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1.0 Introduction

Consistent with federal and State of California requirements, IUSD’s Maintenance & Operations Department follows a Progressive Pest Management (PPM) program for landscape and building maintenance on IUSD maintained property and campuses. The PPM program incorporates the use of prevention strategies, non-chemical controls, and chemical controls (i.e., pesticides). A pesticide is any substance, or mixture of substances, used for defoliating plants, regulating plant growth, or for preventing, destroying, repelling, or mitigating any pest that may be detrimental to vegetation, humans or animals. By definition, whether the chemical is organic or synthetic, it is still a pesticide if the intent is to treat for a pest. The guiding principles of the program and a pest control ranking overview are provided below:

Pest Control Ranking Overview	
<div style="display: flex; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small; margin-right: 5px;">Hazard level & use limitations</div> <div style="text-align: center;"> <div style="display: flex; justify-content: space-between; width: 100%;"> ← Use frequency & quantity → </div> <div style="margin: 10px 0;"> <div style="background-color: #00b050; color: white; padding: 10px; text-align: center; width: 80%; margin: 0 auto;">Preferred Methods</div> <hr style="border: 0.5px solid black;"/> <div style="background-color: #ff0000; color: white; padding: 10px; text-align: center; width: 60%; margin: 0 auto;">Emergency Exception</div> <hr style="border: 0.5px solid black;"/> <div style="background-color: black; color: white; padding: 5px; text-align: center; width: 40%; margin: 0 auto;">Banned</div> </div> </div> </div>	<ul style="list-style-type: none"> Non-chemical practices to prevent or minimize development of conditions requiring intervention. Use of approved exempt very low hazard, organic products following specified procedures at discretion of trained staff.
	<ul style="list-style-type: none"> Use only approved, low, moderate or high hazard products when necessary to protect public health and undue economic impact. Use only after obtaining supervisor approval. Notify PMC when high hazard products used.
	<ul style="list-style-type: none"> Prohibited from use.

IUSD Progressive Pest Management Guiding Principles

1. Use pest prevention practices to avoid the use of pesticides or other pest control methods.
2. Use non-chemical methods as a first choice for pest control.
3. Limit the use chemical methods (i.e., pesticides) to situations where non-chemical methods fail.
4. Emphasize the use of exempt, very low hazard, organic pesticides when chemical controls are needed, and only use more hazardous pesticides as necessary to protect public health and undue economic impact.
5. Limit exposure to pesticide applicators and nearby persons (especially where children, faculty and the general public congregate) and ensure proper notification before and after use.
6. Use only pesticides that have been approved by the IUSD Pest Management Committee (PMC), which includes representation from community stakeholders.

Further elaboration and guidance regarding these principles is contained in the sections that follow. A summary “playbook” of how IUSD developed this program is provided in Appendix A.

2.0 Pest Control Protocols

IUSD prioritizes prevention and non-chemical control measures by following a systematic approach that uses extensive knowledge about pests and their hosts, such as infestation thresholds, life histories, and environmental requirements to compliment and facilitate biological and other natural control of pests. Pest control flowcharts and training resources are specifically developed for each types of pest. These materials contain:

1. Appropriate prevention strategies;
2. Monitoring protocols with associated tolerance/action thresholds;
3. Tiered application of control measures moving from non-chemical methods, to low hazard pesticides and to higher hazard pesticides; and
4. Specific use requirements and restrictions for control methods and products.

3.0 Prevention Strategies (Preferred)

IUSD implements practices to prevent the development of pest conditions that may require control. Examples include selecting plants compatible with a site's environment, maintaining good housekeeping practices, sealing points of entry to buildings, using organic fertilizer, using beneficial insects, and applying landscape design adjacent to buildings that reduce pest habitat. The “California Academy of Sciences Integrated Pest Management Plan (10/7/10)” is used as a reference model for developing IUSD specific practices.

4.0 Non-Chemical Control Methods (Preferred)

IUSD implements non-chemical (and generally non-controversial) biological, cultural, and physical methods as a first choice to control pests. Examples include using deterrents, elimination of attractive sources, and physical removal of pests. The “California Academy of Sciences Integrated Pest Management Plan (10/7/10)” is used as a reference model for developing IUSD specific practices.

5.0 Chemical Control Methods (Preferred, Exception, Banned)

IUSD uses chemical controls (i.e., pesticides) only when non-chemical methods fail to provide adequate control. Pesticide selection criteria and related use restrictions are provided in Figure 1. The Pest Management Committee (PMC) reviews and approves specific pesticide products for specific uses within IUSD. Approved and banned products and related use restrictions are maintained in the IUSD Pesticide

Inventory. IUSD, and its retained vendors, can only use approved pesticides from this list, which has been developed in conjunction with the PMC.

5.1 Pesticide Rankings

The IUSD Pesticides Inventory groups pesticides as follows:

- **Preferred**. Approved pesticides can be used at discretion of trained IUSD staff when non-chemical methods are not successful. These include products that are:
 1. California Healthy Schools Act Exempt (CA HSA exempt); or
 2. Both a) San Francisco Environment tier III (lowest) hazard, and b) Environmental Protection Agency (EPA) signal word category IV (very low toxicity).
- **Exception**. Approved pesticides can only be used after non-chemical and “preferred” pesticide methods are not successful, and when needed to protect risks to public health or to avoid undue economic impact. They can only be used with prior approval from an IUSD pest control supervisor, and in the case of highest hazard products, the PMC must be specifically notified upon each use. This group includes non CA HSA exempt products that are:
 1. Both SF Environment tier III (lowest) hazard and EPA signal word category III (low toxicity, “caution”);
 2. Both SF Environment tier II (moderate) hazard and EPA signal word category II (moderate toxicity, “warning”); and
 3. Both SF Environment tier I (highest) hazard and EPA signal word category I (high toxicity, “danger”).
- **Banned**. Listed pesticides are prohibited from use within IUSD. Determinations are made by the Pest Management Committee.

For both “preferred” and “emergency exception” pesticides, preference is given to the selection of organic based pesticides certified by the Organic Materials Review Institute (OMRI) or an equivalent certifying body. Likewise, preference is given to products specifically listed on the current SF Environment Reduced Risk Pesticides list.

Provisions for the use the highest hazard products are necessary to prevent IUSD from being vulnerable to infestations, loss of plant materials, diminished use of facilities, and risks to public health.

Some non-chemical methods may be assigned to higher hazard ranking categories based upon the judgment of the PMC.

5.2 Ranking Resources

IUSD ranks chemical hazards primarily using the following resources:

1. California Healthy Schools Act Exempt Flowchart (9/13/16)
 - a. http://apps.cdpr.ca.gov/schoolipm/hsa_flowchart.pdf
 - b. Incorporates Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) section 25b minimum risk pesticides criteria.
 - c. Gives preference to gel/past bait formulations self contained bait traps due to their reduced risk of exposure to people.
2. San Francisco Environment “Guide to San Francisco’s Reduced Risk Pesticide List (9/1/13)”
 - a. https://sfenvironment.org/sites/default/files/fliers/files/sfe_th_guide_to_reduced_risk_pesticide_listposted.pdf
 - b. The SF Environment criteria incorporate Clean Water Act, California Proposition 65, and EPA signal word criteria.

- c. SF Environment also maintains a current reduced risk pesticides list, which lists products specifically identified for use by San Francisco governmental agencies.
3. EPA Office of Pesticide Programs Label Review Manual, Chapter 7 (July 2014)
 - a. <https://www.epa.gov/pesticide-registration/label-review-manual>
 - b. Defines signal word category criteria.
 - c. EPA categories IV and III are both within SF Environment “lowest” hazard category for toxicity EPA categories II and I are incorporated into SF Environment “moderate” and “highest” hazard categories, respectively.
4. Pesticide Research Institute (PRI) “Pesticide Product Evaluator” Database
 - a. <http://www.pesticidresearch.com/site/evaluator/>
 - b. Evaluates products and determines those that are CA HSA Exempt.
 - c. Evaluates products per the SF Environment criteria.
 - d. Indicates EPA signal words categories.

6.0 Data Tracking & Management

IUSD tracks the application of pest control practices as follows:

- Preferred Use Form. This form is used to help manage and track pest control applications and outcomes using “preferred methods” in the ranking protocol (see Appendix B).
- Exception Use Form. This form is used to help manage and track pest control applications and outcomes using “emergency exception” products in the ranking protocol. This form also documents supervisor approval for use of these products and documents notification of the PMC in the event of the use of category 6 “high hazard” products (see Appendix C).
- Pest Control Inventory (.xlsx). This tool is used by IUSD to manage the listing of approved practices/products, manage the listing of banned practices/products, and compile data on the use of approved practices/products.

Revision History:

- 9/11/17—Initial program.
- 1/18/19—Addition of “Section 6: Data Tracking & Management”; Appendices A, B, C; and limited edits to other sections.
- Future--Incorporate section specifying applicator licensing and posting/notification protocols.

Figure 1: IUSD Pesticide Ranking Categories

Goal: To support a reduction in the quantity of hazardous chemicals used and to shift use to less hazardous alternatives.

Ranking Category		Criteria Summary <i>Must meet all criteria, select most stringent if conflict. Organic certified and SFE listed are preferred, not required.</i>			Use Restriction Summary <i>Product specific restrictions and use guidelines may also apply.</i>
		CA HSA Exempt	SFE/PRI Category	EPA Label Category	
Hazard level & use limitations 	1-Preferred <i>(non-chemical)</i>	Non-chemical control measures (biological, cultural, and physical)			<ul style="list-style-type: none"> • Use of approved products following specified procedures at discretion of trained IUSD staff.
	2-Preferred <i>(exempt-very low hazard)</i>	Yes	3 (low)	4 (very low) optional "caution"	
	3-Preferred <i>(exempt-low, mod, high haz)</i>	Yes No	3,2,1 3	4,3,2,1 4	
	4-Exception <i>(low hazard)</i>	No	3 (low)	3 (low) "caution"	<ul style="list-style-type: none"> • Above restrictions. • Use only when necessary to protect public health and undue economic impact. • Use only after obtaining supervisor approval.
	5-Exception <i>(moderate haz)</i>	No	2 (moderate)	2 (moderate) "warning"	
	6-Exception <i>(high haz)</i>	No	1 (high)	1 (high) "danger"	<ul style="list-style-type: none"> • Above restrictions. • Notify PMC when used.
Banned		Determination made by the PMC.			<ul style="list-style-type: none"> • Prohibited from use.

Appendix A

(IUSD PPM Playbook)

Appendix B
(Preferred Use Form)

Appendix C
(Exception Use Form)