Contractor compliance with the contract. Inspection results will be documented in writing and submitted to the Contractor. The Contractor shall initiate actions promptly to correct all deficiencies found.

It shall be the Contractor's responsibility to furnish an adequate supply of materials necessary for school personnel to inspect the interior of all rodent bait stations. These materials may include Allen wrenches to loosen and retighten fasteners, keys to open locks, or replacement self-locking plastic ties. Implements to cut plastic ties are not included under this provision.

Purchase of Ancillary Services/Equipment

The Contractor may need to purchase additional equipment or provide additional services to ensure that the IPM program is fully implemented. The school district has the right to negotiate the purchase of ancillary equipment and services with the Contractor and adjust the contract accordingly.

Structural IPM: Contract Components and Sample Language

adapted from the State of Maryland's School IPM Contract Manual

Background

The basis of the [Name School] school district IPM services is the use of IPM strategies that emphasize pest prevention and the safe and effective management of pest problems. This involves the regular monitoring for the presence of pests inside and around the structures of school buildings and, when necessary, implementation of appropriate control measures. The goal of the IPM program is to provide effective, long-term pest control, while minimizing the use of pesticides. The Contractor must exhibit awareness and sensitivity to the fact that the school environment cannot be compromised through deliberate or inadvertent contamination by pesticides. Scheduled, routine pesticide treatments in and around any area of the school are prohibited. Pesticides should be applied only when nonchemical methods have proven ineffective or are impractical, and only in areas of known infestation.

It is essential to the success of the IPM program that the Contractor provides proactive services that identify housekeeping and structural design deficiencies that contribute to pest problems. All IPM services and activities shall be planned and performed with the needs of the schoolchildren and staff as the foremost priority, working with school site staff to coordinate pest management activities to avoid disruption of school activities.

Description of Service

The Contractor shall furnish all labor and materials for the development and implementation of a comprehensive IPM program in designated schools and facilities. The Contractor shall demonstrate an understanding of the concept of the IPM method of pest control. The implementation of management practices in an IPM program is not based on the routine application of pesticides, but on monitoring and inspecting for pests, modifying structures, improving sanitation, and changing personnel practices that can contribute to pest problems. Pest control is achieved in an IPM program by emphasizing pest prevention and making informed, accurate decisions as to when control measures are needed and the type of control measures to be used.

The Contractor also shall provide evidence, in the proposal, of an understanding of the principles and practices governing sanitation in food service areas, in addition to other areas of the school, and the impact of pests and pest management methods on the ongoing activities of a food service facility. At a minimum, the IPM program shall consist of the development and implementation of regularly scheduled pest management services; routine and special meetings among pest management personnel and school staff; routine and specially scheduled training; and written reports describing program status and recommendations for the corrective actions that need to be implemented by the school, the Contractor, or the school board.

IPM Coordinator and School Liaison

To provide the degree of oversight and consistency of services necessary for a successful IPM program, the school districts shall designate an IPM Contact Person (IPM Coordinator) for the

school district and an IPM liaison for each individual school. The IPM Coordinator is responsible for the notification, posting and recordkeeping requirements of the Healthy Schools Act {See section 1.4 of the guidebook for the requirements of the Healthy Schools Act}. These people should have the interest and capability to address all pest management issues, regardless of the pest involved or the area affected. The IPM Coordinator should participate in all decisions that may directly or indirectly affect pest management. A list of personnel designated as school liaisons should be provided to the Contractor by the school district. The Contractor's pest management technician should meet with the school liaison, upon initiation of the contract, and prior to performing pest management services. The Contractor and school liaison will:

1. Identify and discuss specific problem areas in the facility;
2. Facilitate access to all management areas on school property;
3. Identify and discuss building features or personnel practices that might contribute to pest infestations;
4. Discuss effectiveness of previous control efforts; and
5. Notify pest management personnel of any new restrictions or special safety precautions.

Routine Services

Routine IPM Services shall include the control of all pests in and around school buildings such as, but not limited to, cockroaches, ants, fleas, stinging insects and nests accessible from the ground or from windows, rats and mice, flies, fruit flies, silverfish, stored products pests; and incidental invaders, such as crickets, earwigs, midges, millipedes, centipedes, ground beetles, clover mites, birds, bats, and squirrels.

Preventive recommendations for control of these and other pests, including wood-destroying insects like termites, carpenter ants, and wood-boring beetles also are included as Routine IPM Services. Treatment for the wood-destroying insects mentioned above is considered an Additional Service (see the section on Additional, Special, and Emergency Services below).

Additional Services

The school district reserves the right to negotiate with the Contractor for the purchase of related pest control services not specifically covered, such as subterranean and structural control of termites and other wood-boring insects, bird control, and to add or delete buildings or parts of buildings to or from the contract.

Special Service Request and Emergency Services

Routine IPM services shall consist of performing all components of an IPM program, as described in the Contractor's Pest Management Plan and Service Schedule (see the section on Pest Management Plan and Service Schedule below) for each school management area during the period of this

contract. Requests for corrective action, special services, or emergency service shall be placed with the IPM Coordinator. The Contractor shall respond to a request for emergency services on the day of the request. In addition, the Contractor shall respond to special service requests within one (1) working day after receipt of request. If the special service or emergency service request entails the application of pesticides, applications will take place in the minimum time allowable by law. All emergency and special services should be recorded in the school IPM logbook. In the event that such services cannot be completed within the required time frames, the Contractor shall immediately notify the IPM Coordinator and indicate an anticipated completion date. The Contractor shall describe, in the proposal, his/her capability to meet this requirement (e.g., radio-dispatched service, names of office personnel handling the account, availability of technical and on-site personnel assigned to this program).

Pest Management Plan and Service Schedule

The Contractor shall survey all management areas covered under this contract and develop a written Pest Management Plan. This plan shall provide detailed information on areas of pest infestation; structural, housekeeping, maintenance, and design deficiencies that contribute to pest infestation; and recommendations for correcting those conditions. This plan should include a detailed description of the monitoring program that will be used to identify infested areas. It may include the use of traps, visual inspections, and staff interviews. Other appropriate IPM activities, including decision making, intervention tactics and strategies, and evaluation methodologies should be included.

A school system-approved pesticide list with labels and Material Safety Data Sheets should be included in the management plan. The Contractor also shall submit a written Service Schedule to the IPM Coordinator and other school personnel for approval. This schedule will be structured so that the entire school building, trash room, exterior, and support areas of the building are monitored routinely. The frequency of service visits for each management unit should be specified. This document should be included with the IPM service records of each school and revised as necessary.

The Pest Management Plan and Service Schedule must be approved by the school district before implementation of the program. This specifically includes approval for any proposed pesticide usage. Any subsequent changes to the Plan and Schedule and/or additions to the approved pesticide list must be requested in writing and receive the concurrence of the school district.

Structural and Procedural Recommendations

Structural deficiencies and poor housekeeping practices that may contribute to structural pest infestations shall be reported, in writing, to the building liaison and the IPM Coordinator by the Contractor at the completion of each inspection.

Recordkeeping

The Contractor shall provide and maintain a complete and accurate pest management logbook. The logbook shall permit efficient evaluation and management of the program, accurate informa-

tion retrieval, and adhere to recordkeeping required by law. Each facility shall have its own logbook that will be updated during each service by the pest management technician. The logbook shall be kept in a designated location at the facility and a copy sent to the IPM Coordinator following each service visit. Clear and concise records shall reflect the common names of pests monitored at the school, as well as structural, maintenance, and housekeeping deficiencies, nonpesticidal and pesticidal control measures applied, immediate and long-term recommendations regarding pest management, communications with students and staff, Material Safety Data Sheets (MSDS), and labels for all products that may be applied at the facility. A section of the logbook shall be allocated for facility personnel to report pest sightings and other information that shall be reviewed by the Contractor during regular service visits. The Contractor shall provide, in the proposal, an example of the logbook format with a detailed explanation of how it will be used, the structure of the book, and information that has to be recorded in the logbook.

Contractor Licensing

Each Contractor submitting a proposal for consideration by the school district shall have and maintain, during the life of the contract, a California Pesticide Business License. A copy of the current valid license shall be submitted with the Contractor's proposal and no consideration will be given to proposals that lack evidence of licensing. Failure to maintain the *Pesticide Business License* shall be sufficient grounds for immediate termination of the contract. It shall be the Contractor's responsibility to immediately notify the IPM Coordinator of any change in status.

Personnel

The Contractor shall provide, under this contract, only qualified pest management personnel with adequate and verifiable experience with implementing IPM programs. All on-site personnel must understand current pest management practices and be able to make decisions and field diagnoses regarding the use of IPM practices and techniques. The proposal shall present a plan or method for assuring continuity of pest management personnel assigned to this contract, and knowledge and sensitivity to the needs of the schools. The Contractor should understand that quality assurance and daily pest management services are two activities that are separate and distinct from one another, and require sufficient time and manpower.

The Contractor shall designate a Program Technical Supervisor (PTS), who shall have primary responsibility for the conduct of this pest management contract, ensure that all required reports are submitted to the IPM Coordinator on time, and be available for routine and emergency consultation. The following minimum requirements regarding this individual's experience and training shall be provided in the proposal:

1. Resume, including current home address.

2. Current certification or license in California as a Pest Control Applicator or as an Agriculture Pest Control Advisor.

The PTS shall provide on-site supervision to assure safety, carry out coordination and continuity of program services, and fulfill special requests from the IPM Coordinator. The responsibilities of the on-site supervisor will be carried out by the PTS, not the pest management technician. A pest management technician shall provide on-site pest management services

Manner and Time to Conduct Services

Routine services should be performed during the late afternoon hours, Monday through Friday, excluding holidays, except when school is not in session or as specifically approved by the IPM Coordinator. Pesticides shall not be applied while foods are being prepared, served, or put away, or when the school building is open for business. The Contractor shall observe all safety precautions throughout the performance of this contract. Certain areas within some facilities may require special instructions for persons entering the area. Any restrictions associated with special areas will be explained to the Contractor and the IPM Coordinator by the school building liaison. These restrictions shall be adhered to and incorporated into the Contractor's Pest Management Plan and Service Schedule for the school building. All contracted personnel shall wear an identification card in a clearly visible manner during the performance of their duties. Vehicles used by the Contractor or the contractor's personnel shall be identified in accordance with state regulations. The Contractor must park in designated areas in close proximity to each school building. At a minimum, the Contractor shall provide his/her personnel with clean uniforms to be worn while performing their duties. Additional personal protective equipment required for the safe performance of work shall be determined and provided by the Contractor in accordance with California law.

Nonchemical Alternatives

Caulking and sealing pest harborages and pathways is the preferred method for preventing or controlling an infestation and shall be part of the routine IPM services. The Contractor shall make limited applications of approved sealants and other exclusion materials under sinks, as well as around cabinets, pipe chases, windows and doors, exterior areas, etc., in lieu of or to augment other pest management methods. The Contractor shall make recommendations to the IPM Coordinator for any large-scale application (i.e., whole room, exterior of building, etc.) of sealants and other exclusion materials. In addition, the use of vacuum cleaners, mechanical traps, insect light trapping devices, and glue boards used for rodent management should be fully integrated into the day-to-day operations of the program. The Contractor must be proactive at identifying and, in some cases, correcting known or suspected problem areas that provide food, water, harborage, and access for pests in and around the school building. Snap traps, trapping devices, and glue boards used for rodent management or monitoring activities must be intensively maintained. The Contractor shall discard rodents killed or trapped within 24 hours. Trapping should not be performed during periods when maintenance will be delayed by holidays, weekends, etc. Traps shall be placed out of general view and away from any access by children or staff for safety and aesthetic purposes, and located where they will not be affected by routine cleaning procedures. The Contractor shall describe in the proposal their organization's approach to meeting these requirements.

Pesticide Alternatives

Pesticide applications shall be made only to areas of known pest infestation or activity, and where nonchemical control measures, such as traps, caulking, sealing, cleaning, habitat modification, physical, mechanical, and biological control were not successful or are not feasible. Application of pesticides shall not occur until a full inspection has been completed. If chemicals are needed, least-hazardous pesticides and formulations, such as boric acid, silica gels, and diatomaceous earth should be considered whenever possible.

Pesticide applications that may impact the operations or occupants of a school building shall be permitted only during hours when the school building is closed and after all notification procedures have been met. A contingency plan for performing pesticide application in the school building should be part of the Pest Management Plan and Service Schedule. This should include a list of pests, pesticide products, formulations, application methods, timing of application, and other relevant information that may be needed in specific situations and school buildings. The following shall be used as thresholds for the initiation of control actions in the school building:

1. An average of two cockroaches per trap within an area during each service interval.
2. One mouse or rat dropping per room.
3. One rat burrow or runway in outside areas of the school building.
4. Any stinging insect nest within reach from the ground.
5. Recurring problems with other pests, e.g., flies, spiders, or stored product pests, which cannot be resolved using nonchemical techniques.

The Contractor shall minimize the use of and potential exposure to pesticides wherever possible.

For example:

1. Use nonchemical control methods and materials.
2. Use crack and crevice or bait application of pesticides in pest harborage areas.
3. Integrate control methods (i.e., structural repairs, trapping, sanitation, etc.).
4. Pesticide space sprays (including fogs and ultra-low volume applications) will be restricted to unique situations for which no alternative measures are practical or effective. Because notification must be sent home 72 hours prior to spraying, the Contractor must confer with the IPM Coordinator to develop a specific plan.
5. Routine preventive spray treatments are prohibited. The broadcast or barrier treatment of an interior or exterior area with a pesticide must be specifically requested by the Contractor and approved by the IPM Coordinator, prior to performing the treatment. Preventive treatments are acceptable only on a case-by-case basis. The Contractor must provide detailed plans; list the

rationale for the treatment, and the methods of application if preventive treatment is warranted for a specific school building or landscape area. Preventive treatments are subject to review by the IPM Coordinator and can be eliminated at any time.

Reporting

The Contractor's Program Technical Supervisor shall, at a minimum, provide annual written reports to the school district and attend regular meetings with the IPM Coordinator, school administration, school liaisons, and other concerned individuals. These reports and meetings will address all pest management activities provided by the Contractor for each school building and evaluation of the IPM program's progress. These reports should identify school building conditions or personnel practices that require correction by the school district in order to promote the program's overall effectiveness. In addition, the Contractor shall provide monthly service reports to the IPM Coordinator within 15 days following the end of each month. The service reports shall include, but not be limited to, the following:

1. Facilities serviced.
2. Man-hours for each school building for Routine Services.
3. Location, man-hours, and work description of Special, Emergency, and Additional Services.
4. Results of monitoring and inspections, including accepted common names of pests, numbers of each pest, and the location in the school building.
5. Written evaluation of sanitation conditions, structural deficiencies, repairs needed, repairs completed, and immediate and long-term program goals for either resolving pest problems or improving the IPM program within each school building and management area.
6. Identification and listing of pesticides used by common/generic name (no codes), concentration and quantity of finished spray used, and other pest management techniques used for each school building and management area.

Evaluation

Monthly service reports and annual reports will be used by the IPM Coordinator and the Contractor to develop tangible means for evaluating the overall IPM effort in school facilities. The Contractor's Program Technical Supervisor shall meet as needed with the IPM Coordinator to discuss the status of the pest management program and review program activities and reports, or resolve ongoing or special problems. If the school district hires an outside evaluator, the contractor may be required to meet with this person or provide information.

Training

The Contractor shall include, in the proposal, a detailed description of the in-service training programs provided to their personnel, including pertinent documentation and records. In addi-

tion, the Contractor should be able to provide training or develop a plan to use outside expertise to provide training on all aspects of IPM program design and implementation to a wide array of school-associated personnel, including school administrators, maintenance and housekeeping staff, the IPM Coordinator and school liaisons, and community members.

Notification

The Contractor shall provide the IPM Coordinator and school liaisons with a list of pesticides that may be used in school before the school year begins. Product labels and Material Safety Data Sheets for all pesticides shall be provided to the IPM Coordinator and made available in the school IPM program logbook for review by school liaisons, parents, and other interested parties. The Contractor shall notify the IPM Coordinator and school building liaisons in advance of all pesticide applications to ensure that all provisions of the State and school district's advance notification policies are met. Although each school district is ultimately responsible for student notification of pesticide use and for sending notification home with students, the Contractor will be responsible for satisfying all legal requirements for posting. The Contractor will notify the IPM Coordinator upon completion of pesticide applications made in and around school buildings.

Inspections

Throughout the duration of this contract, school district personnel will periodically inspect school facilities to determine the effectiveness of the IPM program and Contractor compliance with the contract. Inspection results will be documented in writing and submitted to the Contractor. The Contractor shall initiate actions promptly to correct all deficiencies found. It shall be the Contractor's responsibility to furnish an adequate supply of materials necessary for school personnel to inspect the interior of all rodent bait stations. These materials may include Allen wrenches to loosen and retighten fasteners, keys to open locks, or replacement self-locking plastic ties. Implements to cut plastic ties are not included under this provision.

Purchase of Ancillary Services/Equipment

The Contractor may need to purchase additional equipment or provide additional services to ensure that the IPM program is fully implemented. The school district has the right to negotiate the purchase of ancillary equipment and services with the Contractor and adjust the contract accordingly.

Additional information on developing School IPM contracts is available at the following Web sites:

University of Florida's School IPM Model Contract:
http://schoolipm.ifas.ufl.edu/doc/model_contract.htm

Safer Pest Control Project's Guidelines for IPM in School & Childcare Pest Management Contracts: http://www.spcpweb.org/factsheets/schcnt.pdf

Texas A&M's School Integrated Pest Management Service Agreement:
http://schoolipm.tamu.edu/resources/TechInfo/IPM_Contract_generic_template.pdf

U.S. General Services Administration's Integrated Pest Management Program Contract Guide Specification:
http://www.gsa.gov/gsa/cm_attachments/GSA_DOCUMENT/IPM_Contract_Guide_Specifications_R2-uWAZ_0Z5RDZ-i34K-pR.pdf

City and County of San Francisco's Request for Proposal—Integrated Pest Management Service for City Owned Buildings and Properties:
http://www.sfenvironment.org/downloads/library/sf_ipm_contract_model_language2.doc

UC Davis Pest Notes "Hiring a Pest Control Company":
http://www.ipm.ucdavis.edu/PDF/PESTNOTES/pnhirepestcontrol.pdf

IPM Institute's Model IPM Contract:
http://www.ipminstitute.org/Articles/Model%20IPM%20Contract%20071807.doc

Virginia School IPM--Develop an IPM Pest Control Contract or Plan of Work:
http://sites.ext.vt.edu/schoolipm/howtoapplyipm/contract.shtml

EcoWise IPM Contracting Toolkit: http://ecowisecertified.org/toolkit/

Urban Pesticide Pollution Prevention (UP3) Project's Key Points—Contracting for Structural IPM Services:
http://www.up3project.org/documents/contracting/Keypoints_ContractingforIPMServices_Nov6.pdf

Our Water Our World's Finding a Company That Can Prevent Pest Problems:
http://www.ourwaterourworld.org/Portals/0/documents/pdf/hiring_pestco.pdf

City of Santa Monica's IPM Contract and Policy Information: http://yosemite1.epa.gov/oppt/epp-stand2.nsf/ContLang/3C6F11E81E94E1548525696C0068C305?Open&City%20of%20Santa%20Monica&Hardware%20Store&Pest%20Control&Integrated%20Pest%20Management

State of California, Department of General Services' Building Maintenance - Structural Integrated Pest Management Vendor Hiring Information:
http://www.green.ca.gov/EPP/building/structipm.htm

Sample IPM Policy

For

Child Care Programs

Source:

http://cerch.org/research-programs/child-care/integrated-pest-management-a-toolkit-for-early-care-and-education-programs/

SAMPLE IPM POLICY FOR ECE PROGRAMS*

[NAME OF PROGRAM] [DATE]

Purpose

This policy supports the use of an integrated pest management (IPM) approach in our ECE Program to comply with the 2007 California Law that extends the Healthy Schools Act to child care centers.

Policy

[NAME OF PROGRAM], will implement and practice IPM to manage pests in the buildings and grounds to minimize the exposure of children and staff to pesticides. California state law encourages licensed ECE centers to practice IPM and requires centers to notify all parents and staff before pesticides are applied inside or outside the facility (see *Sample 72-Hour Notice of Specific Application on page 38*). In accordance with the Healthy Schools Act, the center will:

- **notify** parents and staff in writing every year
  - What pesticides are expected to be applied by center staff or a PMP in the upcoming year.
- **provide parents and staff with the website** address of the California Department of Pesticide Regulation's School IPM Program, **apps.cdpr.ca.gov/schoolipm/**
- **maintain a registry** of parents and staff who want to be notified, ahead of time, each time a pesticide is used.
- **notify parents of pesticide applications.** Parents and staff who enroll in the registry will be notified of individual pesticide applications on the program site at least 72 hours before the application, which will include the name of the pesticide, active ingredient(s) in the product, and date the pesticide is to be applied.
- **post warning signs.** Warning signs will be posted around each area where pesticides will be applied. These signs will be in place 24 hours before and stay in place 72 hours after pesticides are used. These signs will be large enough that they prevent any adult from accidentally entering areas where pesticides have been used. (See *Sample Warning Sign* on page 39.)
- **keep records** of which pesticides have been used at the program site for the past four years and the records will be available to anyone who asks to see them.

Pests

Our IPM policy is to actively work at reducing the presence of harmful pests in the facility. Pests can pose hazards to human health and the environment and damage property.

Pesticides

Our IPM policy is to minimize potential exposure of children, staff and visitors to pesticides in our environment. Exposure to pesticides can pose a health risk to children, staff, and others. Regularly scheduled applications of harmful pesticides are not permitted under this IPM policy.

Integrated Pest Management (IPM) Program

Our IPM program will include the following:

- Regular monitoring to identify pest problems.
- Preventive actions to reduce future pest problems.
- Preference for the use of nonchemical management practices to address pest problems.
- When necessary, use of least-hazardous pesticides after nonchemical management practices have failed.
- Training for staff and parents on IPM practices.
- Designating an IPM Coordinator for our site who will be responsible for overseeing the implementation of IPM practices.
- Use of the *CCHP Health and Safety Notes* and UC Davis IPM website (see *Resources*) for action plans on individual pests.
- Assess the ECE center's environment using the IPM Checklist annually.

Pest Management Professionals (PMP)

Any PMP hired to provide pest management or other services must comply with this IPM program and notification policy and be knowledgeable about IPM practices, the requirements of the Healthy Schools Act and use of IPM. PMPs must refrain from routine pesticide spraying, provide detailed service reports with each visit and give recommendations for pest prevention.

*This policy reflects the best practices on IPM as of April 2010.

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Sample Notification Letters

Source:

http://cerch.org/research-programs/child-care/integrated-pest-management-a-toolkit-for-early-care-and-education-programs/

SAMPLE LETTER EXPLAINING ANNUAL WRITTEN NOTIFICATION REQUIREMENT

[DATE]

[ECE CENTER NAME] is required by the Healthy Schools Act to provide information to parents and guardians about nonexempt pesticides we expect to use in the coming year. This notification will include the pesticide name, active ingredient(s), and information on pesticides and their alternatives.

[ECE CENTER NAME] uses an integrated pest management (IPM) approach to managing ants, rodents and other pests. Our goal is to protect the health of our children and staff and the environment by reducing pesticide use. Prevention is critical to this approach, and we work hard to keep pests out of our building, and remove their access to food, water and shelter.

When pests enter our facility, our staff tries to use nonchemical and least-harmful methods to deal with them. Occasionally, we use pesticides to manage these pest problems. Pesticides are only used as a last resort. Certain pesticides, such as self-contained baits or traps, and gels or pastes used in cracks and crevices, are exempt from the requirements of the Healthy Schools Act. They are applied in ways that limit children's exposure and contain non-toxic or least harmful substances.

Parents and guardians may also request to be notified about individual pesticide applications throughout the year. Beginning [DATE], parents and guardians who choose to be included in this registry will be notified at least 3 days before nonexempt pesticides (such as sprays and foggers) are applied. If you would like to be notified every time a nonexempt pesticide is applied, please complete and return the attached form and return it to [NAME OF ECE CENTER IPM COORDINATOR, ADDRESS].

For more information on pesticides and integrated pest management see The Department of Pesticide Regulation's School Integrated Pest Management Website at: **apps.cdpr.ca.gov/schoolipm/childcare** or
The California Childcare Health Program's IPM Toolkit for Early Care and Education Programs at:
www.ucsfchildcarehealth.org/html/pandr/trainingcurrmain.htm

If you have any questions, please contact [NAME OF ECE CENTER IPM COORDINATOR] at [PHONE NUMBER].

Sincerely,

[POSITION AT ECE CENTER]

[NAME OF ECE CENTER]

[CONTACT PHONE NUMBER AND EMAIL]

PARENT/STAFF APPLICATION TO BE ENROLLED IN THE NOTIFICATION REGISTRY

REQUEST BY PARENT TO SUBSCRIBE TO REGISTRY IN ORDER TO RECEIVE NOTIFICATION OF INDIVIDUAL PESTICIDE APPLICATION

[NAME OF ECE CENTER]

I understand that, upon request, the child care center listed above is required to supply information about individual pesticide applications at least 72 hours before application. I would like to be notified before each pesticide application at the site listed above.

I would prefer to be contacted by (circle one): **U.S. Mail** **Email** **Phone**

Please print neatly:

Date:_____

Child's name:_____

Name of Parent/Guardian:_____

Address:_____

Day Phone: ( )_____**Evening Phone: ( )**_____

Email:_____

Return to:_____

[NAME OF ECE CENTER]

[IPM COORDINATOR]

[ADDRESS]

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SAMPLE LETTER: ANNUAL NOTIFICATION OF PLANNED PESTICIDE USE

[DATE]

Dear Parent or Guardian of [INSERT CHILD'S NAME],

The Healthy Schools Act of 2000, as amended in 2007, requires all California child care centers to notify parents and guardians of nonexempt pesticides that they expect will be applied during the upcoming year. We want to notify you that the following pesticides will be used at your child's center this year:

Name of Pesticide Product	Active Ingredient(s)
1	
2	
3	
4	
5	
6	

You can find more information regarding these pesticides and pesticide use reduction at DPR's Child Care IPM—Growing Up Green website at: **www.cdpr.ca.gov/schoolipm/childcare**

If you have any questions, please contact [ECE CENTER IPM COORDINATOR,_____] at [PHONE_____].

Sincerely,

[POSITION AT ECE CENTER]

[NAME OF ECE CENTER]

[CONTACT PHONE NUMBER AND EMAIL]

SAMPLE 72 HOUR NOTICE OF SPECIFIC PESTICIDE APPLICATION

[DATE]

Dear Parent or Guardian of [INSERT CHILD'S NAME],

At your request, we are writing to notify you about a specific pesticide application(s) at your child's child care center, _____. Please see below for detailed information. If you would like to see the Material Safety Data Sheet for this chemical, it is available at [ECE PROGRAM LOCATION]. If you have any questions, please contact [NAME OF ECE PROGRAM, IPM COORDINATOR] at [PHONE].

Sincerely,

[POSITION AT ECE CENTER]

[NAME OF ECE CENTER]

[CONTACT PHONE NUMBER AND EMAIL]

NOTICE OF PESTICIDE APPLICATION

Date Form Completed: _____

Name of Child Care Center: _____

Location of Planned Pesticide Application: _____

Building Name/Number: _____

Playground or Grounds Area: _____

Name of Pesticide Product to Be Applied: _____

Active Ingredient(s): _____

Planned Date/Time of Pesticide Application: _____

For more information regarding these pesticides and pesticide use reduction, visit the Department of Pesticide Regulation's School Integrated Pest Management (IPM) website at: **apps.cdpr.ca.gov/schoolipm.**

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IPM Inspection Checklist For Child Care Providers

Source:

http://cerch.org/research-programs/child-care/integrated-pest-management-a-toolkit-for-early-care-and-education-programs/

INTEGRATED PEST MANAGEMENT CHECKLIST

This *Integrated Pest Management Toolkit* was developed by the University of California (UC), San Francisco School of Nursing's California Childcare Health Program, UC Berkeley's Center for Environmental Research and Children's Health, UC Statewide IPM Program and the California Department of Pesticide Regulation.

INTEGRATED PEST MANAGEMENT CHECKLIST

The *Integrated Pest Management (IPM) Checklist* will help you inspect your early care and education (ECE) building and grounds for the presence of pests and conditions that provide them with food, water and shelter. This *IPM Checklist* will also help you monitor your IPM program annually, semi-annually, or more frequently as needed.

Read the full instructions before you complete the *IPM Checklist*. The tools you need to complete the checklist are listed along with the ways to identify evidence of pest or damage caused by pests. This list does not cover birds, termites and some other potential pests.

Each item in the *IPM Checklist* helps you remember to **keep pests out** and **remove food, water and shelter that may attract pests.** You may not be able to address all of the conditions you find right away. Start with easy-to-implement items and then address bigger challenges as you become more familiar with IPM.

The last section of the *IPM Checklist* has explanations for why some of the items are important to inspect.

Instructions

1. Collect the helpful tools to complete the inspection.
2. Complete the *IPM Checklist*
   - Check the "yes," "no" or "N/A" (not applicable) box ☐ beside each item. "Yes" means your environment is less likely to have pests. "No" responses require further attention.
   - Do not check "yes" unless the ECE facility meets all the parts of the item. For example, item #10 states, *Window screens are free of damage (for example, holes)*; if one window doesn't have a screen, you should check "no" even if all the other windows have screens. Make a note in the comment section where the window is located.
   - The comment section after each item can include follow-up notes, things that need to be improved or changed, and things to be discussed with program staff or action plans.
3. Under each subsection, you will identify any evidence of pests and the damage they cause. Check the box "yes" if you notice evidence of pests (for example, mouse droppings). Leave the box unchecked if there is no evidence of pests.
4. Review the completed *IPM Checklist* with the ECE director and IPM Coordinator.

Helpful tools for an IPM inspection

1. Building map or floor plan to mark areas that may need follow-up management or regular inspection.
2. Standard flashlight and UV flashlight (good for detecting rodent urine stains, which fluoresce under UV light).

UV flashlight

3. Knife or flat spatula to put into narrow cracks and crevices to reveal where pests like to hide and where they seek shelter and food. If a spatula fits in a crack in concrete, baseboards, wallboards or underneath chalkboards, pests can hide there.
4. Hand lens or jeweler's loupe magnifying glass for insect identification.
5. Vial for collecting collecting any pests you might want identified.
6. Telescoping mirrors lengthen from around 6 to 36 inches – perfect for seeing behind or under hard-to-reach places.

Telescoping Mirror

7. Pest information sheets from the IPM Statewide web site at www.ipm.ucdavis.edu.

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Evidence of pests or damage they cause:

- **Ants:** Look for large trails of ants or just a few stragglers. Look for ant trails around windows, electrical or plumbing lines and building edges. Look for holes or cracks in the foundations or walls that provide entry points to buildings. Straggling ants are usually scouts randomly searching for food or nesting sites. When you spot ant trails, try to follow the ants to where they're entering the building and, if possible, to the nest.
- **Cockroaches:** Look for evidence of cockroaches such as droppings (dark spots or smears), cast skins and dead roaches. They especially like warm (70°–75°F), humid areas close to food and waste—kitchens, bathrooms, food preparation and storage areas. Place traps in several locations and inspect them regularly. You'll need to identify the cockroach species you have.
- **Fleas:** If you suspect a flea invasion indoors, pull on some light-colored knee socks and walk around. Any fleas will hop on to the socks. Then get out a vacuum cleaner and vacuum the area 2–3 times daily until the infestation is controlled.
- **Flies:** Look for house flies around windows and signs of rotting food and garbage (where maggots thrive).
- **Mice and rats:** Look for burrows, gnawing on garbage receptacles and droppings. Look at packaged food, doors, windows, baseboards and electrical cords for chewed spots, tooth marks, woodchips or shavings. Check near walls, food supplies and pathways for droppings. Old droppings are hard, or gray and brittle. Fresh droppings are dark and soft, possibly a sign of a current infestation. Check for freshly dug earth near holes around foundations and walls. Check for rub marks along walls—these are dark smears where dirt and oil from rodent fur mark pipes, beams, hallways, edges of stairs or around gnawed holes. Fine, shredded paper or similar materials are common nest-building materials.
- **Mold and mildew:** Look for mold in indoor places that smell musty, and in areas that are often wet or damp, such as bathrooms, laundry or utility rooms and basements. Moldy or damp odors should be noted because they suggest that water may be present and mold growth is likely. Also note staff complaints of odors and health problems. Mold comes in many colors, not just black, and does not need light to grow. It can grow in dark areas and on hidden surfaces, such as the backside of drywall, wallpaper and paneling; the top side of ceiling tiles; and the underside of carpets and pads.
- **Mosquitoes:** Where is there standing water? Water tends to accumulate in clogged gutters, buckets and other toys left outside. Look for mosquitoes resting on walls or hovering near people.
- **Snails and slugs:** Look for *irregular holes* with smooth edges in leaves and flowers. Look for their *silvery trails* to confirm slugs or snails caused the damage and not other garden pests.
- **Spiders:** Look for cobwebs and spiders in dark areas of the building. Spiders are almost always harmless. If you find a black widow spider, you can swat it with a rolled-up piece of paper and then step on it. Brown recluse spiders do not live in California.
- **Weeds:** Look for lawn weeds such as clover, which attracts honey bees. The bees could pose a problem if children use the lawn as a play area.
- **Yellowjackets:** Look for yellowjackets. Nests can be found in rodent burrows, in the ground, in voids in walls and ceilings of buildings.
- **Other:** Look for evidence for other pests—often in the form of droppings—such as raccoons, gophers, pigeons and squirrels.

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IPM CHECKLIST

MONTH / DAY / YEAR PERSON COMPLETING FORM

ECE PROGRAM

Outdoor Areas

Garbage Storage: Garbage Cans and Dumpsters **Comments**

1. Are sealed properly ☐YES ☐NO ☐N/A _____
2. Are located away from doors ☐YES ☐NO ☐N/A _____
3. Are located on hard, cleanable surfaces such as concrete ☐YES ☐NO ☐N/A _____
4. Area around garbage cans and dumpsters is free from spilled liquids or garbage ☐YES ☐NO ☐N/A _____
5. All recyclables are rinsed or cleaned ☐YES ☐NO ☐N/A _____
6. Pests (evidence of the pest, damage or the pest itself) ☐Ants ☐Cockroaches ☐Flies ☐Mice, Rats ☐Yellowjackets ☐Other, specify _____

Building Exterior

7. Walls, roof and foundation are free of holes or cracks ☐YES ☐NO ☐N/A _____
8. Window trim is free of cracks ☐YES ☐NO ☐N/A _____
9. Windows close properly ☐YES ☐NO ☐N/A _____
10. Window screens are free of damage (e.g., holes or gaps) ☐YES ☐NO ☐N/A _____
11. Vents and other large openings are screened with < ¼ inch hardware cloth ☐YES ☐NO ☐N/A _____
12. Exterior doors have sweeps, weather-stripping or similar barriers ☐YES ☐NO ☐N/A _____
13. Roof gutters are clear of leaves and debris ☐YES ☐NO ☐N/A _____
14. Water sources are free of drips or leaks ☐YES ☐NO ☐N/A _____
15. Water drains away from building ☐YES ☐NO ☐N/A _____
16. Foundation comes up at least 12 inches above soil level ☐YES ☐NO ☐N/A _____
17. Pests (evidence of the pest, damage or the pest itself) ☐Ants ☐Cockroaches ☐Mice, Rats ☐Yellowjackets ☐Other, specify _____

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Landscape and Play Area		Comments
18. Plants are at least 12 inches away from building	☐YES ☐NO ☐N/A	
19. Tree and shrub branches are at least 6 feet away from building	☐YES ☐NO ☐N/A	
20. Side of building is free of ivy and other vines	☐YES ☐NO ☐N/A	
21. Wood, debris and thick mulch are at least 6 inches away from building	☐YES ☐NO ☐N/A	
22. Water sources (faucets or sprinklers) do not cause standing water	☐YES ☐NO ☐N/A	
23. Water sources are free of drips or leaks	☐YES ☐NO ☐N/A	
24. Equipment and toys are free of standing water	☐YES ☐NO ☐N/A	
25 Water drains away from building	☐YES ☐NO ☐N/A	
26. Garbage containers outdoors have dome lids	☐YES ☐NO ☐N/A	
27. Garbage containers have plastic linings	☐YES ☐NO ☐N/A	
28. Rodent bait stations, if present, are out of children's reach	☐YES ☐NO ☐N/A	
29. Yellowjacket traps, if present, are away from play and eating areas	☐YES ☐NO ☐N/A	
30. Pests (evidence of the pest, damage or the pest itself)	☐Ants ☐Cockroaches ☐Flies ☐Mice, Rats ☐Mosquitoes ☐Snails, Slugs ☐Spiders ☐Weeds ☐Yellowjackets ☐Other, specify	

Indoor Areas

Kitchen

31. Areas around and underneath dishwasher and refrigerator are clean and dry	☐YES ☐NO ☐N/A	
32. Countertops, shelves, cabinets and drawers are clean and dry	☐YES ☐NO ☐N/A	
33. Food is stored in tightly sealed containers	☐YES ☐NO ☐N/A	
34. Bulk products are stored off the floor and out of contact with walls	☐YES ☐NO ☐N/A	

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Kitchen (continued)

		Comments
35. Stoves are free of food scraps, grease and sugary substances	☐YES ☐NO ☐N/A	_____
36. Floors and molding are free of food scraps, grease and sugary substances	☐YES ☐NO ☐N/A	_____
37. Cardboard boxes and other unnecessary packaging are not present	☐YES ☐NO ☐N/A	_____
38. Faucets and pipes do not drip or leak	☐YES ☐NO ☐N/A	_____
39. Gaps between pipes, vents and walls are sealed or screened	☐YES ☐NO ☐N/A	_____
40. Cracks, crevices around cabinets and molding are sealed or plugged	☐YES ☐NO ☐N/A	_____
41. Garbage containers have plastic linings	☐YES ☐NO ☐N/A	_____
42. Insect bait stations, if present, are out of children's reach	☐YES ☐NO ☐N/A	_____
43. Pest monitoring traps, if present, are out of children's reach	☐YES ☐NO ☐N/A	_____
44. Pests (evidence of the pest, damage or the pest itself)	☐Ants ☐Cockroaches ☐Flies ☐Mice, Rats ☐Mold, mildew ☐Pantry Pests (moths, beetles) ☐Other, specify	_____

Bathrooms

45. Free from mold	☐YES ☐NO ☐N/A	_____
46. Walls, floor and tiles are in good condition without cracks	☐YES ☐NO ☐N/A	_____
47. Faucets and pipes do not drip or leak	☐YES ☐NO ☐N/A	_____
48. Gaps between pipes, vents, and walls are sealed or screened	☐YES ☐NO ☐N/A	_____
49. Cracks and crevices around cabinets and mirrors are sealed or plugged	☐YES ☐NO ☐N/A	_____
50. Pests (evidence of the pest, damage or the pest itself)	☐Ants ☐Cockroaches ☐Flies ☐Mold, mildew	

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Common Space, Play Area, Eating Area		**Comments**
51. Furniture moves easily for vacuuming	☐YES ☐NO ☐N/A	
52. Free of clutter (e.g., cardboard boxes, paper products, playthings, toys, dress-up clothes)	☐YES ☐NO ☐N/A	
53. Walls or baseboards are free of holes	☐YES ☐NO ☐N/A	
54. Area between wall and baseboard is free of space and cracks	☐YES ☐NO ☐N/A	
55. Food items used for arts or crafts are in sealed containers	☐YES ☐NO ☐N/A	
56. Garbage containers have plastic linings	☐YES ☐NO ☐N/A	
57. Garbage containers have lids	☐YES ☐NO ☐N/A	
58. Free of puddles and dripping faucets	☐YES ☐NO ☐N/A	
59. Insect bait stations, if present, are out of children's reach	☐YES ☐NO ☐N/A	
60. Pest monitoring traps, if present, are out of children's reach	☐YES ☐NO ☐N/A	
61. Pests (evidence of the pest, damage or the pest itself)	☐Ants ☐Cockroaches ☐Fleas ☐Flies ☐Mice, Rats ☐Mold, mildew ☐Spiders ☐Other, specify	
Storage Area(s)		
62. Clean, organized and free of clutter	☐YES ☐NO ☐N/A	
63. Buckets are rinsed and mops are hung up to dry	☐YES ☐NO ☐N/A	
64. Dry and free of standing water or moisture	☐YES ☐NO ☐N/A	
65. Cracks and crevices around cabinets are sealed or plugged	☐YES ☐NO ☐N/A	
66. Items are stored in plastic bins that have sealed lids whenever possible	☐YES ☐NO ☐N/A	
67. Pests (evidence of the pest, damage or the pest itself)	☐Ants ☐Cockroaches ☐Flies ☐Mice, Rats ☐Mold, mildew ☐Spiders ☐Other, specify	

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Staff Area		Comments
68. Free of clutter (e.g., cardboard boxes or paper products	☐YES ☐NO ☐N/A	
69. Free of beverage containers, crumbs or debris	☐YES ☐NO ☐N/A	
70. Food is stored in sealed, rigid plastic containers	☐YES ☐NO ☐N/A	
71. Cracks and crevices around cabinets and baseboards are sealed or plugged	☐YES ☐NO ☐N/A	
72. Garbage containers have plastic linings	☐YES ☐NO ☐N/A	
73. Pests (evidence of the pest, damage or the pest itself)	☐Ants ☐Cockroaches ☐Fleas ☐Flies ☐Mice, Rats ☐Spiders ☐Other, specify	

Pesticide Use and IPM Practices*

74. Written pest management policy is in place and includes IPM practices implemented by facility	☐YES ☐NO ☐N/A	
75. Written records of pesticide applications are kept	☐YES ☐NO ☐N/A	
76. IPM coordinator is designated	☐YES ☐NO ☐N/A	
77. Parents are notified 72 hours before pesticides are applied	☐YES ☐NO ☐N/A	
78. Warning signs are posted 24 hours before and stay in place 72 hours after pesticides are applied	☐YES ☐NO ☐N/A	
79. Tracking system is used for follow-up when pests are reported	☐YES ☐NO ☐N/A	
80. Tracking system is used for cleaning and sanitizing	☐YES ☐NO ☐N/A	
81. Garbage is taken out at the end of each day	☐YES ☐NO ☐N/A	
82. Floors are mopped daily	☐YES ☐NO ☐N/A	
83. Garbage containers are emptied regularly	☐YES ☐NO ☐N/A	
84. Refrigerator drip pan is emptied and cleaned every six months	☐YES ☐NO ☐N/A	
85. Garbage containers have lids	☐YES ☐NO ☐N/A	

*Examples of written policies and warning signs can be found in the IPM Curriculum

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EXPLANATION OF SOME ITEMS LISTED IN IPM CHECKLIST

Questions about an item?
Look for the corresponding number below for an explanation of the reasons for and importance of some of the *Checklist* items.

OUTDOOR AREAS

Garbage Storage

1. **Garbage cans and dumpsters are sealed properly**
   Garbage cans and dumpsters are metal or heavy-duty plastic and have lids that make a tight seal.
   WHY? Garbage cans and dumpsters that don't seal properly, or can be gnawed through by rats, provide access to food for rodents, birds, flies and other pests.
2. **Garbage cans and dumpsters are located away from doors**
   WHY? Garbage cans and dumpsters located too close to doors can attract flies and yellowjackets, which then can enter the building.
3. **Garbage cans and dumpsters are located on hard, cleanable surfaces such as concrete**
   WHY? Hard, cleanable surfaces such as concrete or asphalt pads help prevent rats from making burrows beneath them. Hard surfaces are easier to clean when spills occur. Flies, yellowjackets and other pests are attracted to spills.
4. **Area around garbage cans and dumpsters is free from spilled liquids or garbage**
   Overflowing containers indicate the need for more containers or more frequent garbage pickup.
   WHY? Spilled liquids and garbage attract pests.
5. **All recyclables are rinsed or cleaned**
   WHY? Food or drink residues in bottles or cans can attract pests that are looking for food.

Building Exterior

7. **Walls, roof and foundation are free of holes or cracks**
   WHY? Ground-level building seals, electrical and plumbing service entryways, roof entryways and windows are entryways for pests.
10. **Window screens are free of damage (for example, holes or gaps)**
    WHY? Pests commonly enter a building through holes, cracks, gaps and crevices in between pipes, vents, roofs, floors, windows, walls, baseboards, cabinets and mirrors. If you can fit a dime or pencil into the hole, then a mouse or rat can fit through the gap, too.
11. **Vents and other large openings are screened with < ¼–inch hardware cloth**
    WHY? Vents and large openings covered with ¼–inch hardware cloth will keep rodents, birds and yellow-jackets out and make it harder for them to burrow back through the hole.
12. **Exterior doors have sweeps, weatherstripping or similar barriers**
    If light is visible under or around doors, sweeps or weatherstripping should be installed.
    WHY? If light is visible under doors mice, crawling insects and spiders can enter the building. All exterior doors need sweeps, weatherstripping or similar barriers, especially doors near the garbage receptacle area.
13. **Roof gutters are clear of leaves and debris**
    WHY? Clogged gutters allow water to drip down the side of a building, damaging outside walls and increasing the chance of mold, mildew and wood rot.
15. **Water drains away from building**
    WHY? Even small leaks or sources of water keep the wood or soil underneath a building continuously moist. These are ideal conditions for termites. Pests require water to survive.
16. **Foundation comes up at least 12 inches above soil level**
    WHY? Elevated foundations provide a barrier to keep pests from entering.

Landscape and Play Area

21. **Wood, debris and thick mulch are at least 6 inches away from building**
    WHY? Rodents and some insects, such as ants, like to live in wood piles, debris and thick mulch. Ivy is a favorite shelter for rats. You should be able to see the building foundation to inspect for pests. Keeping shrubs and plants away from buildings increases light and air circulation and reduces moisture.
25. **Water drains away from building**
    Water drains should slope away from building to prevent standing water next to buildings.
    WHY? Standing water in lawns, toys and containers provides ideal conditions for mosquitoes to breed. Moisture allows mold and mildew to grow and provides water necessary for pests to survive.

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26. Garbage containers outdoors have dome lids
WHY? Dome lids prevent yellowjackets, rodents and other pests from searching for food. Unlike other types of lids, dome lids are convenient to use and always fit the container snugly.

27. Garbage containers have plastic linings
WHY? Plastic linings help keep garbage containers clean. They make garbage easier to toss into larger receptacles

28. Rodent bait stations, if present, are out of children's reach
WHY? Bait stations may contain sharp edges and pesticides that can harm children.

29. Yellowjacket traps, if present, are away from play and eating areas
WHY? Monitoring or lure traps can attract yellow-jackets into play areas.

INDOOR AREAS

Kitchen

34. Bulk food products are stored off the floor and out of contact with walls
WHY? Allows inspection under and behind containers, and reduces pest shelters and available food.

36. Floors and molding are free of food scraps, grease and sugary substances
WHY? Food that's left out attracts ants, cockroaches, flies, mice, rats, and other pests.

37. Cardboard boxes and other unnecessary packaging are not present
WHY? Cardboard provides hiding places for pests, especially cockroaches.

39. Gaps between pipes, vents and walls are sealed or screened
WHY? See # 10.

40. Cracks and crevices around cabinets and molding are sealed or plugged
WHY? See # 10.

41. Garbage containers have plastic linings
WHY? See # 27.

42. Insect bait stations, if present, are out of children's reach
WHY? See # 28.

43. Pest monitoring traps, if present, are out of children's reach
WHY? See # 29.

Bathrooms

45. Free from mold
WHY? Mold can irritatepeople with asthma and trigger other health problems.

46. Walls, floor and tiles are in good condition without cracks
WHY? See # 10.

47. Faucets and pipes do not drip or leak
WHY? Moisture allows mold and mildew to grow and provides water necessary for pests to survive.

48. Gaps between pipes, vents and walls are sealed or screened
WHY? See # 10.

49. Cracks and crevices around cabinets and mirrors are sealed or plugged
WHY? See # 10.

Common Space, Play Area, Eating Area

51. Furniture moves easily for vacuuming
WHY? Crumbs may collect under furniture. If you have a roach or flea infestation, vacuuming thoroughly is important.

52. Free of clutter (e.g., cardboard boxes or paper products)
WHY? Cockroaches and mice can hide in cluttered spaces. Roaches feed on cardboard and glue. Store playthings (e.g., puzzles, blocks, dress-up clothes) in sturdy plastic boxes with lids.

53. Walls or baseboards are free of holes
WHY? See # 10.

54. Area between wall and baseboard is free of space and cracks
WHY? See # 10.

55. Food items used for arts or crafts are in sealed containers
WHY? See # 36.

56. Garbage containers have plastic linings
WHY? See # 27.

57. Garbage containers have lids
WHY? See # 26.

58. Free of puddles and dripping faucets
WHY? See # 47.

59. Insect bait stations, if present, are out of children's reach
WHY? See # 28.

60. Pest monitoring traps, if present, are out of children's reach
WHY? See # 29.

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Storage Area

62. **Clean, organized and free of clutter**
    WHY? See # 52.
63. **Buckets are rinsed and mops are hung up to dry**
    WHY? Keeping mops and buckets dry prevents mold growth.
64. **Dry and free of standing water or moisture**
    WHY? See # 47.
65. **Cracks and crevices around cabinets are sealed or plugged**
    WHY? See # 10.
66. **Items are stored in plastic bins that have sealed lids whenever possible**
    WHY? See # 52.

Staff Area

68. **Free of clutter (e.g., cardboard boxes or paper products)**
    WHY? See # 52.
69. **Free of beverage containers, crumbs or debris**
    WHY? See # 36.
70. **Food is stored in sealed, rigid plastic containers**
    WHY? See # 36.
71. **Cracks and crevices around cabinets and baseboards are sealed or plugged**
    WHY? See # 10.
72. **Garbage containers have plastic linings**
    WHY? See # 27.

Pesticide Use and IPM Practices*

The following items show compliance with the Healthy Schools Act (HAS).

74. **Written pest management policy is in place and includes IPM practices implemented by facility**
    WHY? A written IPM policy gives a standard set of rules that ECE programs can follow to protect children and staff from harmful pests and pesticides using IPM practices.
75. **Written records of pesticide applications are kept**
    WHY? ECE programs can track their pesticide use. For some pesticides, keeping records is required by HAS.
76. **IPM coordinator is designated**
    WHY? An IPM coordinator makes sure IPM practices are being followed at their ECE programs.
77. **Parents are notified 72 hours before pesticides are applied**
    WHY? The HSA requires ECE programs to notify parents 72 hours before a pesticide is applied.
78. **Warning signs are posted 24 hours before and stay in place 72 hours after pesticides are applied**
    WHY? Post warning signs where pesticides are applied to comply with the HSA.
79. **Tracking system is used for follow-up when pests are reported**
    WHY? Keeping a record of where pests are and when they've visited will help you if you need to take some action later.
80. **Tracking system is used for cleaning and sanitizing**
    WHY? Regular cleaning and sanitizing will help keep pests out.
82. **Floors are mopped daily**
    WHY? Spilled food will attract pests.
84. **Refrigerator drip pan is emptied and cleaned every six months**
    WHY? (See #25).
85. **Garbage containers have lids**
    WHY? Garbage containers with lids keep pests from finding food.

*Examples of written policies and warning signs can be found in the IPM Curriculum

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Funding for this project has been provided in full or in part through a grant awarded by the California Department of Pesticide Regulation (DPR). The contents of this document do not necessarily reflect the views and policies of DPR nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

Sample

IPM Contract

Sample IPM Contract

REVISED : _____

Structural Integrated Pest Management Program:
Contract Specifications for INSERT YOUR FACILITY NAME HERE

(Contents include materials developed by the IPM Institute from a model authored by Dr. Albert Greene, U.S. General Services Agency)

Premises covered by this specification:

1. _____

2. _____

3. _____

4. _____

5. _____

(Attach additional list if necessary)

1. GENERAL

   A. Description of Program: This specification is part of a comprehensive Integrated Pest Management (IPM) program for the premises listed above. IPM is a process for achieving long-term, environmentally sound pest suppression and prevention through the use of a wide variety of technological and management practices. Control strategies in an IPM program include:
   - Structural and procedural modifications to reduce food, water, harborage and access used by pests.
   - Non-pesticide technologies such as trapping and monitoring devices.
   - Coordination among all facilities management programs that have a bearing on the pest control effort.
   - As a last resort, pesticide compounds, formulations and application methods that present the lowest potential hazard to humans and the environment.

   B. IPM Service Requirements: The Service Provider shall furnish all supervision, labor, materials, and equipment necessary to accomplish the monitoring, trapping, pesticide application, pest removal and pest prevention components of this IPM program. Any deviations from this program must be approved by the Chief Operating Officer (COO).

2. PESTS INCLUDED

   The Service Provider shall adequately suppress all pest species that have the potential to affect public health, impede operations or damage property, including but not limited to:

   - Indoor populations and invading individuals of rodents, insects, arachnids, and other arthropods.

- Outdoor populations of potentially indoor-infesting species that are within the property boundaries of the specified buildings.
- Nests of stinging insects within the property boundaries of the specified buildings.
- Termites and other wood-destroying organisms.
- Birds, bats, small mammals, and all other vertebrates.
- Mosquitoes.

3. PEST CONTROL PERSONNEL

Throughout the term of this contract, all personnel providing on-site pest control service must maintain certification as commercial pesticide applicators in the appropriate categories for the facilities listed above. Uncertified individuals working under the supervision of a certified applicator will not be permitted to provide service under this contract.

4. SERVICE PROVIDER IPM PLAN

The Service Provider shall submit to the COO an IPM Plan at least five (5) working days prior to the starting date of the contract. If aspects of the Plan are incomplete or disapproved by the COO, the Contractor shall have two (2) working days to submit revisions. The IPM Plan shall consist of three parts as follows:

A. Pesticide Labels and MSD Sheets: The Service Provider shall provide current Labels and Material Safety Data Sheets for all pesticides that will potentially be used in the pest control program.

B. Service Schedule(s): The Service Provider shall provide a schedule of routine pest control inspections for each building serviced under this contract, including frequencies of inspections, areas at each facility to be given special attention (e.g., food storage, preparation and serving areas; washrooms; custodial closets; mechanical rooms; entryways) and specific day(s) of the week on which the inspections will be performed.

C. Commercial Pesticide Applicator Licenses and Certificates: The Service Provider shall provide a photocopy of the State-issued Commercial Pesticide Applicator License for every Contractor performing on-site pest control service under this contract, and a photocopy of the State-issued Commercial Pesticide Applicator Certificate for every pest management professional (PMP) performing on-site pest control service.

The Service Provider shall receive the approval of the COO prior to implementing any subsequent changes to the approved Service Provider IPM Plan, including additional or replacement pest control products. The Service Provider will review and update the Service Provider IPM Plan annually, including updating MSDS/labels as needed.

4. RECORD KEEPING

The Service Provider shall be responsible for maintaining an IPM logbook or file for each building specified in this contract. These records shall be kept on-site and maintained on each visit by the PMP performing pest control service. Each logbook or file shall contain at least the following items:

A. IPM Plan: A copy of the Service Provider's approved IPM Plan, including pesticide Labels and MSDS sheets for all pesticides that will be potentially used in the building, service schedule for routine pest control inspections, and photocopies of the relevant Commercial Pesticide Applicator Licenses and Certificates.

B. Building Occupant Log Form: These forms will be used to advise the Service Provider of routine service requests and pest sightings by building occupants.

C. Service Provider's Report Forms: Customer copies of the Service Provider's signed and dated Service Report Form, documenting all information on services provided including pesticide applications required by State and local statute. This form must also indicate any recommendations made by the Service Provider for additional action advisable by the customer, e.g., structural or plumbing repairs required to limit pest access to the building or to food and water resources; improvements in sanitation, etc. A copy of this form must also be provided to the COO within one week of the service.

D. Service Provider Products and Devices: All bait stations, snap traps and glue boards or other devices left behind by the Service Provider are to be dated, numbered and listed on the Service Provider Report Form and checked on each subsequent visit until removed. All such devices shall be removed when full, dirty and no longer effective, or no longer needed.

5. MANNER AND TIME TO CONDUCT SERVICE

A. Time Frame of Service Visits: Frequent and complete communication between the Service Provider and the facility manager is critical for a successful outcome. Routine pest control services that do not adversely affect staff or patient health or productivity shall be performed during the regular building hours of operation. When it is necessary to perform work outside of the regularly scheduled service time set forth in the Service Provider IPM Plan, the Contractor shall notify the COO and/or facility manager at least one day in advance.

B. Safety and Health: All pest control work shall be in strict accordance with all applicable Federal, State, and local safety and health requirements. Where there is a conflict between applicable regulations, the most stringent will apply.

C. Special Entrance: Certain areas within some buildings may require special instructions for persons entering them. Any restrictions associated with these special areas will be explained by the COO. The Service Provider shall adhere to these restrictions and incorporate them into the Service Provider IPM Plan.

E. Uniforms: All Service Provider representatives working in or around the buildings specified in this contract shall wear distinctive uniforms identifying the name of their employer.

F. Vehicles: Vehicles used by the Service Provider shall be identified in accordance with State and local regulations.

6. SPECIAL REQUESTS AND EMERGENCY SERVICE

On occasion, the COO may request that the Service Provider perform corrective, special or emergency service(s) that are beyond routine service requests such as removal of a stinging insect nest. The Service Provider shall respond to these exceptional circumstances and complete the necessary work within twenty-four (24) hours after receipt of the request.

7. INSECT CONTROL

A. Emphasis on Non-Pesticide Methods: Non-pesticide methods of control shall be used wherever possible. For example:

1. Portable vacuums rather than pesticide sprays shall be the standard method for initial cleanouts of cockroach infestations, for swarming (winged) ants and termites, and for control of spiders in webs.

2. Trapping devices rather than pesticide sprays shall be the standard method for indoor fly control.

B. Application of Insecticides to Cracks and Crevices: As a general rule, all insecticides shall be applied as "crack and crevice" treatments only, defined in this contract as treatments in which the formulated insecticide is not visible to a bystander or accessible to children during or after the application process.

C. Application of Insecticides to Exposed Surfaces or as Space Sprays: Application of insecticides to exposed surfaces or as space sprays ("fogging") shall be restricted to exceptional circumstances where no alternative measures are practical. The Service Provider shall obtain approval of the COO prior to any application of insecticide to an exposed surface or any space spray treatment. No surface application or space spray shall be made while staff, patients or visitors are present. The Service Provider shall take all necessary precautions to ensure staff, patient and visitor safety, and all necessary steps to ensure the containment of the pesticide to the site of application.

D. Insecticide Bait Formulations: Bait formulations shall be the standard pesticide technology for cockroach and ant control, with alternate formulations restricted to unique situations where baits are not practical.

E. Monitoring: Sticky traps shall be used to guide and evaluate indoor insect control efforts wherever necessary.

8. RODENT CONTROL

A. Indoor Trapping: As a general rule, rodent control inside buildings shall be accomplished with trapping devices only. All such devices shall be concealed out of the general view and in protected areas so as not to be affected by routine cleaning and other operations. Trapping devices shall be checked on a schedule approved by the COO. The Service Provider shall be responsible for disposing of all trapped rodents and all rodent carcasses in an appropriate manner.

B. Use of Rodenticides: In exceptional circumstances, when rodenticides are deemed essential for adequate rodent control inside buildings, the Service Provider shall obtain approval of the COO prior to making any interior rodenticide treatment. All rodenticides, regardless of packaging, shall be placed either in locations not accessible to children, pets, wildlife and domestic animals, or in EPA-approved tamper-resistant bait boxes. As a general rule, rodenticide application outside buildings shall emphasize the direct treatment of rodent burrows wherever feasible.

C. Use of Bait Boxes: All bait boxes shall be maintained in accordance with EPA regulations, with an emphasis on the safety of non-target organisms. The Service Provider shall adhere to the following five points:

1. All bait boxes shall be placed out of the general view, in locations where they will not be disturbed by routine operations.

2. The lids of all bait boxes shall be securely locked or fastened shut.

3. All bait boxes shall be securely attached or anchored to floor, ground, wall, or other immovable surface, so that the box cannot be picked up or moved.

4. Bait shall always be secured in the feeding chamber of the box and never placed in the runway or entryways of the box.

5. All bait boxes shall be labeled on the inside with the Service Provider's business name and address, and dated by the Service Provider at the time of installation and each servicing.

10. USE OF PESTICIDES

The Service Provider shall be responsible for application of pesticides according to the label and all applicable regulations. All pesticides must be registered with the U.S. Environmental Protection Agency (EPA), State and/or local jurisdiction unless prior approval is given by the COO. Transport, handling, and use of all pesticides shall be in strict accordance with the manufacturer's label instructions and all applicable Federal, state, and local laws and regulations.

The Service Provider shall adhere to the following rules for pesticide use:

A. Rentry Time, Posting and Notification: Pesticides may not be applied where staff, patients or visitors will be present within seven hours after the application. At least seventy-two hours prior to a pesticide application, the Service Provider shall post an 8 ½ x 11" pest control information sign both at the site of the application and near the facility reception area where it will be seen by visitors entering the facility. This posting shall include the date, time and location of the application, the product applied, potential adverse effects from the Material Safety Data Sheet (MSDS) and the pesticide label, and include the Service Provider name, address and telephone. Service Provider shall also provide this information to the facility director who will use this information to notify staff and patients who have requested notification. Emergency applications, where pests pose an immediate threat to the health and safety of patients, visitors or employees, disinfectants, anti-microbials and self-contained or gel-type pesticide baits applied in inaccessible areas are exempt from posting, notification and the 7-hour reentry requirement.

B. Approved Products: No pesticide product shall be applied that has not been included in the Service Provider IPM Plan or approved in writing by the COO.

C. Pesticide Storage: The Service Provider shall not store any pesticide product in the buildings specified in this contract.

D. Application by Need: Pesticide application shall be according to need and not by schedule. As a general rule, application of pesticides in any inside or outside area shall not occur unless visual inspection or monitoring devices indicate the presence of pests in that specific area, and only after all non-toxic means have been exhausted and shown to be unsuccessful. Requests for preventive pesticide treatments in areas where surveillance indicates a potential insect or rodent infestation will be evaluated by the COO on a case-by-case basis. Written approval must be granted by the COO prior to any preventive pesticide application.

E. Minimization of Risk: When pesticide use is necessary, as a last resort the Service Provider shall employ the least hazardous material, most precise application technique and minimum quantity of pesticide necessary to achieve control.

11. RESPONSIBILITIES OF [INSERT YOUR FACILITY NAME HERE] STAFF

YOUR FACILITY NAME HERE recognizes that all building occupants have a role in reducing pest problems and reliance on pesticides. YOUR FACILITY NAME HERE STAFF shall take the following preventative measures to eliminate pest-conducive conditions:

A. To reduce potential to introduce pests, especially cockroaches, all food products and other supplies in the food service area will be removed from cardboard shipping containers after arrival. Cardboard will be moved immediately to the recycling storage outside the building.

B. To facilitate cleaning in food service areas and reduce food sources for pests, non-refrigerated food product storage will be on open metal racks. Any new metal racks purchased will have locking wheels for ease in moving to clean under and behind.

C. When events are scheduled that include serving food, the cleaning staff will be informed at least one week in advance in order to arrange for prompt removal of trash and cleaning.

D. Where possible, inspection aisles of 4-6" in width will be maintained between walls and any appliances, stored items and other objects to facilitate visual inspection and regular cleaning. Shelving and hangers will be used in closets and other areas to keep stored objects off floors for ease of cleaning.

E. Upholstered furniture will not be used in areas where eating is permitted.

F. To reduce pest harborage, clutter will be avoided on shelves, in closets and cupboards and other locations. In general, supplies not used within one year will be offered to other staff who may have more immediate use for them, recycled or otherwise properly disposed of.

G. To improve access for cleaning, closets will have stored items placed on shelves, leaving the floor accessible for regular cleaning.

H. To prevent pest access to potential food items, edibles stored in rooms and closets will be stored in plastic or metal containers with tight-fitting lids.

I. To prevent pest access to water, dripping faucets or other leaks will be repaired promptly. Mop buckets will be dumped daily, and damp mops hung from racks, head up, to dry.

J. Dumpsters will be placed away from buildings, on hard, easy-to-clean surfaces, and lids will be kept closed.

K. All staff and other regular facility users shall attend and participate in educational sessions to discuss and explain the IPM policy and procedures.

L. To maximize staff ability to be full partners in implementing IPM, all new staff will receive training on the IPM program, including in house and contracted cleaning staff. Current staff will receive refresher training at least every two years.

M. Administration shall initiate corrective measures as necessary so that staff follow the preventative measures that eliminate pest-conducive conditions.

N. To prevent and avoid pest problems, the IPM coordinator and any contracted pest management professionals serving our facilities will review plans for all new construction or renovation to identify and suggest improvements for any pest-conducive design features. They will review construction in progress to ensure adequate pest management during construction and proper implementation of pest-proofing measures.

O. Any contracted structural, landscape or public health pest management professionals will be carefully selected based on ability to perform according to our IPM policy and plan, and not solely on lowest bid offered for the tasks to be performed.

12. SUMMARY

Service Provider agrees to the following:

___1. Review the INSERT YOUR FACILITY NAME HERE IPM Policy, IPM Plan and Contractions Specifications and discuss any deviations from these documents with the COO.

___2. Provide training for all employees serving facilities consistent with the INSERT YOUR FACILITY NAME HERE IPM Policy, IPM Plan and Contract Specifications.

___3. Provide a Service Provider IPM Plan including MSDS, labels, inspection schedule and applicator certifications and licenses to the COO for approval at least five days before the contract start date. Update the Service Provider IPM Plan annually.

___4. Provide a binder for each facility serviced including the IPM Plan, a pest sightings log and a section for service records.

___5. Provide service consistent with the INSERT YOUR FACILITY NAME HERE IPM Policy, Plan and Specifications, and obtain written approval from the COO before deviating from these documents.

CONTRACT ATTACHMENT A. PRE-APPROVED PEST CONTROL PRODUCT LIST
The following products may be used with justification and according to the specifications above:

NOTE TO USER: THE IPM INSTITUTE CAN HELP YOU PUT THIS LIST TOGETHER, CONTACT US FOR MORE INFORMATION.

Appendix 4: Links to Online News/Outreach

http://sph.berkeley.edu/new-training-course-pesticide-use-in-schools

http://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=16780

http://ucanr.edu/?blogpost=17048&blogasset=74534

http://ucanr.edu/blogs/Communities/index.cfm?tagname=children

Appendix 5: Press Release

FOR IMMEDIATE RELEASE

New IPM Course for Pest Management Professionals

Berkeley, CA— The UC Berkeley Center for Environmental Research and Children's Health (CERCH) announces the release of a new training course for California's licensed pest management professionals serving schools and child care. You can go directly to the course here:

http://www.ipm.ucdavis.edu/training/school-and-child-care-ipm.html

New changes to the Healthy Schools Act in 2015 strongly encourage schools and child care providers to use least toxic methods to control pests. Called integrated pest management, or IPM, these methods aim to prevent pests. When there is a problem, pesticides are used as a last resort, and, baits or traps are preferred over sprays and foggers.

The law puts new training requirements on pest control companies serving schools and childcare centers. To help Pest Management Professionals comply with the Healthy Schools Act, we have developed a free online CEU course for licensed pest management professionals: *Providing Integrated Pest Management Services in California Schools and Child Care.*

If you work with a pest control company, encourage them to take the new FREE online continuing education (CE) course. All licensed pest control companies must take CE courses to keep their license, and this free course provides 2 CE hours and important information about schools and child care.

ABOUT THE IPM COURSE

This course is for pest management professionals (PMPs) but anyone, licensed or not, can take the course. This course will help PMPs provide IPM services in schools and child care centers, comply with the Healthy Schools Act, and expand their business. A directory of licensee's who have completed the course will be kept on the CERCH website (www.cerch.org/ipmtrainedpmps). The course is FREE and was developed by UC Berkeley, UC IPM, with input and review by DPR and Pest Control Operators of California. This project was funded by the California Department of Pesticide Regulation Pest Management Alliance Program

Course website: http://www.ipm.ucdavis.edu/training/school-and-child-care-ipm.html

CONTACTS

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Appendix 6: Letters of Recommendation

On 2/25/2015 9:33 AM, Rick Arendt wrote:

Hi, Asa & Andrew:

The San Diego District is very involved in the industry and we have a great district.
I am glad that all went well.
I have heard nothing but positive comments about the class.

Thanks again,
Rick Arendt
American Pest Control

Jordan Consulting
587 Lewis Ave.
San Leandro, CA 94577
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Providing IPM Services in Child Care Setting for PMPs

January 15, 2015

The class began with a discussion of health issues in child care settings and the impact of pests on children's health. This was followed by a presentation of the Healthy Schools Act and the detailing of rights and responsibilities of childcare operators and PMPs. A description with discussion of IPM best practices followed which included key suggestions for building and expanding pest control businesses.

I appreciated that the class was presented by individuals from a science research background and private pest control industry. This approach demonstrates to me and the class participants that healthy pest elimination practices and business profitability can work hand in hand. In that regard, the class was an appropriate balance of knowledge of mandatory regulation, IPM practices, and business insight into expanding necessary billable IPM services for companies.

While the class was developed for PCOs and PMPs, it was an appropriate vehicle to bring awareness of the Healthy Schools Act and its requirements to many NGO, NPO, and governmental agencies. I would encourage presentation of this class throughout California.

The class materials provided both paper and electronically were excellent templates that can readily assist businesses in developing an IPM approach without having to search them out. Small businesses often would like to improve their practices to mark their business as a better option among competitors but do not have the time to research best practices or language.
I felt there were excellent additional resources provided within the class materials.

To whom it may concern:

In February 2015 Asa Bradman, Andrew Sutherland and Luis Agurto came and taught a class on the Healthy Schools Act and School and Child Care IPM for the PCOC Shasta District. There were about 60 attendees. The class that was taught was very informative. The class broke down the regulations in a clear and concise way that made it easy to understand the regulations. It was also very instructive on the use of pesticides around children and on doing IPM at schools. One of things that I thought made the class particularly good, outside of the content, was that there were 3 instructors for the 2 hour class. They each have their specialty and a section of the class that they teach, and mixing up the speakers always helps to keep the attention of the attendees. They also provided for the attendees flash drives and printed materials with a number of documents that help to comply with the Healthy Schools Act, including the power point of the class that they taught so we could go back and reference the information provided. This was probably the best class on School and Child Care IPM that I have attended.

Thank you,

Jacqui Harmon
PCOC Shasta District Chair

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