

**EcoWise Certified**

**Standards for IPM Certification**  
**in**  
**Structural Pest Management**

**for**  
**Structural Pest Control Board Branch 2 Licensees**

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**EcoWise Certified  
Standards for IPM Certification in Structural Pest Management  
Structural Pest Control Board Branch 2 Licensees**

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## INTRODUCTION

The following standards form the core of the EcoWise Certified IPM certification program that began in January 2006 in the San Francisco Bay Area and greater Sacramento area. EcoWise Certified is a project of the Association of Bay Area Governments (ABAG), and was founded in partnership with the Bio-Integral Resource Center (BIRC,) the Natural Resources Defense Council (NRDC), and the Sacramento Stormwater Program.

These standards were developed by BIRC, in collaboration with industry, NGO and government stakeholders, under a grant funded by the State Water Resources Control Board.

### **Summary of the EcoWise Certified IPM Certification Program**

- The program certifies an IPM service within a pest control company or branch office. Businesses may offer non-certified services alongside certified IPM services, as long as the required records are separated.
- The program also certifies individual Branch 2 field representatives and operators through a written exam. Each company or branch office must have on staff at least one certified individual to oversee its EcoWise Certified IPM service.
- Within a year of filing an application that includes a written IPM protocol for a specific pest, companies or branch offices must submit documentation for 10 IPM service visits for at least 3 different customer sites. These IPM service visits must follow the *Standards*, and record the required information on appropriate forms.
- After applicants document the required service visits, the EcoWise Certified Program Manager and an EcoWise Certified Field Inspector review the records. The Inspector performs field evaluations to determine if applicants qualify for certification. The EcoWise Certified Program Manager then makes the final decision on granting certification.
- Both company and individual certificate holders must renew their certification after 3 years.

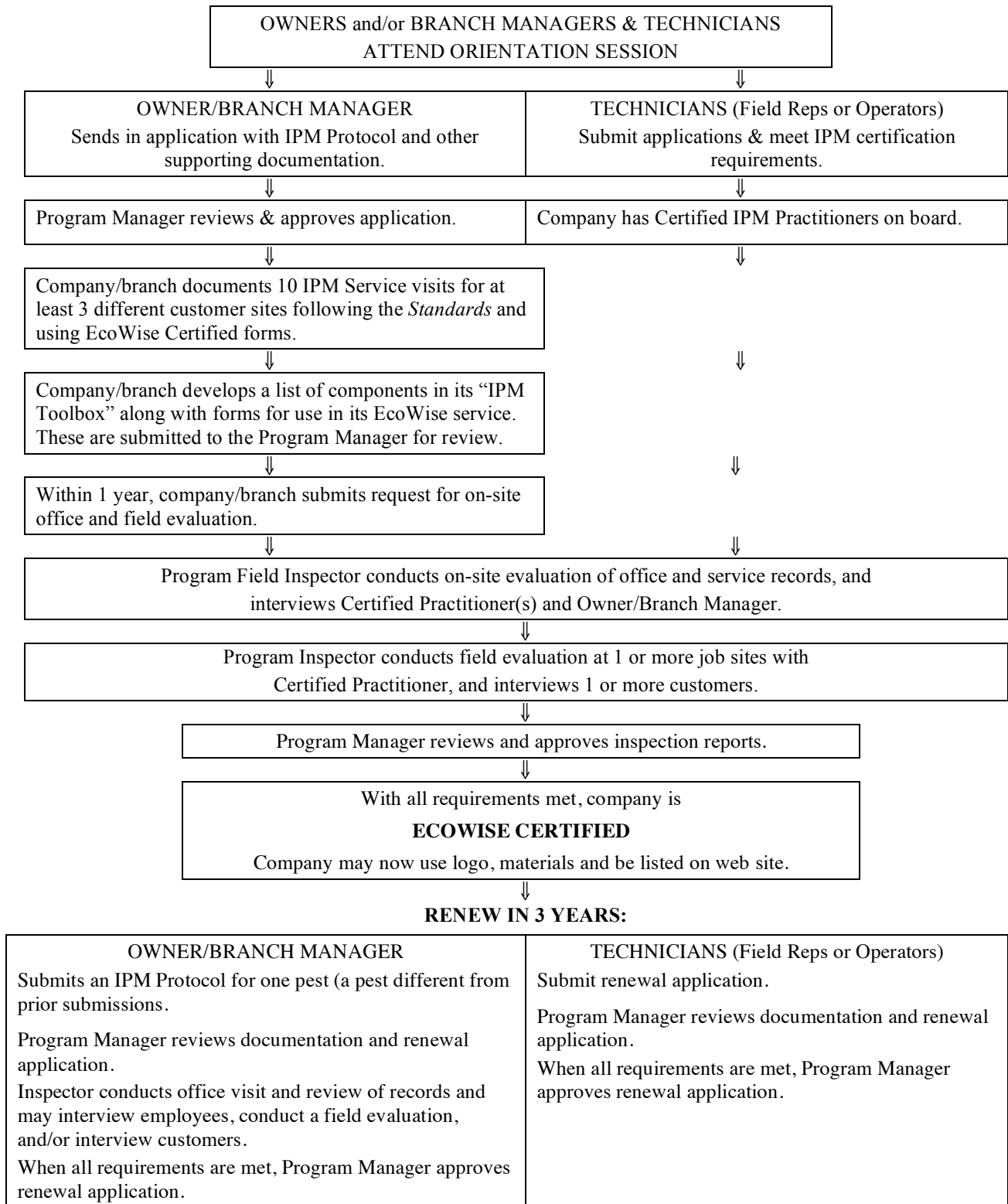
### **Guidelines Covered in the *Standards***

- Requirements for company or branch office certification
- Knowledge requirements for individual certification
- How to provide an EcoWise Certified IPM service
- Recordkeeping in an EcoWise Certified IPM service
- Applying a pesticide in an EcoWise Certified IPM service, when necessary

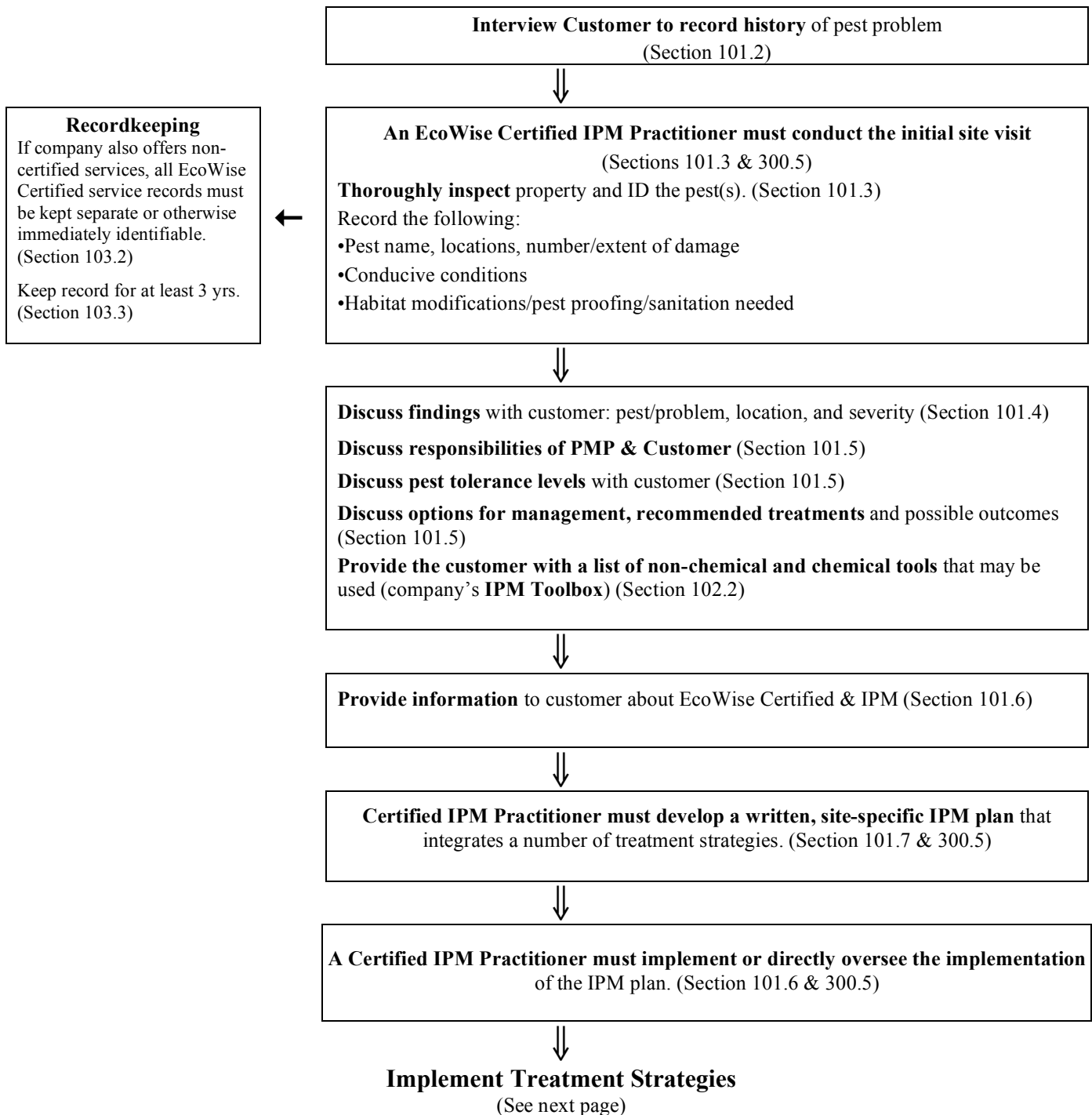
### **Reviewing the *Standards***

We invite you to comment on the *Standards*. Specific suggestions are welcome and will help us to hone the *Standards* into a more practical and effective document.

## OUTLINE OF ECOWISE STRUCTURAL IPM CERTIFICATION PROCESS



## OUTLINE OF AN ECOWISE CERTIFIED IPM SERVICE



**Recordkeeping**  
 Record all treatment strategies used, non-chemical and chemical. (Section 103.4)  
 Provide cust. w/inspection records and recommendations with in a week after each visit. (Section 101.8 & 103.5)

**Primary treatment strategies are non-chemical**, such as:

- Sanitation
- Harborage reduction
- Physical, mechanical, cultural & biological controls

If these strategies prove inadequate, unsatisfactory, or are not economically viable, chemical control strategies may be warranted. (Section 102)



**If pesticides are used**, they must be applied according to need and not calendar schedule. (Section 102.3)

**Pesticides used must meet the EcoWise Certified criteria.** (for details, see Section 102.2 and Appendix A)

**Risk is minimized** (Section 102.4):

- Only apply as a directed treatment to voids or inaccessible areas
- As a spot treatment outdoors
- As spot treatment indoors with pesticides that are exempt from registration in California
- Contained in a bait station
- As a crack & crevice treatment
- No fogging in the interiors of structures where people live or work
- No perimeter treatments around the outside of structures. *Exceptions:* pesticides that are exempt from registration in California.



**Recordkeeping**  
 Information about deviations must be transmitted to the Program Manager within 10 days of application & a copy retained for review during normal audit. (Section 104.1)

**Deviation from Section 102.3 or 102.4, the Pesticide Application Standard**

If pesticide application methods are used that are inconsistent with Section 102.3 or 102.4, the PMP must obtain a written acknowledgement from the customer, describe the deviation in writing, document the rationale and how it can be avoided in the future. (Section 104)



**Monitor, evaluate, fine-tune** the treatment process. (Section 101.7.d)

**For on-going accounts:**

**Recordkeeping**  
 Retain monitoring records. (Section 103.1 & 103.3)

Establish a regular, periodic monitoring program, appropriate to the site, to gather info to guide the pest management process.  
 A Certified IPM Practitioner must visit the site at least once a year. (Section 101.9)





## DEFINITIONS

**Integrated pest management (IPM):** IPM is a science-based strategy and decision-making process that provides effective, long-term pest control while emphasizing pest prevention and the use of non-chemical pest management practices. At its core, IPM includes the following activities:

- Inspection, monitoring and record-keeping are used to determine if thresholds for acceptable pest levels have been exceeded and to select the location, timing, and type of management strategies needed to successfully manage pests.
- A partnership is formed with the customer to facilitate management of pests.
- Appropriate and site-specific treatments are selected from educational, cultural, manual, mechanical, physical, biological, and chemical strategies. They are used within an integrated program to achieve long-term solutions that minimize hazards to human health and the environment.
- Reduced-risk chemical controls are included in the treatment program when non-chemical methods are insufficient to solve the pest problem in an effective and affordable manner.

**Action level:** the number of pests or amount of damage that triggers action to manage a pest in order to prevent pest numbers or damage from exceeding the tolerance level

**Bait:** any combination of a pesticide active ingredient with other inert materials, designed to induce a target pest to ingest or otherwise interact with the combination

**Calendar scheduled treatments:** treatments that are scheduled on a regular, calendar basis regardless of whether pests are present or their numbers have exceeded the action level

**Certified IPM Practitioner:** any person who has fulfilled the requirements set out in the *Standards*

- Each operation or branch office offering an EcoWise Certified IPM Service must employ at least one EcoWise Certified IPM Practitioner
- The Certified IPM Practitioner must implement or directly supervise the implementation of the EcoWise Certified IPM service
- The Certified IPM Practitioner must provide the initial site assessment and IPM plan for the customer
- The Certified IPM Practitioner must implement the IPM plan or directly supervise the plan's implementation.

**Certified IPM Service:** a pest management service that complies with the *Standards* and is offered by an operation or branch office that has fulfilled the requirements for certification set out in the *Standards*

**Certifying agency:** this certification program is a project of the Association of Bay Area Governments (ABAG).

**Crack and crevice treatment:** application of small amounts of pesticides into cracks and crevices in which pests hide or through which they may enter a building. Such openings commonly occur at expansion joints in a structure, between different elements of construction, and between equipment and floors. These openings may lead to voids such as hollow walls, equipment legs and bases, conduits, motor housings, and junction or switch boxes. These treatments shall not be readily accessible after application.

**Direct supervision:** technicians are directly assigned tasks and presented with treatment protocols produced by a Certified IPM Practitioner; the Certified IPM Practitioner monitors completion of tasks, time needed for completion, tools and materials used, and records kept; the Certified IPM Practitioner must be available to communicate by phone when technician is performing an EcoWise Certified IPM service; the Certified IPM Practitioner must conduct the initial site assessment and, for on-going accounts, must visit the site at least once a year

**Directed treatment:** use of equipment and techniques to limit pesticide applications to a defined target area

**Field Inspector:** any person accredited by the certifying agency for the purpose of performing inspections of an applicant's records and field work in order to evaluate the applicant and make recommendations on eligibility for certification

**Fogging:** a pesticide application technique in which a pesticide is released as an omni-directional aerosol spray of very fine particles that is designed to optimize coverage of surfaces throughout the treated environment

**Insect growth regulator (IGR):** a compound that can disrupt normal growth and development processes in insects. Currently there are 2 classes of IGRs:

- Juvenile hormone analogs which can prolong larval or nymphal stages, prevent or curtail pupation, or create sterile adults
- Chitin synthesis inhibitors which disrupt the normal molting process in insects

**IPM Toolbox:** the list of non-chemical and chemical tools that an EcoWise Certified company will use in the course of a Certified IPM Service. A company's IPM Toolbox must be reviewed and approved by the EcoWise Certified Program Manager during the application process.

**Orientation meeting:** an introductory meeting to familiarize prospective applicants for certification with the *Standards* and the certification process

**Pest(s):** a general term that includes problem insects, mites, birds, mammals, weeds, and other organisms. Organisms become "pests" when their numbers are high enough to be damaging, a health risk, or a serious nuisance

**Pest conducive conditions:** conditions that allow or encourage pests to enter a building and then to remain there

**Pest control:** mitigating or eliminating pests by a variety of non-chemical and/or chemical techniques

**Pest management:** see pest control

**Pest management professional (PMP):** a pest control operator, a field representative, or applicator

**Pest tolerance level:** the number of pests or amount of damage the customer or the site can tolerate determined in consultation with the Certified IPM Practitioner; this level may also be determined by laws and regulations

**Pesticide:** any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest. Pests can be insects, mice and other animals, unwanted plants (weeds), fungi, or microorganisms like bacteria and viruses. Though often misunderstood to refer only to insecticides, the term pesticide also applies to herbicides, fungicides, and various other substances used to control pests. Under United States law, a pesticide is also any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.

**Pesticide, exempt:** a product that contains specific active ingredients that are exempt from federal registration under the Federal Insecticide, Fungicide and Rodenticide Act (section 25b) and California registration under the California Code of Regulations, Title 3, Chapter 2, Division 6, Section 6147. The product label should list all active and inert ingredients. All active ingredients must be on the 25(b) list ([http://www.epa.gov/oppbppd1/biopesticides/regtools/25b\\_list.htm](http://www.epa.gov/oppbppd1/biopesticides/regtools/25b_list.htm)), and all inert ingredients must be on the category 4(a) list (<http://www.epa.gov/oppbppd1/biopesticides/regtools/25b/25b-inerts.htm>).

**Perimeter treatment:** a treatment of the exterior perimeter of a building where the structure is completely or nearly completely encircled by a continuous pesticide application.

**Pheromone:** a chemical secreted by an animal that affects other animals of the same species

**Space spray:** see fogging

**Spot treatment:** an application of a pesticide to a discrete, relatively small area limited to the immediate vicinity of a clearly identified pest problem, such as the pest itself, an entry point, or a nest. A spot treatment shall be no larger than necessary to be effective, and in any case shall be no larger than 2 feet square.

**Tamper-resistant bait station (for rodents):** Tamper-resistant bait stations are of durable fabrication and meet the following criteria:

1. resistant to weather
2. strong enough to prohibit entry by large non-target species
3. equipped with a locking lid and/or secured rebaiting hatches
4. equipped with entrances that readily allow target animals access to baits while denying access to larger non-target species
5. capable of being anchored easily and securely to resist efforts to move the container or to displace its contents
6. equipped with an internal structure for securely containing baits
7. made in such a way as not to be an attractive nuisance
8. capable of displaying proper precautionary statements in a prominent location

**Tolerance level:** see Pest tolerance level

**Treatment:** applications of materials *or* procedures designed to alleviate pest problems

**Void:** the enclosed, empty space inside hollow elements of equipment or between walls, between ceiling and floor, between floor and cabinet and other similar structural elements

## **WHAT IS CERTIFIED BY THIS PROGRAM**

1. This program certifies an IPM Service within a pest control business. Pest control businesses are encouraged to offer only IPM services to their customers, but operating a separate EcoWise Certified IPM Service alongside non-certified pest control services is permitted, as long as the required records are separated. Note: certified and non-certified services cannot be performed simultaneously at one site.
2. This program certifies IPM services only for Branch 2 (general) pests. This does not include Branch 1 (fumigation) or Branch 3 (termites).
3. This program also certifies individual Branch 2 Field Representatives or Operators as Certified IPM Practitioners.

## **PART 1. PEST MANAGEMENT STANDARD**

### **Preamble**

Integrated Pest Management (IPM) is a decision-making process that guides pest managers toward efficient, effective, and sustainable pest management that emphasizes pest prevention and non-chemical methods. There are many definitions of IPM; however, it is the decision-making process backed up by thorough monitoring and record keeping and the integration of a variety of control strategies that defines IPM.

### **❖ 100. General**

**A structural IPM program emphasizes 3 fundamental elements:**

1. **Pest Prevention.** IPM seeks to suppress pest reproduction and to identify and eliminate potential pest access, shelter/habitat, and availability of food and water. In long-term accounts, regular,

periodic monitoring for pests and pest conducive conditions is conducted in order to identify problem areas and prevent small infestations from becoming large ones.

Pest management professionals (PMPs) must use management practices to prevent pests including, but not limited to

- a. Customer education
- b. Removal of pest habitat, sources of food and water, and breeding areas
- c. Prevention of access to structures
- d. Management of environmental factors, such as temperature, light, humidity, atmosphere, and air circulation, to prevent pest reproduction and serve as a deterrent to pest infestation.

- 2. Integration of Multiple Management Strategies and Tools.** A variety of pest control strategies and tools are integrated into a comprehensive program to manage the pest.

Management strategies may include, but are not limited to, the following:

- a. Providing the customer with information about behaviors, conditions, and policies that allow pests access to the site, food, water, and habitat
- b. Mechanical or physical controls including, but not limited to, traps, vacuuming, steam cleaning, or physical barriers
- c. Horticultural controls including, but not limited to, changing irrigation practices, treatment or removal of plants attracting pests and/or providing access to structures
- d. Biological controls including the use of predators, parasitoids, or pathogens to control the pest
- e. If preventive measures along with the practices in paragraphs ‘a’ through ‘d’ directly above are insufficient to prevent or control pests, chemical controls may be used. Chemical controls must be applied according to the Pesticide Application Standard set forth in ❖102.

- 3. An IPM Partnership Using a Systems Approach.** Integrated pest management must take into account and be effectively coordinated with other relevant activities and programs that operate in and around a facility or site. Whenever possible, a pest management perspective should be incorporated in procedures and plans involving cleaning, waste management, food service and handling, storage, repair and alteration, and design and construction. In order to accomplish this, the PMP must form a partnership with the customer to provide education on pest management issues and to gain cooperation.

### ❖101. IPM Performance Standard

The PMP shall demonstrate the following practices at each site:

1. **Establish a partnership** with the customer that facilitates customer education, participation in problem solving, and feedback; the PMP should take all opportunities to continue communication with the customer and to provide on-going education for the customer.
2. **Record a detailed history** of the pest problem(s) from the customer, either on the phone or in person:
  - a. Type of problem(s) and/or pest(s)
  - b. Evidence of problem(s) and/or pest(s)
  - c. Location of problem(s) and/or pest(s)
  - d. Actions already taken by the customer (or prior PMP) and results

- e. Incidents, actions, weather conditions, etc. that occurred prior to or around the time the pest problem was first noticed that might be linked to the pest infestation
3. **Thoroughly inspect the property.** The initial site assessment must be performed by a Certified IPM Practitioner.
 

Inspections must, at a minimum, include the following:

    - a. **Identify pest(s);** if the pest is unfamiliar, research and understand the pest's biology and habits and how they impact management of the pest and keep a specimen for reference; mis-identification can result in wasted and ineffective treatments.
    - b. **Prepare a written list/map of**
      - i. Key pest(s) (using both common and Latin names) discovered and locations
      - ii. Number of pests, extent of problem, and/or amount of damage
      - iii. Conditions conducive to pest infestations
      - iv. Habitat modifications required
      - v. Pest-proofing/repairs needed inside and outdoors
  4. **Discuss inspection findings with the customer** including pest/problem, location, and severity.
  5. **Discuss management strategies with the customer** and discuss the PMP-customer relationship that will be necessary to solve a pest problem.
    - a. Discuss the responsibilities of the PMP and the responsibilities of the customer.
    - b. Discuss pest tolerance levels and the action levels that trigger treatment.
      - i. If appropriate, discuss how regulations, aesthetics, budgets, and public health may affect tolerance levels.
      - ii. Discuss the advantages (if applicable) of higher thresholds relative to pesticide use.
    - c. Provide the customer with the list (the company's IPM Toolbox that has been reviewed and approved by the EcoWise Certified Program Manager) of non-chemical and chemical IPM tools that may be used at the customer site.
    - d. Discuss options for management and the PMP's recommended treatment strategies.
    - e. Discuss the possible outcomes (if known) of the treatment methods, how long they might take to impact the pest, what to expect, estimated cost.
  6. **Provide the customer with information about IPM and the EcoWise Certified Program.**
    - a. Discuss the emphasis of IPM (e.g., using knowledge of pest biology, monitoring, trapping, baiting, pest exclusion, partnership with PMP, all of which lead to effective, long-term pest control and minimal pesticide use).
    - b. Discuss calling the EcoWise Certified Program Manager for questions about the EcoWise Certified Program or complaints about EcoWise Certified service providers.
  7. **Develop a written, site-specific IPM Plan** that integrates a number of treatment strategies. The plan must be developed by a Certified IPM Practitioner. The Certified IPM Practitioner must implement the plan, or the Certified IPM Practitioner can directly supervise the implementation of the plan.
 

The plan should

    - a. Focus on solving pest problems using prevention, other long-term solutions, and lowest risk strategies and products
    - b. Select, integrate, and apply appropriate IPM treatments to limit availability of food and habitat, reduce pest reproduction, limit pest access to the structure, and directly suppress the pest

- i. Choose treatment strategies that are appropriate to the pest and the site and that include an appropriate mix of customer education, physical/mechanical controls, horticultural controls, biological controls, and when necessary, appropriate chemical controls.
- ii. Fit treatments to the customer's needs, the site, and the surrounding environment
- c. Apply treatments at the proper time in the pest's life cycle for maximum effectiveness
- d. Monitor, evaluate, and fine-tune the treatment process

The IPM Plan should include the following:

- a. The proposed materials and equipment to be used
  - b. The proposed methods for monitoring and detection
  - c. The service schedule for the building or site
  - d. The description of any structural or operational changes needed to facilitate pest control
8. **Provide the customer with inspection records and recommendations** within a week after each visit.
9. **For on-going accounts, establish a regular, periodic monitoring program**, appropriate to the site, to gather information used to guide the pest management process; subsequent monitoring may be less detailed but shall at a minimum cover the following:
- a. An evaluation of the success of actions taken by the customer and the PMP
  - b. A check of problem areas
  - c. An inspection for new problems
  - d. Communication to update the customer
  - e. Assessment of customer's satisfaction with treatment

For on-going accounts, a Certified IPM Practitioner must visit the site at least once a year.

10. **Maintain written records** of the pest management process (see ❖103. Recordkeeping Standard)

### ❖102. Pesticide Application Standard

The primary methods of pest management are non-chemical strategies such as sanitation, harborage reduction, and physical, mechanical, cultural, and biological controls. If these strategies are deemed insufficient, unsatisfactory or are not economically viable, chemical control strategies may also be warranted. In that case, the following apply:

1. **All pesticides shall be applied according to the label** and in compliance with U.S. Federal and California State Laws and Regulations, including acquiring and maintaining the proper licenses and meeting pesticide reporting requirements.
2. **Pesticides used in an EcoWise Certified IPM Service shall meet the EcoWise Certified Pesticide Criteria** (see Appendix A), or must be exempted by the Program Manager. The Program Manager may exempt pesticides that do not meet EcoWise Certified criteria if the formulation is 1) contained within a bait station, 2) applied in a manner in which there is reasonable certainty of no human or other non-target exposure, 3) applied in a manner in which contact with surface or groundwater is unlikely.
3. **Pesticides shall be applied according to need and not by calendar schedule.** (Note: this does not in any way preclude monitoring or other interactions with the customer that may occur on a regular, calendar basis.)
4. **Pesticides shall be applied in such a way as to minimize the risk** to non-target organisms and the environment, including water quality.

- a. When a pesticide is necessary, it shall be applied with a precise application technique, in the smallest area, using the minimum quantity of pesticide necessary to achieve control. A pesticide shall only be applied
  - i. As a directed treatment to a void or other inaccessible area, or to other areas humans would not normally contact;
  - ii. As a spot treatment outdoors;
  - iii. As a spot treatment indoors, if the pesticide product used is exempt from registration in California {(3 CCR 6147) Title 3 (FAC), Division 6, Chapter 2, Section 6147. Exempted Pesticide Products.} This includes products that meet the above regulation but are registered nevertheless. The above California regulation is more stringent than the U.S. EPA FIFRA 25(b) list;
  - iv. Contained in a bait station; or
  - v. As a crack and crevice treatment.
- b. Perimeter spray treatments around the outside of structures are prohibited. The only exception to this is if the pesticide product used is exempt from registration in California {(3 CCR 6147) Title 3 (FAC), Division 6, Chapter 2, Section 6147. Exempted Pesticide Products}. This includes products that meet the above regulation but are registered nevertheless. The above California regulation is more stringent than the U.S. EPA FIFRA 25(b) list.
- c. Pesticides shall be applied under safe conditions. An applicator, prior to and while applying a pesticide, shall evaluate the equipment to be used, meteorological conditions (including predicted rainfall), the property to be treated (including irrigation and sprinkler systems) and the surrounding properties to determine the likelihood of harm or damage to non-targets. Notwithstanding that substantial drift or migration of the pesticide will be prevented, no pesticide application shall be made or continued when
  - i. There is a reasonable possibility of contaminating bodies or clothing of persons not involved in the application process; or
  - ii. There is a reasonable possibility of damage to, or contamination of, non-target plants, animals, or other public or private property, including water running off or running near a treated area during or any time after the treatment.
- d. Fogging with pesticides in the interior of structures where humans live or work shall not be used. Note that the point-source application of insect growth regulators is not categorized as fogging.
- e. If rodenticides are necessary, they shall be placed in tamper-resistant bait stations that are anchored to the substrate *except* when used for baiting in secure or locked areas, inaccessible voids, or sewer lines.

### ❖ 103. Recordkeeping Standard

1. Records must be maintained to disclose activities of the certified operation in sufficient detail as to be readily understood and to demonstrate compliance with the *Standards* for IPM Certification described in this document. A transcription of original records to an EcoWise Certified service form is sufficient to meet inspection requirements. (See ❖200.5, ❖201.6, and ❖205.1)
2. When an EcoWise Certified IPM service is offered alongside a non-certified service, records must be kept separately or be otherwise easily identifiable.
3. Records must be maintained for a minimum of 3 years.

4. Records covering pest management must document the practices in ❖100 through ❖102 and ❖104 along with any additional information the EcoWise Program Manager deems necessary. Type and number of pest control devices (e.g., snap traps, glue boards) and type and amount of pesticide must be recorded.
5. Copies of inspection records and recommendations must be provided to customers within a week after each visit. This information must be recorded on EcoWise forms or forms that document the same information.

#### **❖104. Deviation from Pesticide Application Standard**

1. In rare instances, a business offering an EcoWise Certified IPM Service may enter into an IPM service contract with a customer and then, in consultation with the customer, choose to offer methods of pesticide application inconsistent with the Pesticide Application Standard Sections ❖102.3 and ❖102.4. In this event, the business must do the following:
  - a. Obtain from the customer written acknowledgement of the deviation from the Pesticide Application Standard (see Appendix B for an example of a written acknowledgement form)
  - b. Describe the deviation in writing and document a rationale for the deviation and how it can be avoided at the site in the future
  - c. Transmit the above information to the EcoWise Certified Program Manager within 10 business days from the application and maintain a copy for review by the Field Inspector during the normal audit period

Continuous and/or unreasonable deviations from the Pesticide Application Standard, as determined by the EcoWise Certified Program Manager, may present grounds for revocation of certification.

#### **2. Emergency Situations**

In a public health emergency, an officially declared emergency, or under State- or Federally-mandated control programs, when PMPs must comply with local, State and Federal laws or mandates that may be in conflict with the Pesticide Application Standard, ❖102, their certification will not be affected and a Written Acknowledgement Form for Deviation from ❖102: Pesticide Application Standard would not need to be submitted.

#### **❖105. Discontinuation of EcoWise Certified IPM Service**

If a business offering an EcoWise Certified IPM Service decides, in consultation with the customer, to discontinue the EcoWise Certified service and begin a non-certified service, the business must include a note in the customer's file. The notation should explain the reason for the change, if possible.

## **PART 2. CERTIFICATION OF ECOWISE CERTIFIED IPM SERVICES**

#### **❖200. General EcoWise Certification Requirements for Businesses**

Businesses seeking to receive or maintain EcoWise certification must:

1. Comply with the Pest Management Standard, ❖100 through ❖104
2. Agree to use only pesticides that meet the EcoWise Certified Pesticide Criteria (see Appendix A) in an EcoWise Certified service.
3. Be licensed for Branch 2 work by the Structural Pest Control Board



4. Be registered with the County Agricultural Commissioner in the counties in which the applicant intends to offer EcoWise Certified IPM services and be in good standing with each Agricultural Commissioner
5. Employ at least one IPM-certified field representative or operator (Certified IPM Practitioner—see ❖300 through ❖306, for qualifications) to implement or directly supervise the implementation of the EcoWise Certified service. Businesses with multiple offices must employ at least one Certified IPM Practitioner in each branch office applying for certification. The Certified IPM Practitioner must provide the initial site assessment and IPM plan for the customer and implement the plan or directly supervise the plan's implementation. For on-going accounts, the Certified IPM Practitioner must visit the site at least once a year.
6. Document (using EcoWise Certified forms) 10 IPM service visits for at least 3 different customer sites in the last 2 years and/or in the year following application for certification. Green Shield Certification will be accepted in lieu of this documentation.
7. Prepare an IPM Protocol for one specific pest.
8. Prepare a list of non-chemical and chemical tools (IPM Toolbox) the company/branch office proposes to use in an EcoWise Certified service.
9. Permit on-site visits to place of business to interview staff and review records. If applicant is Green Shield certified, office visit and records review requirement is waived.
10. Arrange field evaluation of the EcoWise Certified IPM Service at a customer site and arrange interviews with customers. If applicant is Green Shield certified, field evaluation requirement is waived.
11. Applicants using Green Shield certification as a basis for qualification must still comply with EcoWise Certified *Standards for IPM Certification in Structural Pest Management*.
12. Renew certification every 3 years
13. Pay renewal fees every 3 years
14. Maintain separate records pertaining to certification and the EcoWise Certified IPM service for a minimum of 3 years

**❖ 201. Application for EcoWise Certification**

1. The applicant must attend the orientation session(s) provided by the certifying agency. Persons required to attend include the field representative(s) or operator(s) wishing to become a Certified IPM Practitioner and either the business owner or branch manager.
2. The applicant must submit an application form and all necessary supporting documentation, along with appropriate fees. For a list of supporting documents see the EcoWise Certified Handbook.
3. The applicant must submit one IPM protocol (using an EcoWise Certified form) for a pest of their choosing that demonstrates knowledge of the IPM process.
4. For businesses with multiple offices, the applicant must submit a separate application for each branch office; each branch office will be separately certified.
5. The EcoWise Certified Program Manager is responsible for reviewing the application and responding to the applicant within a reasonable amount of time. The response must communicate whether the application is complete and whether the IPM Protocol complies with the EcoWise Certified *Standards*.
6. Within a year of filing the business application, the applicant must document at least 10 IPM service visits for at least 3 different customer sites following the EcoWise Certified *Standards*

for IPM Certification and using EcoWise Certified forms. Service visits conducted 2 years prior to and/or up to 1 year after date of application may be used for documentation.

7. The applicant must prepare a list of the non-chemical and chemical tools (the applicant's IPM Toolbox) that will be used in the EcoWise Certified service for review prior to the office visit. This is the IPM Toolbox to be presented to EcoWise customers mentioned in ❖101.5.c.
8. When the applicant has completed the above-mentioned documentation, the applicant must notify the EcoWise Certified Program Manager, who will schedule an office visit and field evaluation to determine whether the applicant qualifies for certification.
9. The applicant may withdraw the application at any time, but will forfeit any costs the certifying agency has incurred up to the time of withdrawal. An applicant who voluntarily withdraws an application prior to the issuance of a notice of non-compliance with certification standards will not be issued a notice of non-compliance. Similarly, an applicant that voluntarily withdraws application prior to the issuance of a notice of certification denial will not be issued a notice of certification denial.

### ❖202. Office Visits and Field Evaluations

1. A qualified EcoWise Certified Field Inspector will conduct the office visit and field evaluation. All office visits must be conducted with the applicant's Certified IPM Practitioner and the company's owner or branch manager. A Certified IPM Practitioner must accompany the EcoWise Certified Field Inspector on any field evaluations.
2. Additional announced office visits, field evaluations, or interviews with customers may be conducted at the discretion of the EcoWise Certified Program Manager.
3. The office visit and field evaluation must gather information to determine the level of compliance with the *Standards for IPM Certification*. The office visit will include a review of and discussion about the techniques, tools, and pesticides to be used in the company's EcoWise Certified service.
4. The office visit and field evaluation must verify that the information submitted in the application accurately reflects the practices used by the applicant.
5. At the conclusion of the office visit and field inspection, the Inspector must conduct an exit interview with an authorized representative of the company's EcoWise Certified IPM service who is knowledgeable about the inspected operation. The purpose of the exit interview is to confirm the accuracy and completeness of the inspection observations and information gathered during the field evaluation and to discuss issues of concern regarding the application for EcoWise certification.
6. The EcoWise Certified Program Manager must provide a copy of the inspection report to the inspected operation within a reasonable time.

### ❖203. Final Determination of Certification

The EcoWise Certified Program Manager is responsible for reviewing the inspection reports, making a final determination regarding full certification, and responding to the applicant within a reasonable amount of time.

### ❖204. Denial of Certification

When an applicant is not in compliance or not able to comply with the *Standards for IPM Certification*, the EcoWise Certified Program Manager must issue a notification of non-compliance that provides 1) a

description of each non-compliance, 2) the facts upon which the notification of non-compliance is based, and 3) the date by which the rebuttal or correction of the non-compliance must occur.

1. Upon receipt of the notice of non-compliance, the applicant may 1) correct the non-compliance and submit supporting documentation, 2) submit information to rebut the non-compliance, or 3) withdraw the application.
2. The EcoWise Certified Program Manager will be available to make suggestions for improvement.
3. If correction of the non-compliance results in the need for an additional on-site inspection or field audit, additional fees will be charged.
4. A notice of denial of certification is issued when a correction of non-compliance is not possible, when an applicant fails to respond to a notice of non-compliance, or when the corrective actions are not sufficient to qualify for certification.
5. A notice of denial of certification must state the reasons for denial and include information about the applicant's right to re-apply for certification or file an appeal of the denial to the certifying agency.
6. An applicant may be denied certification for willfully making a false statement or misrepresenting the applicant's operation.

#### ❖ 205. Renewal of Certification

1. To renew certification, an operation must submit a certification renewal form every 3 years and pay renewal fees.
2. An applicant for certification renewal must prepare and submit a list of the non-chemical and chemical tools that will be used in the EcoWise Certified service for review prior to the office visit.
3. An applicant for renewal must prepare and submit one IPM protocol demonstrating knowledge of the IPM process for a pest that is different from any previous submittals.
4. The EcoWise Certified Program Manager will review the renewal application, responding to the applicant within a reasonable amount of time to arrange for a qualified EcoWise Certified Program Field Inspector to conduct an office visit.
5. During the office visit, the Field Inspector will interview employees, conduct a field site visit, and/or conduct customer phone interviews. All office visits and field evaluations must be conducted with the applicant's Certified IPM Practitioner. In addition, the owner or branch manager is strongly encouraged to be present.

During the office visit, the Field Inspector will review and discuss the following with the applicant:

- a. The techniques, tools, and pesticides currently used in the company's EcoWise Certified service and any planned revisions
- b. What has been done to improve the EcoWise Certified Service and the management of specific pests over the past 3 years
- c. What has been done to improve customer education and communication with customers; renewal applicant must also present any new or altered informational materials, fact sheets, etc. that are being provided to customers
- d. Successes and problems regarding customer satisfaction with the IPM process
- e. Marketing materials used in conjunction with the EcoWise Certified Service
- f. Training activities attended by technical, administrative, and clerical staff involved in providing the EcoWise Certified Service

- g. Any updates on the correction of minor non-compliance issues previously identified by the EcoWise Certified Program Manager as requiring correction for continued certification
  - h. Other information as deemed necessary by the EcoWise Certified Program Manager to determine compliance with the *Standards*
6. The EcoWise Certified Program Manager is responsible for reviewing the inspection reports, making a final determination regarding renewal of certification, and responding to the applicant within a reasonable amount of time.
  7. When a certified operation is not in compliance with the *Standards*, the EcoWise Certified Program Manager must issue a notification of non-compliance that specifies 1) each non-compliance and 2) the date by which the rebuttal or correction of the non-compliance must occur.
  8. Upon receipt of the notice of noncompliance, the applicant may 1) correct the non-compliance or 2) submit information to rebut the non-compliance, or 3) withdraw from the Certification renewal process.
  9. When applicant is not in compliance, the EcoWise Certified Program Manager will be available to make suggestions for coming into compliance.
  10. A notice of proposed revocation of certification is issued when a certified operation fails to take the corrective actions within the prescribed time period.
  11. A notice of proposed revocation of certification must state the reasons for the proposed revocation, the proposed effective date, and the right to appeal to the certifying agency.

**❖206. Loss of Certified IPM Practitioner**

If an operation loses its only Certified IPM Practitioner, the operation must notify the EcoWise Certified Program Manager within 7 business days. The operation can complete already contracted work under an IPM plan developed for a site, but may not take on any new work until the operation can replace the Certified IPM Practitioner.

PMPs seeking certification to replace a Certified IPM Practitioner in a company or branch office shall contact the EcoWise Certified Program Manager to arrange to take the exam, be identified as a candidate for the position, and obtain program information. The replacement can postpone their attendance at the required orientation meeting until the next scheduled session.

Replacement should occur within 1 year in order not to lose certification. To facilitate this, the certifying agency will maintain a list of certified individuals. The Certified IPM Practitioner can be replaced temporarily (up to 1 year) by a Board Certified Entomologist or by a field representative or operator who has a record of being trained by a Certified IPM Practitioner for at least 30 hours. These temporary replacements allow the operation to continue to take on new work.

**❖207. Use of Certificates and Logo**

The EcoWise Certified Program Manager shall exercise proper control over ownership, use, and display of certificates and certification logo. Incorrect references to the certification system or misleading use of certificates or certification logo shall be dealt with by suitable action, including but not limited to, corrective action, or revocation of certification.

Logos, decals and other marketing materials will be given to the company only after full certification is achieved.

❖ **208. Marketing EcoWise Certified IPM Services**

1. All marketing claims must comply with state and federal laws and regulations.
2. Only fully certified businesses or branch offices may represent their services to be certified.
3. If the business or branch office offers both certified and traditional services, the service provider may advertise only *certified services* and may not represent that all of the company's operation is certified.
4. A certified operation may not advertise EcoWise certification without intent or capacity to provide EcoWise Certified IPM services.

**PART 3. CERTIFICATION OF INDIVIDUALS AS CERTIFIED IPM PRACTITIONERS**

❖ **300. General Requirements for Certified IPM Practitioner**

1. Individuals must be licensed at the level of Field Representative or Operator in Branch 2 for at least 1 year.
2. Individuals may petition the EcoWise Certified Program Manager to waive the experience requirement.
3. Individuals must demonstrate IPM knowledge. This can be accomplished by one of the following:
  - a. Pass, with a grade of at least 70%, a written exam designed to evaluate technical knowledge of IPM and general knowledge of the EcoWise Certified program and its standards. If the applicant does not pass, EcoWise Certified Program Manager will provide the applicant with a written report on the number and types of questions missed and will be available to make suggestions for further study. The exam may be taken up to 3 times in one calendar year. The exam will cover the knowledge requirements listed in Appendix C.
  - b. Satisfactorily complete Purdue University's "Intermediate-Level Industrial and Urban IPM" or similar approved course
  - c. Hold certification as a Board Certified Entomologist from the Entomological Society of America
  - d. Hold certification as an Associate Certified Entomologist (ACE) from the Entomological Society of America
  - e. Hold a Bachelor of Science, Master of Science, or Doctoral degree in pest management, applied entomology, urban entomology, or other similar course of study from an accredited college or university
4. On the job, the Certified IPM Practitioner must
  - Provide the initial site assessment and IPM plan for the customer
  - Implement the IPM plan or directly supervise the plan's implementation
  - Visit the site at least once a year in the case of on-going accounts

❖ **301. Application for Certified IPM Practitioner**

1. Applicant must attend the orientation meeting(s) required by the certifying agency.
2. Applicant must submit an application form and all necessary supporting documentation along with appropriate fees.

3. The EcoWise Certified Program Manager is responsible for reviewing the application and responding to the applicant within a reasonable amount of time. The response to the application must communicate whether the applicant qualifies to take the individual certification exam. If the applicant qualifies, the response must also communicate dates and times when the applicant may sit for the exam.
4. Applicant may withdraw application at any time, but will forfeit all costs incurred by the Certifying Agency up to the time of withdrawal.

❖ **302. Denial of Certification for IPM Practitioner**

1. An applicant may be denied certification for willfully making a false statement or misrepresenting the applicant's qualifications or experience.
2. A notice of denial of certification must state the reasons for denial and include information about the applicant's right to re-apply for certification or file an appeal of denial with the certifying agency.

❖ **303. Renewal of Certification for IPM Practitioner**

1. To renew certification, an individual must submit a certification renewal form every 3 years, and pay certification fees.
2. EcoWise Certified Program Manager will review renewal application, responding to the applicant within a reasonable amount of time. The response must communicate whether the applicant qualifies for renewed certification.

❖ **304. Revocation of Certification for IPM Practitioner**

1. Individual certification can be revoked for failure to comply with the *Standards*, failure to complete and report continuing education hours, for willfully making a false statement, for incurring serious complaints from customers, or for failing to submit a renewal application form.
2. A notice of revocation of individual certification must state the reasons for revocation, the proposed date of revocation, and information on filing an appeal of the revocation.

❖ **305. Use of EcoWise Certified Certificates and Logo by Certified IPM Practitioners**

The EcoWise Certified Program Manager shall exercise proper control over ownership, use and display of certificates and the EcoWise Certified logo. Incorrect references to the certification system or misleading use of certificates or certification logo shall be dealt with by suitable action, including but not limited to, corrective action, revocation of certification, and, if necessary, other legal action.

❖ **306. Requirements for Advanced Level IPM Practitioner Certification**

1. Journeyman Level IPM Practitioner
  - a. Successful completion of Purdue University's "Intermediate-Level Industrial and Urban IPM" correspondence course.
  - b. 3 years experience as a Certified IPM PractitionerA Certified IPM Practitioner may petition the EcoWise Certified Program Manager to accept alternate credentials for promotion to Journeyman Level IPM Practitioner.
2. Master Level IPM Practitioner
  - a. Certification as an Associate Certified Entomologist (ACE) or certification as a Board Certified Entomologist or completion of Purdue University's "Intermediate-Level

- Industrial and Urban IPM” and “Advanced-Level Industrial and Urban IPM”  
correspondence courses
- b. 5 years of experience as a Certified IPM Practitioner
  - c. Experience giving presentations on IPM, or experience providing formal training to peers in IPM

A Certified IPM Practitioner may petition the EcoWise Certified Program Manager to accept alternate credentials for promotion to Master Level IPM Practitioner.

### **Sources**

USDA National Organic Program Final Rule (NOP)

Marin Organic Certified Agriculture (MOCA) Certification Program

San Francisco Department of the Environment

Albert Greene, National Capitol Region IPM Program

Albert Greene: Guidelines for Structural Pest Control Operations for Federal buildings operated by the  
U.S. General Services Administration, National Capital Region

University of California Statewide IPM Project

## APPENDIX A. ECOWISE CERTIFIED PESTICIDE CRITERIA

### The Role of Pesticides in an EcoWise Certified Service

The primary methods of pest management in an IPM service are non-chemical strategies such as sanitation, harborage reduction, and physical, mechanical, cultural, and biological controls. If these strategies are deemed insufficient, unsatisfactory or are not economically viable, chemical control strategies may also be warranted. Pesticides are applied according to relevant laws, instructions on the product label, and EcoWise Certified *Standards for IPM Certification in Structural Pest Management*. Consult *Standards* Section ❖102 for more information.

The EcoWise Certified program seeks to foster responsible pesticide stewardship, especially with respect to limiting the exposure to pesticides of the public, workers, and the environment with its associated non-target organisms. This may entail minimizing the use of specific pesticides.

### Your Company's IPM Toolbox

Companies seeking certification are required to make a list of IPM tools (both chemical and non-chemical) they plan to use in their EcoWise Certified service. The EcoWise Certified Program Manager will review this list to determine if the pesticides listed meet EcoWise Certified Pesticide Criteria. The EcoWise Field Inspector will discuss the products and pesticides on this list with the applicant.

EcoWise Certified may allow formulations of pesticides that do not meet the EcoWise Certified Pesticide Criteria if the formulation is 1) contained within a bait station, 2) applied in a manner in which there is reasonable certainty of no human or other non-target exposure, 3) applied in a manner in which contact with surface or groundwater is unlikely.

### Pesticide Selection Criteria

EcoWise Certified uses the criteria listed below to screen pesticides for use in an EcoWise Certified service. Only active ingredients are screened for most risk categories because the identities of inert ingredients in the formulation are often not available. The exception is acute toxicity, where the EPA requires that the full formulation be tested for lethal effects in animals, usually rats. The testing determines the single dose required to cause death in test animals via ingestion, inhalation, and skin absorption. The testing also evaluates the degree of skin and eye irritation or damage. Results are then classified as Category I - Danger, Category II - Warning, and Category III - Caution. The highest hazard and greatest mammalian toxicity is associated with Category I.

#### I. Products Applied Inside Structures

Restrictions:

1. No US EPA Acute Toxicity Categories I & II

No EPA Category I (Danger) or Category II (Warning) pesticides are allowed. If a pesticide is used that is exempt from registration by EPA, it must not exceed criteria for Category I or II for acute oral, dermal, or inhalation toxicity and skin or eye sensitivity.

2. No Carcinogens

No pesticides with active ingredients classified as known, probable, likely, or possible carcinogens by

- a. US EPA: <http://www.epa.gov/pesticides/carlist/>



- b. The International Agency for Research on Cancer (IARC): <http://monographs.iarc.fr/ENG/Classification/index.php>
  - c. The National Toxicology Program (NTP): <http://ntp.niehs.nih.gov/?objectid=72016262-BDB7-CEBA-FA60E922B18C2540>
  - d. The California Proposition 65 List: [http://www.oehha.ca.gov/prop65/prop65\\_list/Newlist.html](http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html)
3. No Reproductive or Developmental Toxins
- No pesticides with active ingredients listed as reproductive or developmental toxins on
- a. The Material Safety Data Sheet (MSDS) for the product
  - b. The California Proposition 65 List: [http://www.oehha.ca.gov/prop65/prop65\\_list/Newlist.html](http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html)
4. No Pesticides Containing Cholinesterase Inhibitors (organophosphate pesticides such as chlorpyrifos, diazinon, malathion)
5. Endocrine Disruptors: The EPA has begun an Endocrine Disruptor Screening Program, and as the Agency provides data on various chemicals, EcoWise will add that information to our screening criteria. Chemicals that show evidence of endocrine disruption will not be allowed in an EcoWise Certified service.

## II. Products Applied Outside

Products used outside must meet these additional criteria:

- 7. No active ingredients listed in
  - a. Section 303(d) of the Clean Water Act: [http://www.waterboards.ca.gov/water\\_issues/programs/tmdl/303d\\_lists2006\\_epa.shtml](http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml)
  - b. California's Groundwater Protection List: <http://www.cdpr.ca.gov/docs/legbills/calcode/040101.htm#a6800>
- 8. No active ingredients that are considered to be extremely toxic to the following as indicated by the label, MSDS, or EPA data:
  - a. Birds
  - b. Fish
  - c. Bees
  - d. Wildlife
- 9. No active ingredients with an average soil half life greater than 99 days as determined by the Oregon State University (OSU) Pesticide Properties Database (<http://ace.orst.edu/info/nptn/ppdmove.htm>) or other reliable source
- 10. No products likely to contaminate groundwater as indicated by the label.
- 11. No active ingredients with high soil mobility (i.e., a GUS\* score greater than 3 as determined by the OSU Pesticide Properties Database [<http://ace.orst.edu/info/nptn/ppdmove.htm>] or other reliable source)

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\* The GUS score is calculated in the following way:  $GUS = \log(\text{average half life in days}) \times [4 - \log(Koc)]$  where Koc is a measure of the tendency to bind to soil.

12. No active ingredient that is a persistent, bioaccumulative, toxic substance on the US EPA Waste Minimization Priority list: <http://www.epa.gov/osw/hazard/wastemin/priority.htm>

### List of Examples Based on the Selection Criteria

For your convenience, we have compiled a list of products that meet the criteria listed above (or have been exempted by the program). The list can be found on the following pages. It is not meant to be an exhaustive list.

### Not an Endorsement

Listing of a product does not constitute an endorsement; it only reflects that the active ingredient or formulation passes a set of toxicological screening rules or has been exempted by the Program. All pesticides are intended to be toxic, and all pesticides may pose a risk to human health or the environment.

### References

- US EPA, Chemicals Evaluated for Carcinogenic Potential, Science Information Management Branch, Health Effects Division, Office of Pesticide Programs, US EPA, December, 2005. Telephone: (703) 305-5017; <http://www.epa.gov/pesticides/carlist/>
- Prop 65, "Chemicals Known to the State [of California] to Cause Cancer or Reproductive Toxicity," August 1, 2008, [http://www.oehha.ca.gov/prop65/prop65\\_list/Newlist.html](http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html)
- National Toxicology Program (NTP), US Dept. of Health and Human Services, Public Health Service, National Toxicology Program, Report On Carcinogens, 12th Edition, July 2007. <http://ntp.niehs.nih.gov/>
- International Agency for Research on Cancer (IARC), IARC Monographs Programme on the Evaluation of Carcinogenic Risks to Humans, Complete List of Agents, Mixtures and Exposures Evaluated and their Classification, (monographs.iarc.fr, September 1, 2008). <http://www.iarc.fr/>
- 1998 California 303(d) List and TMDL Priority Schedule. [http://www.waterboards.ca.gov/water\\_issues/programs/tmdl/303d\\_lists2006\\_epa.shtml](http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml)
- Oregon State University Extension Pesticide Properties Database, <http://ace.orst.edu/info/nptn/ppdmove.htm>
- EPA National Toxics Release Inventory (EPCRA Section 313) <http://www.epa.gov/tri/chemical/index.htm>
- CA Groundwater Protection List <http://www.cdpr.ca.gov/docs/legbills/calcode/040101.htm#a6800>
- US EPA Waste Minimization Priority Chemicals. <http://www.epa.gov/osw/hazard/wastemin/priority.htm>
- Pesticide Action Network, Pesticides Database, July 2007, <http://www.pesticideinfo.org>
- San Francisco Department of the Environment <http://www.sfenvironment.org/downloads/library/rovedpesticidesisdeveloped.pdf>
- Santa Clara County Board of Supervisors. 2002. *An Ordinance of the Board of Supervisors of the County of Santa Clara Adding Division B28 of the Santa Clara Ordinance Code Relating to Integrated Pest Management and Pesticide Use*. Ordinance No. NS-517.70, May 21, 2002. 13 pp.
- Green, T. 2005. *IPM Institute Method of Screening Pesticide Products*. Personal Communication Tom Green, IPM Institute, Madison, WI. November 29, 2005.
- Levitan, L. 2004. Recommended Approved List of Pesticides for use on County of Santa Clara Properties, County of Santa Clara, California. Environmental Risk Program, Cornell University, April 9, 2004. 29 pp. <http://www.environmentalrisk.cornell.edu>

## ECOWISE CERTIFIED PESTICIDE EXAMPLES

This following list was developed to help you create your own IPM Toolbox. Products listed below meet the EcoWise Certified pesticide screening criteria or have been exempted by the Program because of the manner in which they are used. This is not meant to be an exhaustive list.

Another useful reference is the *Directory of Least-Toxic Pest Control Products* containing over 2000 pest control products such as traps, pheromones, biological controls, microbials, and other products, which is published each year by BIRC, PO Box 7414, Berkeley, CA 94707; [www.birc.org](http://www.birc.org).

**List is in alphabetical order by Active Ingredient**

Active Ingredient & Percentage	Form	Examples of Product Names (Listed below is only one example of Active Ingredient and Form. Ask your supplier about other products)	Examples of Some Common Target Pests	Use Annotations	CA EPA Reg No
4-aminopyrine 0.05%	Bait	Avitrol Mixed Grain	Birds	Use as a last resort. Avoid use in places and times that the product is at risk of being consumed by non-target wildlife or domestic animals.	11649-4-AA
abamectin 0.01%	Pressurized Bait	Avert Pressurized Cockroach Bait Formula 1	Cockroaches		499-322-ZA
abamectin 0.05%	Bait Station	Avert Cockroach Bait Station Formula 1	Cockroaches		499-467-AA
abamectin 0.05%	Gel Bait	Avert Cockroach Gel Bait Formula 3	Cockroaches		499-410-AA
abamectin 0.05%	Gel Bait	Avert Gel Bait Formula 2	Cockroaches		499-406-AA
abamectin 0.05%	Flowable Bait	Avert Dry Flowable Cockroach Bait Formula 1	Cockroaches		499-294-ZA
borax 1.3%	Liquid Bait	Advance Liquid Ant Bait	Ants		499-491-AA
borax 5.4%	Liquid Bait	Terro Ant Killer II Liquid Ant Baits	Ants		149-8-ZA
boric acid 5%	Gel Bait	Drax Ant Kill Gel PF	Ants		9444-135-AA (2/23/90)
boric acid 1%		Exterminators Choice	Cockroaches		40849-20202-ZA
boric acid 1%	Liquid Bait	JT Eaton Presents Dr. Moss's Liquid Bait System	Ants		56-72-AA
boric acid 33.3%	Bait (paste or gel)	MRF 2000 (Stapleton's)	Ants, cockroaches		54452-2-ZA
boric acid 35.5%	Dust	Perma-Dust	Cockroaches, crawling insects		499-384-AA
boric acid 5%	Gel Bait	Drax Ant Kill Gel	Ants		9444-131-AA (11/13/89)
boric acid 5%	Granular Bait	Niban FG	Ants, cockroaches, silverfish		64405-2-ZA (10/04/96)
boric acid 5%	Granular Bait	Niban Granular Bait	Ants, cockroaches, silverfish		64405-2-AA (8/14/05)
boric acid 99%	Dust	Borid	Cockroaches, crawling insects		9444-129-ZA

Active Ingredient & Percentage	Form	Examples of Product Names (Listed below is only one example of Active Ingredient and Form. Ask your supplier about other products)	Examples of Some Common Target Pests	Use Annotations	CA EPA Reg No
boric acid 64%	Dust	Zone Defense	Crawling insects		44757-3-ZA
bromadiolone 0.005%	Bait	ContraC All Weather Blocks	Rats	Use only in tamper resistant bait stations. High concern over secondary poisonings;	12455-79-AA
bromethalin 0.01%	Bait	Top Gun All Weather Bait Block	Rats	Use only in tamper resistant bait stations. High concern over secondary poisoning of birds	67517-66-ZA-56
cholecalciferol 0.07%	Bait	Quintox Rat and Mouse Bait	Rats, mice	Use only in tamper resistant bait stations	12455-39-AA
cyfluthrin 20%	Wettable Powder	Tempo 20 WP	Broad spectrum	Of high concern as water pollutant. Use only as a last resort. Outdoors: only spot treatments; <u>no</u> applications to vertical or horizontal impervious surfaces; do not apply when rain is predicted in the next 2 days or where irrigation can cause runoff. Indoors: use according to <i>Standards</i>	432-1302-AA
deltamethrin	Spray	Many	Broad spectrum	Of high concern as water pollutant. Use only as a last resort. Outdoors: only spot treatments; <u>no</u> applications to vertical or horizontal impervious surfaces; do not apply when rain is predicted in the next 2 days or where irrigation can cause runoff. Indoors: use according to <i>Standards</i>	
diatomaceous earth 95%	Dust	Concern Diatomaceous Earth Crawling Insect Killer	Cockroaches, ants, fleas, beetles	Avoid inhalation; use in cracks, crevices & wall voids	73729-1-AA-50932
difethialone 0.0025%	Bait	Generation Mini-Blocks	Rats	Use only in tamper resistant bait stations. Unknown secondary poisoning effects.	7173-218-AA
diphacinone 0.005%	Bait	JT Eatons Answer for Control of Pocket Gophers	Gophers	Use only in tamper resistant bait stations. Concern over secondary poisoning	56-57-ZA
diphacinone 0.005%	Bait	JT Eatons Bait Blocks	Rats	Use only in tamper resistant bait stations. Concern over secondary poisoning	56-41-ZA

<b>Active Ingredient &amp; Percentage</b>	<b>Form</b>	<b>Examples of Product Names</b> (Listed below is only one example of Active Ingredient and Form. Ask your supplier about other products)	<b>Examples of Some Common Target Pests</b>	<b>Use Annotations</b>	<b>CA EPA Reg No</b>
disodium octaborate tetrahydrate 6%	Gel Bait	Gourmet Ant Bait Gel	Ants, cockroaches		73766-1-AA (12/01/03)
disodium octaborate tetrahydrate 1%	Liquid Bait	Gourmet Ant Bait Liquid	Ants, cockroaches		73766-2-AA (12/08/3)
disodium octaborate tetrahydrate 1%	Liquid Bait	Uncle Albert's Super Smart Ant Bait	Ants		73340-1-AA
disodium octaborate tetrahydrate 40%	Dust/Wettable Powder	Bora-Care	Wood pests, carpenter ants		64405-1-AA
disodium octaborate tetrahydrate 98%	Dust/Wettable Powder	Flea Nix (Ecology Works)	Fleas, dust mites		67419-1-ZB
disodium octaborate tetrahydrate 98%	Wettable Powder	Mop Up	Ants, cockroaches		9444-132-AA (11/13/89)
disodium octaborate tetrahydrate 98%	Dust/Wettable Powder	Timbor	Beetles, carpenter ants		1624-39-ZC
d-limonene 5.8%	Liquid	Orange Guard	Ants		61887-1-AA
eugenol	Spray	EcoPCO Aerosol	Broad spectrum		exempt 25b
eugenol	Dust	EcoPCO Dust	Broad spectrum		exempt 25b
eugenol	Spray	EcoPCO Wasp Spray	Wasps		exempt 25b
ferric phosphate 1%	Pelletized Bait	Sluggo Slug and Snail Bait	Slugs, snails		67702-3-AA-11656
fipronil 0.001%	Gel Bait	Maxforce FC Professional Ant Bait Gel	Ants		432-1264-ZA
fipronil 0.01%	Bait Station	Maxforce FC Professional Insect Control Ant Bait Stations	Ants		432-1256-AA
fipronil 0.01%	Gel Bait	Maxforce FC Professional Roach Killer Bait Gel	Cockroaches		432-1259-AA
fipronil 0.03%	Bait Station	Maxforce FC Professional Insect Control Large Roach Bait Stations	Cockroaches		432-1258-AA
fipronil 0.05%	Bait Stations	Maxforce FC Professional Roach Killer Bait Stations	Cockroaches		432-1257-AA
hydramethylnon 1%	Bait Station	Maxforce Professional Insect Control Ant Killer Bait Stations	Ants		432-1252-AA
hydramethylnon 1%	Granular Bait	Maxforce Professional Insect Control Fine Granule Insect Bait	Ants		432-1262-AA
hydramethylnon 2%	Bait Station	Maxforce Professional Insect Control Roach Killer Small Bait Stations	Cockroaches		432-1251-AA
hydramethylnon 2.15%	Gel Bait	Maxforce Professional Insect Control Roach Killer Bait Gel	Cockroaches	Use out of reach of humans and pets	432-1254-AA
hydroprene 0.36%	Spray	Gentrol Aerosol	Cockroaches		2724-484-ZA (4/30/99)
hydroprene 9%		Zoecon Gentrol IGR Concentrate	Cockroaches		2724-351-ZA
hydroprene 90.6%		Gentrol Point Source Roach Control Device	Cockroaches		2724-469-ZA
imidacloprid 0.5%	Granular Bait	Maxforce Granular Fly Bait	Flies		432-1375-ZA
imidacloprid 2.15%	Gel Bait	Pre-Empt Professional Cockroach Gel Bait	Cockroaches		432-1365-AA
indoxacarb 0.1%	Bait Station	Advion Ant Bait Arena	Ants		352-664
indoxacarb 0.05%	Gel Bait	Advion Ant Gel	Ants		352-746

Active Ingredient & Percentage	Form	Examples of Product Names (Listed below is only one example of Active Ingredient and Form. Ask your supplier about other products)	Examples of Some Common Target Pests	Use Annotations	CA EPA Reg No
indoxacarb 0.5%	Bait Station	Advion Cockroach Bait Arena	Cockroaches		352-668
indoxacarb 0.6%	Gel Bait	Advion Cockroach Gel Bait	Cockroaches		352-652
lamba-cyhalothrin 9.7%		Demand CS	Broad spectrum	Of high concern as water pollutant. Use only as a last resort. Outdoors: only spot treatments; <u>no</u> applications to vertical or horizontal impervious surfaces; do not apply when rain is predicted in the next 2 days or where irrigation can cause runoff. Indoors: use according to <i>Standards</i>	100-1066-AA
methoprene 0.5%	Bait	Extinguish Professional Fire Ant Bait	Fire ants		2724-475-ZA
methoprene 1.2%		Zoecon Precor IGR Concentrate	Fleas		2724-352-ZC
methyl anthranilate 14.5%		Rejex-It-Migrate	Birds		58035-9-ZA
methyl anthranilate 40%		Rejex-It Fog Force	Birds		58035-7-ZA
mint oil	Spray	Earth Care Naturals	Ants, cockroaches		exempt 25b
mint oil 4%, 1 % sodium lauryl sulfate	Spray	Victor Poison Free Ant and Roach Killer	Ants, cockroaches		exempt 25b
mint oil 4%, sodium lauryl sulfate 1%	Spray	Victor Poison Free Flying Insect Killer	Wasps		exempt 25b
oxypurinol 1%, xanthine 1%	Bait Station	Cleary Roach Terminal	Cockroaches		1001-73-AA
phenethyl propionate	Spray	EcoPCO Aerosol	Broad spectrum		exempt 25b
phenethyl propionate	Dust	EcoPCO Dust	Broad spectrum		exempt 25b
phenothrin 0.12%, D-trans allethrin 0.129%	Spray	PT Brand Wasp-Freeze Wasp and Hornet Killer Formula 1	Stinging insects	Of high concern as water pollutant. Use only as a last resort. Outdoors: only spot treatments; <u>no</u> applications to vertical or horizontal impervious surfaces; do not apply when rain is predicted in the next 2 days or where irrigation can cause runoff. Indoors: use according to <i>Standards</i>	499-362-ZA
pheromone	Pheromone trap	Sterling Rescue Yellowjacket Attractant and Trap	Stinging insects		exempt
pheromone	Pheromone trap	Victor PCO Roach Pheromone Trap and Lure	Cockroaches		47629-8-AA
polybutene 49%		JT Eaton 4 the Birds	Birds		8254-3-ZA-56

<b>Active Ingredient &amp; Percentage</b>	<b>Form</b>	<b>Examples of Product Names</b> (Listed below is only one example of Active Ingredient and Form. Ask your supplier about other products)	<b>Examples of Some Common Target Pests</b>	<b>Use Annotations</b>	<b>CA EPA Reg No</b>
polybutene 93%		JT Eaton 4 the Birds	Birds		8254-5-AA-56
potash soap 49%	Liquid	M-pede	Africanized bees, insects		53219-6-ZC
potassium laurate 49.5%	Liquid	Safer Insect Killer	Insects		42697-1-ZR
pyriproxifen 0.5%	Bait	Distance Fire Ant Bait	Fire ants		1021-1728-AA-59639
pyriproxifen 1.3%		Archer Insect Growth Regulator	Fleas		100-1111-AA
rosemary oil 10%	Spray	EcoExempt IC	Insects		exempt 25b
spinosad 0.015%	Bait	Conserve Professional Fire Ant Bait (0.015%)	Fire ants		62719-329-AA
spinosad 0.02%	Bait	GF-120 Naturalyte Fruit Fly Bait	Fruit flies		62719-359-AA
spinosad 80%		Entrust	Insects		62719-282-AA
sulfluramid 0.5%	Bait Station	Advance Dual Choice Ant Bait Stations	Ants		499-459-AA
thiamethoxam 0.010%	Gel Bait	Optigard Ant Gel Bait	Ants		100-1260
warfarin 0.025%	Bait	Kaput Rat and Mouse Blocks	Rats, mice	Use only in tamper resistant bait stations	72500-7-AA





**APPENDIX B. WRITTEN ACKNOWLEDGEMENT FORM FOR DEVIATION FROM ❖ 102:  
PESTICIDE APPLICATION STANDARD (SECTIONS ❖ 102.3 OR ❖ 102.4)**

***To the Certified IPM Practitioner—please complete the following form and return a copy of this Informed Release within 10 business days to the EcoWise Certified Program Manager.***

Requested pesticide application method:

Describe why this pesticide application method was necessary:

How could this kind of pesticide use be avoided in the future?

Certified IPM Practitioner name: \_\_\_\_\_ Certification# \_\_\_\_\_

Certified IPM Practitioner Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Company/Branch Office name: \_\_\_\_\_

Address: \_\_\_\_\_  
Street/P.O. Box City State Zip

Company Certification#: \_\_\_\_\_

Return to William Quarles, Program Manager  
birc@igc.org  
EcoWise Certified  
c/o BIRC  
P.O. Box 7414  
Berkeley, CA 94707

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***To the customer—please read the information above, and then read and sign the following statement:***

In consultation with my pest management professional, I have requested a pesticide application method that is not in compliance with the Pesticide Application Standard of the *EcoWise Certified Standards for IPM Certification in Structural Pest Management*.

I authorize my pest management professional to perform the service as described below.

Customer name \_\_\_\_\_  
(Please Print)

Signature \_\_\_\_\_ Date \_\_\_\_\_



## APPENDIX C. KNOWLEDGE REQUIREMENTS FOR CERTIFIED IPM PRACTITIONER

### Knowledge Expectations for Certified IPM Practitioner

#### I. Knowledge of the Branch 2 Structural IPM Standards

1. Be familiar with the *Standards* and be able to answer questions using a copy of the *Standards*

#### II. General Pest Knowledge

1. Understand that animals are scientifically classified into Kingdom, Phylum, Class, Order, Family, Genus, and Species, that the Latin names of pests in pest management and scientific literature will be written with the name of the genus first and the name of the species following, e.g., *Rattus rattus* (roof rat) or *Rattus norvegicus* (Norway rat), and that the most important classifications for a pest manager to know are the genus and species so you can look up information about pest biology
2. Describe the benefits of knowing both common and scientific names of pests
3. Describe the importance of proper pest identification and proper identification of signs of pests when selecting management strategies.
4. Identify the drawbacks of relying only on symptom identification for pest identification.
5. Know the Latin and common names for the following classes of animals: Class Insecta (insects), Class Arachnida (spiders, ticks, and mites), Class Diplopoda (millipedes), Class Chilopoda (centipedes)
6. Identify the listed pests to class and order when given a name, specimen or photo of the adult or immature forms
7. Describe basic biology (food requirements, life cycle, habitat, reproduction, and damage symptoms) for the listed pests
8. Explain pest status (why they are considered pests) for the listed pests
9. Describe the major components of an IPM program, in given sites or situations, for each listed pests with an asterisk
10. Know where to access (books, websites, people) information on pest identification and pest biology

The Certified IPM Practitioner must be familiar with the following pests (class, order, basic biology, pest status and for those with asterisks, major components of an IPM program for the pest):

#### Biting and Stinging Pests

##### Class Insecta

1. Bed bugs (Order Hemiptera, *Cimex* spp.)\*
2. Cat flea, (Order Siphonaptera, *Ctenocephalides felis*)
3. Social wasps and bees (Order Hymenoptera)
  - a. Honey bee, *Apis mellifera*
  - b. Yellowjacket wasps, *Vespula* and *Dolichovespula* spp.
  - c. Paper wasps, *Polistes* spp.

##### Class Arachnida

4. Tropical rat mite (*Ornithonyssus bacoti*)
5. Black widow (hourglass) spiders (*Latrodectus* spp.)
6. Brown dog tick (*Rhipicephalus sanguineus*)

**Flies (class Insecta, order Diptera)**

7. Drain (moth, filter, sewer) flies (family Psychodidae)
8. Fungus gnats (families Fungivoridae and Sciaridae)
9. Blow flies (family Calliphoridae)
10. Cluster fly (*Pollenia rudis*)

**Ants (class Insecta, order Hymenoptera, family Formicidae)**

11. Argentine ant (*Linepithema humile*)\*
12. Pharaoh ant (*Monomorium pharaonis*)\*
13. Carpenter ant (*Camponotus* spp.)

**Cockroaches (class Insecta, order Blattaria)**

13. German cockroach (*Blattella germanica*)\*
14. Field cockroach (*Blattella vaga*)
15. American cockroach (*Periplaneta americana*)\*
16. Oriental cockroach (*Blatta orientalis*)\*

**Stored product and fabric pests**

Class Insecta, order Coleoptera

17. Carpet beetles (*Anthrenus* and *Attagenus* species)
18. Cigarette and drugstore beetle (*Lasioderma serricorne* and *Stegobium paniceum*)

Class Insecta, order Lepidoptera

19. Indian meal moth (*Plodia interpunctella*)
20. Angoumois meal moth (*Sitotroga cerealella*)

**Other common commensal pests (non-arthropod)**

1. Rodents (class Mammalia, order Rodentia)
  - a. Roof rat\* (*Rattus rattus*)
  - b. Norway rat\* (*Rattus norvegicus*)
  - c. House mouse\* (*Mus musculus*)
2. Birds (class Aves)
  - a. Pigeon (rock dove) (*Columba livia*)
  - b. Cliff swallows (*Hirundo pyrrhonota*)

**III. Insect Biology and Morphology**

1. Demonstrate a basic understanding of insect development (stages of development and types of metamorphosis)
2. Identify basic morphological features and terms used to describe the body parts of insects and spiders
3. Define: invertebrate, vertebrate, arthropod, molt, metamorphosis, exoskeleton, nymph, larva, pupa

**IV. The Integrated Pest Management Concept**

1. The Purpose of Pest Management
  - a. Compare/contrast preventive, suppressive, and eradicated approaches to pest management
  - b. List the factors to be considered in pest management decision-making
  - c. Recognize that pest species can exist at tolerable levels
2. What Is Integrated Pest Management?
  - a. Define: integrated pest management
  - b. Compare/contrast traditional pest control with IPM

- c. Describe/define the major categories of control strategies in IPM and give examples of each: habitat modification, biological control, cultural control, mechanical/physical control, and chemical control
  - d. Recognize the relationship between pest population levels and damage
  - e. Explain the concept of injury level and describe the 3 types of injury in IPM, economic injury, medical injury, and aesthetic/nuisance injury
  - f. Explain the relationship between injury level and action level
  - g. Recognize the relationship between personal preferences and aesthetic/nuisance injury levels and their effect on pest management decisions
  - h. Understand the factors affecting aesthetic/nuisance injury levels:
    - i. The pest species and its appearance and/or damage it causes
    - ii. The customer
    - iii. Individual pest tolerance
    - iv. The specific urban environment
    - v. The type of business or structure
    - vi. The specific area within the structure
  - i. Explain the importance to successful pest management of developing a partnership with the customer
  - j. Explain the idea of a “systems approach” to pest management
  - k. Identify the uses and application methods of the following types of monitoring techniques or tools:
    - i. Visual inspections
    - ii. Night inspections
    - iii. Light traps
    - iv. Sticky traps
    - v. Pheromone traps
    - vi. Mirrors
    - vii. Binoculars
    - viii. Moisture meters
    - ix. Digital cameras
    - x. Hand lenses
    - xi. Spatulas/thin-bladed knife
    - xii. Motion detectors
    - xiii. Infrared video
  - l. Explain the importance of a thorough site inspection
  - m. List the information that should be recorded on a site inspection
  - n. Explain the importance of a written IPM plan for the site
  - o. Differentiate between site inspection and monitoring and explain the importance of monitoring in an IPM approach
  - p. List the main objectives for monitoring in a pest management program
  - q. Explain the importance of recordkeeping in an IPM approach
  - r. List the information that should be recorded when monitoring a site after the initial inspection
3. Treatment Strategies in IPM
- a. Explain why integrating a number of treatment strategies into a comprehensive IPM program can be more effective than relying on a single treatment

- b. Define and describe the principles behind the following non-chemical IPM tactics:
  - i. Sanitation
  - ii. Exclusion or pest proofing
  - iii. Denial of harborage
  - iv. Environmental manipulation
  - v. Trapping
  - vi. Monitoring
  - vii. Vacuuming
- c. List factors of the physical environment that impact pest populations
- d. Describe prevention methods for each listed pest with an asterisk
- e. Biological control
  - i. Understand that biological control has, to date, had limited application in structural IPM, but is used extensively in agricultural IPM and is a natural phenomenon occurring outside every day
  - ii. Define: natural enemies, parasitoid, predator
  - iii. Understand the importance of conserving or enhancing the activities of beneficial arthropods, especially those that feed on honeydew producing insects
  - iv. Describe how the following practices can be used to conserve or enhance the activities of beneficial insects (bees and insect natural enemies):
    - 1. Selection of pesticide
    - 2. Timing of application of pesticide
    - 3. Placement of pesticides
    - 4. Ant control
- f. Mechanical and Physical control
  - i. Explain the appropriate uses and advantages and disadvantages of the following traps for rats and mice:
    - 1. Snap traps
    - 2. Glue boards
    - 3. Live traps
  - ii. Describe the uses of a vacuum in pest management
  - iii. Describe the uses of barriers in managing pests
- g. Chemical control
  - i. Understand that in IPM, chemical controls are applied
    - 1. Only after visual inspection or monitoring devices indicate the presence of pests in that specific area, the pest numbers have exceeded the action threshold, and adequate control cannot be achieved with non-chemical methods within a reasonable time and for a reasonable cost; and
    - 2. With the most precise application technique, in the smallest area, and using the minimum quantity of pesticide necessary to achieve control.
  - ii. Understand that regular, calendar scheduled perimeter treatments are not a part of IPM
  - iii. List the information you may need when making a pesticide recommendation that may not be found on the label.
- h. Describe how the following can help reduce your potential liability: using IPM strategies, the pesticide label; the MSDS, back-up documentation; knowledge of hazards around the property; local regulations and restrictions; state and federal regulations

## V. Pesticides and Water Quality

1. Understand that the effects of pesticides on humans and on other creatures and the environment can be completely different. Substances that are relatively non-toxic to humans can be quite toxic to aquatic organisms.
2. Understand that the nature of the surface to which the pesticide is applied affects how much pesticide washes off when it rains. If all factors are equal, the amount that can wash off a solid “impervious” surface, like a sidewalk or driveway, is substantially greater than the amount that can wash off a landscaped area or farm field.
3. Understand that only a tiny fraction of the pesticide used in an urban area needs to wash off into creeks or storm drains or contaminate water that flows into sewage treatment plants to cause water quality problems.
4. Understand that the formulation of a pesticide affects how much washes off with irrigation or rain.
5. Understand that the location of the application affects how much pesticide washes off.
6. Describe where the water in a storm drain flows.
7. Describe where the water in a sewer flows. Understand that pesticides can get into sewers from application, cleanup, and washing of treated surfaces.
8. Understand that sewage treatment plants are not designed to treat pesticides. Understand the consequences of pesticide contamination of water flowing into sewage treatment plants.
9. Describe how to find out if a pesticide is a water quality concern.
10. List the water quality problems pesticides can cause in a creek, river, lake or bay.
11. Understand that gaps in EPA and state regulatory procedures allow pesticides to be registered that can cause water quality problems.

## Recommended Study Materials

Familiarity with information in most or all of these references, along with solid hands-on experience in the pest control industry, and participation in ongoing continuing education should adequately prepare prospective candidates to take the certification exam.

University of California Statewide IPM Project

<http://axp.ipm.ucdavis.edu/PMG/selectnewpest.home.html>

U.C. Pest Notes for pests of homes, structures, people and pets.

Bennet, G., J. Owens, and R. Corrigan [eds.]. 1997. *Truman's Scientific Guide to Pest Management Operations*. 6th ed. Advanstar Publications, Cleveland, OH.

Gold, R. E., and S. C. Jones [eds.]. 2000. [\*Handbook of Household and Structural Insect Pests\*](#). Entomological Society of America, Lanham, MD.

Hedges, S. A. 1996. [\*Field Guide for the Management of Structure-infesting Flies\*](#). G.I.E. Publishing, Cleveland, OH.

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Mallis, A. 2010. *Handbook of Pest Control*, 10th edition. Pest Control Technology, Cleveland, OH.  
<http://www.mallishandbook.com/>

This is not needed as a study guide, but it is a very useful reference:

Ware, G. W. 2000. *The Pesticide Book*. Thomson Publications, Fresno, California.  
[http://isbndb.com/d/book/the\\_pesticide\\_book\\_a02.html](http://isbndb.com/d/book/the_pesticide_book_a02.html)