

Guidance for Creating a DPR-Approved Healthy Schools Act Training



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Section 1: Creating a Healthy Schools Act Course for Approval by DPR

* The following document is a guide to creating and submitting a course that fulfills the HSA training mandate.

When is Training Required?

The Healthy Schools Act (HSA) states that any person who applies any pesticide at a schoolsite must first complete a training course provided by the Department of Pesticide Regulation (DPR) or an agent authorized by DPR. Schoolsite staff that use pesticides must complete the training annually, while licensed pest management professionals that apply pesticides at schoolsites must complete a one hour HSA training course during each license renewal cycle.

Course Content Requirements

As provided by law, all HSA training courses shall include Integrated Pest Management (IPM) and the safe use of pesticides in relation to the unique nature of schoolsites and children's health. The following Core Course Content part I and II have been provided as a reference for content in these topics. Trainings can be tailored to specific jobs, roles, and pesticide use patterns and therefore are not required to include all of the information found in the core course content.

Include enough information to instruct trainees to competently use IPM and safely use pesticides at schoolsites in relation to children's health, and to use the least toxic pesticides when other management strategies have failed or are not feasible.

Citing Sources

DPR requests that courses submitted for approval do not directly copy DPR publications or this guidance document. Course creators should provide instruction and education as subject matter experts by demonstrating a competent grasp of the required topics without directly copying outside sources. Include citations to reference source material throughout a course or by adding footnotes and source reference page.

Section 2: Submitting a Healthy Schools Act Course for Approval by DPR

Please be prepared to meet these requirements before submitting a course to DPR.

- DPR-approved HSA courses must provide course participants with a certificate of attendance.
- Course sign-in sheets, including printed names and signatures and date training was completed, must be submitted to DPR's School and Child Care IPM Program. Electronic submission of sign-in sheets is possible, inquire for details.
- All course materials must be reviewed by DPR. These may include - scripts, PowerPoint slides with visuals, and quiz questions, answer choices, and correct answer key.

To start the process of having your course approved by DPR:

Submit course materials by e-mail to school-ipm@cdpr.ca.gov. This is the preferred method.

Or submit by mail (include your contact information) to:

School and Child Care IPM Program 3A
California Department of Pesticide Regulation
P.O. Box 4015
Sacramento, CA 95812-4015

You will receive an email acknowledging that your course has been received and will be reviewed. You will receive a follow up email with suggested edits/corrections if needed within 2 weeks. Courses may be denied approval if the required criteria are not met. When edits and the review process are complete you will receive an email that includes a memo stating that the course has been approved to meet the HSA training mandate. The course will be listed on the DPR Third Party Approved Courses web page with your choice of Open or Closed for public registration. The name and email address of your organization's contact will also appear on the web page.

Continuing Education Units for DPR and SPCB

Courses approved by DPR for HSA training can qualify for continuing education units (CEU) for DPR and Structural Pest Control Board licensees. You must apply separately to receive these CEUs. For CE approval for DPR license holders, contact the continuing education program at cemail@cdpr.ca.gov. For CE approval for Structural Pest Control Board licensees, go to <http://www.pestboard.ca.gov/ce/index>.

Section 3: Core Course Content

Part I: Integrated Pest Management at Schoolsites

* The following information is provided as reference to meeting the Integrated Pest Management content requirement for a Healthy Schools Act training.

Integrated Pest Management (IPM) Least toxic pest management practices should be the preferred method of managing pests at schoolsites according to the Healthy School Act. The HSA defines Integrated Pest Management 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 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."

Pest Prevention should be ongoing and is effective for preventing pest problems.

- *Exclusion*—Keep pests out of buildings by sealing cracks in walls and around foundations and windows. Seal openings around pipes, wiring, baseboards, and in ceiling voids. Use caulking to repair cracks and escutcheons around pipes to close gaps. Installing door sweeps is a highly effective method for keeping pests out. Any opening larger than ¼ inch allows rodents access. Store food in plastic containers with tight lids, off the floor on shelves.

- *Sanitation*—Empty trash daily and use plastic trash can liners. Use tight fitting lids on outdoor garbage containers to keep pests out. Clean areas frequently where students and staff eat. Eliminate standing water in kitchens, bathrooms, faculty and staff breakrooms, and locker rooms.

- *Outdoors*—Hardscapes can be sealed to prevent weeds. Cut back trees to at least 6 feet away from buildings and thin bushes, to prevent rodent access and nesting. Look for pest hiding places in cement cracks and drains. Eliminate standing water to prevent mosquito egg laying.

Monitoring and Recordkeeping detects pests early and helps control populations before they become a bigger problem.

- *Routine Monitoring*—Identify problem areas and new infestations. Use sticky traps indoors for insects and other arthropod pests to determine access points. Train teachers, food service and office staff to monitor for signs of pests. Report any pest problems right away to the IPM coordinator or maintenance staff. On building exteriors, check for entry points routinely and make repairs.

- *Pest identification*—Pest identification can be key to effective control. Resources include the University of California IPM online resources and Cooperative Extension experts, and your local County Agricultural Commissioner's office.

- *Recordkeeping*—Track your progress and make any needed improvements in treatment methods. Record monitoring observations routinely. Make a record to track effectiveness over time. Re-evaluate and adapt practices to address current conditions.

Best Management Practices address pest problems using a combination of practices and non-toxic methods, before considering using pesticides.

- *Rodents*—For mice and rats use snap traps and pre-bait. Place traps inaccessible to students, or in bait stations. Electrocutation traps are enclosed and effective. Gopher trapping in tunnels can effectively replace pesticides. Trap before spring mating begins. Consider installing a hawk perch or owl nest box.

- *Cockroaches*—Sticky trap monitoring is highly effective to locate source populations. Eliminate access and places to hide, in clutter and cardboard boxes. Address sanitation and eliminate standing water. A HEPA vacuum can be used to quickly remove colonies of roaches when found. For ongoing infestations, use a cockroach bait in combination with an insect growth regulator.

- *Ants*—Sanitation and exclusion will eliminate most ant problems. Clean ant trails with soapy water, store food properly, and seal entry points. Use small amounts of ant bait instead of general insecticide sprays, which sometimes cause ant colonies to disperse and regroup.

- *Weeds*—On landscapes and athletic fields adjust irrigation, address soil health, and mow prior to seed dispersal. On hardscapes, seal cracks and consider using string trimmers, steam treatments, or flame weeding.

- *Stinging insects*—Place wasp traps with lures and remove paper wasp nests being built early in the spring. Only remove nests at cooler temperatures. Contact a professional to relocate bee hives or remove established paper wasp nests. Remove standing water to prevent mosquito egg laying.

- *Plant insect pests*—Consider releasing insect biological control agents and protect predatory insects. High pressure water spray can remove aphids. Identify pests first for the best course of action.

- *Birds*—Install bird spikes to block roosting and nesting areas. Bird netting can be effective if installed correctly. Consider installing a hawk perch or hiring a falconer.

- *Spiders*—Remove webs routinely using a broom. Use insect sticky traps along walls in inaccessible locations to catch ground dwelling spiders.

* This is not an exhaustive list of guidance for integrated pest management at schoolsites.

Part II: Pesticide Use at Schoolsites

* The following information is provided as reference to meeting the safe use of pesticides in relation to the unique nature of schoolsites and children’s health content requirement for a Healthy Schools Act training.

Schoolsites are unique environments with dense populations of children who are on site daily most of the year. The safe use of pesticides is critical to protect children from detrimental health effects that pests can cause, and pesticides must be used without causing harm to children.

Potential Health Effects of Pesticide Exposure for Children

Children are more susceptible to pesticide exposure than adults and are more vulnerable to the toxic effects of pesticides.

- *Physiology*—Children are still growing. Skin, lungs, brains, and other organs are still developing. Their livers are not able to break down toxins efficiently. Airways are smaller and skin is more absorbent, and more easily damaged by fumes and contact with pesticide residues.

- *Behavior*—Children are much more likely to come into contact with pesticide residue. They play on floors, carpeting, and outside on the ground on grass and dirt. Tasting objects and putting fingers in mouths is very common. Children are curious and may locate improperly stored pesticides, rodent bait stations, or misplaced colorful rodent pellets and granular baits.

- *Acute and chronic effects*—Acute exposure effects include eye, nose, throat, and skin irritation, headache, nausea, dizziness, muscular weakness or pain, and respiratory distress. Chronic effects occur from exposure over time, and include an increased risk of cancer, central nervous system damage, liver or kidney damage, and endocrine system damage. Even low levels of pesticide exposure can have long term effects.

Toxicity of Pesticide Products

Understand the risks associated with using a pesticide product. Children’s health can be affected by even small amounts of pesticides. Over one third of reported pesticide illnesses each year are caused by exposure to sanitizers and disinfectants. Skin can sustain chemical burns by coming into contact with antimicrobial pesticides. When children ingest or inhale sodium hypochlorite, bleach, or quaternary ammonium, they can experience headache, sore throat, vomiting, rash, nausea, tachycardia, or shortness of breath. Not using a product according to label directions is the leading cause of illnesses from antimicrobial pesticide exposure.

- *Pesticide labels*—It is illegal to use a pesticide and not follow the label directions. Understanding the signal word, precautionary statement, and directions for use are critical. Directions for use tell you where, when, and how to use the product and gives prohibited use conditions. First aid instructions, an emergency phone number, and a pesticide hotline number are on the label.

- *Selecting a pesticide*—Always choose the least toxic product. Consider timing of use, do the dry times or re-entry times fit into the school schedule so children can remain away from the treatment area? Consider buffer zone areas, will they work for the schoolsite, and can buffers be expanded to further protect children?

- *Residual pesticides*—Pesticides that continue to work over time are called residual pesticides. Residual effectiveness can last from a few hours to a few years. Longer residual times allow more time for exposure to children and pose a greater risk. Insecticides such as termiticides can have a very long residual time. The two most frequently used insecticides at schools have a 21 to 90 day residual effectiveness, deltamethrin and lambda-cyhalothrin. Vapor or droplets can land on surfaces that students touch, such as bathroom fixtures, baseboards, inside cabinets, and around windows.

Minimizing Risk and How to Reduce Exposure

There is always a risk associated with using pesticides. Know how to minimize risk and reduce exposure. Check to see if an application has fully dried before children are allowed to enter the area. Extend dry times whenever possible.

- *Drift*—Drift is the movement of a pesticide from the area of application to an unintended site. Pesticide drift is the most common cause of exposure at schoolsites. The herbicide active ingredients 2,4-D and Dicamba are the two most frequently applied herbicides on schoolsites likely to vaporize and drift in California’s climate. Aluminum phosphide, a fumigant used for burrowing mammals like gophers, also presents a risk of drift if not applied properly. Vapor pressure and the possibility of drift increases as temperature increases. Carefully consider weather forecasts and soil conditions when planning an application. Children’s lungs can be damaged by inhaling pesticide fumes.
- *Ventilation*—Reduce air movement and drift by covering vents between rooms, turning off air conditioning, and closing windows during applications. Insecticides are often used indoors and there are cases of school ventilation systems spreading pesticides around the building. Make sure not to apply pesticides into an active air intake or AC unit. Classrooms, cafeterias, restrooms, auditoriums, and libraries at California schoolsites are most frequently treated with the active ingredients deltamethrin, lambda-cyhalothrin, and fipronil. Over-application or lack of ventilation can cause acute illnesses in children including skin, eye, and lung irritation. After an indoor application, according to the label, open windows, doors, and use fans to ventilate. Keep people out of the area until the room is well ventilated. Covering or removing as many items as possible in an application area reduces the risk of exposure when children return.
- *Backpack sprayers*—Use clean, non-leaking nozzles and screens. Rinse the tank and run the sprayer to flush out hoses regularly. Test the nozzle using water for the correct spray pattern and droplet size before applying a pesticide. Spray at a lower pressure to make larger droplets that will linger less in the air. Over half of the pesticide illnesses reported in a two year period occurred from drift and pesticide residues when pesticides were applied with a backpack sprayer, causing vomiting, rash, headache, dizziness, and children missing days at school.
- *Spray calibration*—Calibrate equipment to apply the proper amount of pesticide. Applying too much pesticide increases the risk of exposure to children. Using not enough could cause a lack of effectiveness against the pest. Calibration will vary for each person and on different equipment. Pressure, walking speed, and nozzle size determine the rate of discharge.
- *Pesticide containers*—Always keep pesticides in the original container. NEVER use a drink container to store a pesticide. Consider using a system that provides a pre-measured amount of concentrated product, especially for antimicrobials. For school staff, splashing antimicrobials or sanitizer into the eyes during mixing causes a significant number pesticide illness reports each year.

- *Pesticide Storage*—Always store pesticides in areas inaccessible to children such as in a locked cabinet or storage room. Follow label instructions for storage temperature limits. Every pesticide label tells you how to store and dispose of any remaining product and container. Improper storage or disposal of pesticides is illegal.

- *Keep Out of Reach of Children*—All pesticide labels, including antimicrobial pesticides, specify “Keep Out of Reach of Children” federal child hazard warning. Students should not use or have access to pesticides including disinfecting wipes, or any other disinfecting or sanitizing product.

Best Management Practices for Rodenticides, Herbicides, Insecticides, and Antimicrobials.

- *Rodenticides*—Rodenticides are among the most acutely toxic pesticides regularly used on schoolsites. They are most often used around building exteriors, on athletic fields, and in landscaped areas. Use rodenticides as a last resort instead of for prevention. Set traps inside of rodent bait stations or burrows when the pest pressure is low. Consider hawk perches or owl boxes as part of your rodent IPM program. Seek out alternatives to repeated fumigations of burrowing rodents at California schools.

Aluminum phosphide releases phosphine gas, a fumigant used to control burrowing rodents and a restricted use pesticide because of its toxicity to people. Aluminum phosphide product labels include specific instructions for the maximum amount of product to be applied to a rodent burrow, warning placard posting, and other legal requirements for use. Many rodenticide products are colorful small pellets or a one-ounce block or pouch. Children who ingest the gopher bait Diphacinone, the most frequently used rodenticide at schools in California, or chlorophacinone, may experience internal bleeding. Strychnine found in gopher bait, the second most widely used rodenticide at schools, is potentially fatal if swallowed. Bromethalin, a nerve toxicant, causes vomiting, lethargy, and abdominal pain in children.

Rodenticides must be contained in a station or in underground burrows when applied on a schoolsite according to the product label. Rodent bait stations that are potentially accessible to children should be certified EPA Tier 1. DPR recommends only using rodent bait stations that have EPA certification as childproof even in inaccessible locations on a schoolsite. Check bait stations regularly and immediately remove or repair an unsecured or damaged station. Avoid placing dark colored bait stations in prolonged direct sun, which may cause the bait inside to melt. Avoid spilling colorful pellet baits on the ground. Watch out for rodents carrying pellets or blocks outside of stations to areas where children or other non-target species may find them.

- *Herbicides*—Apply herbicides only as needed to smaller areas, instead of treating large areas. This reduces the chance of exposure to children from drift and pesticide residues on playgrounds, athletic fields, landscapes, and outdoor railings and benches. The number one complaint from parents to DPR is children being in the area or quickly allowed back into an area after treatment with a Glyphosate product. 2,4-D and Dicamba are common herbicide active ingredients that are prone to vaporizing and drifting in heat over 85 degrees. This can occur several hours after an application is complete as temperatures rise. The National Pesticide Information Center website states, “Breathing 2,4-D vapors can cause coughing, a burning feeling in the airway, and dizziness.”

- *Insecticides*—Avoid foggers, also known as bug bombs, at schoolsites. Avoid routine spraying, only apply insecticides when needed. Pyrethroids are the most commonly used insecticides at schoolsites and they can cause lung irritation and breathing difficulties with acute exposure. Products used for termites generally have long residual activity and must be applied carefully according to the label. When removing a stinging insect nest with an aerosol product be sure no children are in the area.

- *Antimicrobials*—Antimicrobial pesticides use should be limited to surfaces that need to be sanitized or disinfected. Sanitizing reduces germs on surfaces to levels considered safe by public health standards, while disinfecting kills nearly all germs on hard surfaces. If a surface is dusty, dirty, or cluttered, wiping or spraying with a disinfectant will not kill germs. Pre-clean surfaces before applying antimicrobial pesticides. Keeping a surface wet for the specified contact time listed on the label is necessary for an antimicrobial product to be effective.

Best practices include using dilution stations to provide a pre-measured amount of product, pre-mixing concentrated solutions, and dispensing accurately measured amounts. Make sure the room is well ventilated when diluting and applying the product. To reduce splashing when diluting antimicrobial pesticides, add the label-specified measured amount of the product using a funnel to cool water, instead of adding water to the product. Consider using EPA-registered products with active ingredients in the least-hazardous toxicity class such as hydrogen peroxide, citric acid or lactic acid.

* This is not an exhaustive list of guidance for the safe use of pesticides in relation to the unique nature of schoolsites and children's health.