SECTION 1

Introduction to California School IPM

1.1 What is Integrated Pest Management (IPM)?

Integrated pest management (IPM) is an approach to pest control that uses regular monitoring and recordkeeping to determine if and when treatments are needed. It employs a com- bination of strategies and practices to keep pest numbers low enough to prevent unacceptable annoyance or damage. IPM does not eliminate the use of chemical pesticides, but instead uses them only when needed. There are many definitions of IPM; the Healthy Schools Act (Food and Agricultural Code section 13181) 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 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 that they are needed according to pre-established guidelines and treatment thresholds."

At its most basic, IPM is a common-sense pest management approach that requires pest management action only when necessary and with the least-hazardous method. Many pest management methods, such as biological, cultural, physical, educational, and chemical methods, can be used in a least-hazardous IPM program. Educational methods are used to enhance pest prevention, and to build support for the IPM program. Chemical controls are used only when needed, and in the least-hazardous formulation that is effective against the pest.

Pest prevention begins with correct identification of the pest and knowledge of its needs and entry points. Available food, water, hiding places, and entry points must be eliminated for long-term suppression of a pest. Use of least-hazardous IPM has been shown to dramatically reduce the use of chemical pesticides, while providing better, longer-lasting control of pests.

Box 1-1: What is a pesticide?

A pesticide is any substance intended to control, destroy, repel, or attract a pest. Some common pesticide types include herbicides (for control of weeds and other plants), insecticides (for control of insects), disinfectants and sanitizers (to control disease-causing microo ganisms on inanimate objects), and rodenticides (for control of rats, mice and other rodents).

Box 1-2: Principles of IPM

1. Perform thorough in-field or on-site assessments of each pest problem.
2. Establish scouting or inspection procedures to monitor pest population levels and severity of the pest problem.
3. Use appropriate control action thresholds, if available, for each (combination of) pest problem(s) to determine when corrective action(s) must be implemented.
4. Determine corrective action(s) when a control action threshold is reached. Use the following objectives in the selection of specific reduced-risk practices: least disruptive of natural controls, least hazardous to human health, least toxic to non-tar get organisms, least damaging to the environment, most likely to produce a permanent reduction in the supportive environment for the target pest(s), and most cost-effective considering both short- and long-term objectives.
5. Establish and maintain an accurate record-keeping system to catalog monitoring information and document management procedures.
6. Evaluate the effectiveness of the IPM program and make adjustments as needed

1.2 Why implement an IPM program?

IPM is an accepted method of pest management in schools (Stauffer et al., 1998; Grant and Woodsen, 2001). Using least-hazardous IPM techniques can save time, money, and energy, as well as decrease the use of pesticides. In a 2007 California Department of Pesticide Regulation (DPR) survey of California school districts, 57% of the respondents stated that IPM reduced or had no impact on cost (Cowles, et. al, 2008). IPM practitioners prevent pest problems by eliminating the conditions that allow pests to flourish, detecting pests early before the population grows, and by establishing records so that outbreaks can be predicted. Other school concerns, such as sanitation, maintenance, and energy usage can be addressed with proper IPM practices.

Using fewer pesticides in an IPM approach addresses the growing concern for the health and safety of school children and other building occupants. Many parents, community organizations, and advocacy groups have become more aware, and more cautious, of pesticide use around children. A desire to know that schools are using pesticides safely and judiciously has been expressed to legislators all over the United States and as a result, laws concerning pesticide use in schools are in place in several states including California.

1.3 What is DPR's role in California school IPM?

In 1993, DPR began a pilot program to work with interested school districts to provide them information about IPM practices and assist them in developing an IPM program. DPR also conducted an extensive survey of school districts in 1996 to gain information about their IPM policies and practices (Simmons et al., 1996). Governor Davis felt that IPM in schools was important enough to add a school IPM program to DPR's budget in July 2000, as part of his Children's Health Initiative. Governor Davis later signed Assembly Bill 2260 (the Healthy Schools Act of 2000, Education Code sections 17608–17613 and Food and Agricultural Code sections 13180–13188) into law on September 25, 2000. This law, authored by Assembly Member Kevin Shelley, put into code DPR's existing voluntary school

IPM program and added some new requirements regarding pesticides, such as notification, posting, and recordkeeping for schools, and enhanced pesticide use reporting. The law was subsequently amended to prohibit the use of certain pesticides (Assembly Bill 405, Chapter 566, Statutes of 2005) and include private child day care facilities (Assembly Bill 2865, Chapter 865, Statutes of 2006). In response to AB 2865, DPR established a Child Care IPM program to specifically focus on outreach and education to child day care facility providers. This guidebook addresses IPM in the school district setting. A guidebook addressing IPM in the child care setting is available from the University of California at San Francisco's California Childcare Health Program https://cchp.ucsf.edu/. The Healthy Schools Act makes IPM the preferred pest management method in California schools. Most provisions of the law took effect January 1, 2001.

Through its school IPM program, DPR is committed to facilitating voluntary establishment of IPM policies and programs in schools throughout California, while assisting school districts with implementation of the new Education Code requirements. DPR also works with other boards and departments of the California Environmental Protection Agency and with the California Department of Education to tie IPM into related areas such as school gardens and environmental education.

1.3.1 DPR's School IPM Web Site

DPR has established an IPM in Schools Web site at www.cdpr.ca.gov/schoolipm as a source of information on school IPM. The site includes home pages customized for parents/ teachers, school administrators, maintenance and operations staff, and pest management contractors. Resources available include summaries of the Healthy Schools Act, frequently asked questions, new regulations on school pesticide use reporting, an exhaustive listing of pest prevention techniques, sample notification letters to parents about expected pesticide use, a worksheet to determine whether specific pesticide products are exempt from HSA requirements, and many other items. The Web site also allows school districts to compare the health and environmental impacts of management practices used for specific pests, and to identify the active ingredients associated with pesticide products schools may use. In addition, the Web site provides extensive links, to other IPM resources.

1.3.2 School IPM Workshops

The Healthy Schools Act directs school districts to designate IPM coordinators to carry out requirements of this law. DPR offers voluntary train-the-trainer workshops so that those who carry out the IPM program understand principles of IPM and can train their staff. These regional workshops showcase model IPM programs and provide hands-on experience.

1.3.3 Assisting Districts to Establish IPM Policies and Programs

Some school districts already are working with DPR to establish IPM programs. Currently, DPR is working with California Department of Education and has information on its Web site about model programs. In addition, DPR publicizes its school IPM program at meetings attended by maintenance and operations directors and their staff, school administrators, educators, and parents.

1.3.4 School IPM Guidebook

This guidebook is the result of an effort to tailor an existing school IPM guidebook to conditions in California. The Healthy Schools Act requires DPR to include specified IPM program elements. These program elements are covered in Part 1.

1.3.5 Evaluating IPM Adoption in Schools

Baseline and follow-up surveys help DPR to measure IPM adoption in schools, to evaluate what kind of outreach school districts need, and to see whether this outreach has been effective.

1.4 What are the requirements of the Healthy Schools Act for school districts?

All public school districts are required to comply with the Healthy Schools Act. These requirements include identifying an IPM coordinator; Developing an IPM Plan; providing annual written notification with specified information on pesticides to all school staff and parents or guardians of students; providing the opportunity for interested staff and parents to register with the school district if they want to be notified of individual pesticide applications at the school before they occur; posting warning signs at the entrance to each area of the school where pesticides will be applied; maintaining records of all pesticide use at the school for four years; reporting pesticide use to DPR; ensuring that prohibited pesticides are not used in schools; and that all individuals using pesticides on a schoolsite has completed training. Sample letters, templates, and posting signs are included in **Appendix A** to help schools comply with these requirements.

1.4.1 Identify an IPM Coordinator

Each school district shall designate an individual (who may be the IPM coordinator) to carry out the requirements of the Healthy Schools Act.

1.4.2 Develop an IPM Plan

Each school district must create an IPM plan using the template developed by Department of Pesticide Regulation; or get the IPM plan approved by DPR. It must be posted on the school district website or sent home with all students and staff, and made available to view at the school district office.

1.4.3 Notification (Education Code section 17612(a))

Each school district is required to "annually provide to all staff and parents or guardians of pupils enrolled at a schoolsite a written notification of the name of all pesticide products expected to be applied at the school facility during the upcoming year." This notification must include the active ingredient(s) in each pesticide product and the Internet address used to access information on pesticides and pesticide use reduction strategies developed by DPR (pursuant to section 13184 of the Food and Agricultural Code). The notification may contain other information deemed necessary by the school district. Adding information about the target pest and the application method can be helpful to parents or staff unfamiliar with pests and pesticides, although this is not required by the Healthy Schools Act. These notification requirements are intended to be inexpensive for school districts. Annual notification to parents and guardians may be included as part of any other written communication provided to individual parents or guardians. Registrants can be notified by U.S. mail, e-mail, or telephone. Notice through first-class mail is not required. If districts contract for monthly or periodic pest management services, people on the registry may be notified of each pesticide application by the contractor, if this is agreed to as part of the contract.

1.4.4 Establish a Notification Registry

Recipients of the annual pesticide notice may register with the school district if they wish to receive notification of individual pesticide applications at the school facility. People who register for such notification must be notified of individual pesticide applications at least 72 hours before the application. This notice shall include the product name, the active ingredient or ingredients in the product, and the intended date of application. If a pesticide product is not included in the annual notification but is later intended for use at the school site, the school district must provide written notification of its proposed use at least 72 hours before application.

The notification procedures described above are not required for pest control measures taken during an emergency condition, but the school district shall make every effort to provide the required notification for an application of a pesticide under emergency conditions. The notification and posting requirements described above also do not apply to activities by participants in the state program of agricultural vocational education. School farms are regulated by another set of posting and notification requirements (California Code of Regulations 6618). The notification and posting requirements do not apply to agencies that have a cooperative agreement with the Department of Public Health (Education Code section 17613).

1.4.5 Posting (Education Code section 17612(d))

School districts are required to post a warning sign in each area of a school site where pesticides will be applied. The sign must prominently display the term "Warning/ Pesticide Treated Area," and will include "the product name, manufacturer's name, the United States Environmental Protection Agency's product registration number, intended date and areas of application, and reason for the pesticide application." The warning sign must be visible to everyone entering the treated area and must be posted 24 hours prior to the application and remain posted until 72 hours after the application. One option is to silk screen the text onto metal signs with blanks for the product name, manufacturer's name, and other information. Specifics of each application can then be filled in with a grease pencil.

1.4.6 Exemptions to Notification and Posting Requirements

The requirements for notification and posting change in a pest control emergency. See section 4.2 of this guidebook, under "Declaring an Emergency Under the Healthy Schools Act," for more details. "Emergency conditions" are defined in the law as "circumstances in which the school district designee deems that the immediate use of a pesticide is necessary to protect the health and safety of pupils, staff and other persons, or the school site." (Education Code section 17608[c]) In an emergency, staff, parents, and guardians need not be notified 72 hours in advance; however, every effort must be made to provide the notification. The warning sign must be posted immediately upon an emergency application and remain posted until 72 hours after the application. (Education Code section 17612.2(c)).

Pesticides used in an emergency should pose the least possible hazard to people, property, and the environment, and be used only after the emergency has been documented (including type of problem, associated risks, and pest management alternatives considered but not used). Pesticide products selected for use must be registered with DPR to control the pest and be effective for the intended purpose.

1.4.7 Maintain Records

Each school shall maintain records of all pesticide use at the school for four years and make the records available to the public upon request. Records can be computerized but paper copies kept in a file provide easy access. Records can simply be a copy of the posted warning sign with the amount of the pesticide used noted on the copy.

1.4.8 Report Pesticide Usage to DPR

The Healthy Schools Act requires DPR to prepare school pesticide use reporting forms to be used by any school site employee, community member, volunteer, or licensed pest control businesses when they apply any registered pesticide at a school site. The school pesticide use reports must be submitted to DPR at least annually. This form can be downloaded from the DPR School IPM Web site at www.cdpr.ca.gov/schoolipm.

1.4.9 Don't Use Prohibited Pesticides

AB 405 prohibits the use of certain pesticides at schools because they are registered for use in the State of California either: (1) conditionally, (2) as an interim registration, or (3) under an experimental use permit (EUP), and contain either a new active ingredient or are intended for a new use.

All pesticide products that DPR has canceled, suspended, or required phaseout of use are also prohibited. The list of pesticide products prohibited under AB 405 is available at http://apps.cdpr.ca.gov/schoolipm/school_ipm_law/prohibited_prods.pdf. To assist school districts, DPR has posted on its Web site samples of the annual notification and the register, and a template of the warning sign. These documents can be downloaded at www.cdpr.ca.gov/schoolipm. These forms are included in **Appendix A**.

1.4.10 Complete IPM Training

Anyone who applies pesticides on school grounds must complete a DPR-approved training course. The DPR-approved courses that meet this requirement are listed on the DPR website. Training must focus on IPM on schoolsites and safe use of pesticides in relation to the unique nature of schoolsites and children's health. This training must be completed annually by school staff, and per license renewal period by license holders.

1.4.11 Exemptions from the Requirements

The Education Code (section 17610.5) notification and posting requirements described above do not apply to "a pesticide product deployed in the form of a self-contained bait or trap, to gel or paste deployed as a crack and crevice treatment, to any pesticide exempted from regulation by the United States Environmental Protection Agency pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. Sec. 25 (b)), or to antimicrobial pesticides, including sanitizers and disinfectants." (For more information on exempt pesticides, see DPR's School IPM Web site at www.cdpr.ca.gov/schoolipm or **Appendix B**.)

The notification and posting requirements do not apply to schools operated by the Division of Juvenile Justice. The Healthy Schools Act however does require that "the school administrator of a school operated by the Division of Juvenile Justice shall notify the chief medical officer of that facility at least 72 hours prior to application of pesticides. The chief medical officer shall take any steps necessary to protect the health of pupils in that facility." (Education Code section 17612.2 (e)). See **Appendix C** and **Appendix D** for more details.

1.5 What are the Healthy Schools Act requirements for licensed pest control businesses?

This law (Food and Agricultural Code section 13186) requires that:

Licensed pest control businesses shall report pesticide applications at schools annually (no later than January 3rd of each year) to the Director of DPR beginning with applications made on or after January 1, 2002. A downloadable copy of the Pesticide Use Reporting form for School Sites can be found in the laws and regulations section at www.cdpr.ca.gov/schoolipm or email school-ipm@cdpr.ca.gov.