

EcoWise Certified

Standards for IPM Certification
in
Structural Pest Management

for
Structural Pest Control Board Branch 2 Licensees

Version 1.9.1 Adopted September 26, 2006

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

TABLE OF CONTENTS

INTRODUCTION 4

OUTLINE OF ECOWISE STRUCTURAL IPM CERTIFICATION PROCESS..... 6

OUTLINE OF AN ECOWISE CERTIFIED IPM SERVICE 7

DEFINITIONS..... 9

WHAT IS CERTIFIED BY THIS PROGRAM11

PART 1. PEST MANAGEMENT STANDARD11

 ❖100. General11

 ❖101. IPM Performance Standard12

 ❖102. Pesticide Application Standard.....14

 ❖103. Recordkeeping Standard15

 ❖104. Deviation from Pesticide Application Standard.....15

 ❖105. Discontinuation of EcoWise Certified IPM Service.....15

PART 2. CERTIFICATION OF ECOWISE CERTIFIED IPM SERVICES.....16

 ❖200. General Requirements for Businesses for EcoWise Certification.....16

 ❖201. Application for EcoWise Certification16

 ❖202. Office Visit and Field Evaluation.....17

 ❖203. Final Determination of Certification.....17

 ❖204. Denial of Certification18

 ❖205. Renewal of Certification18

 ❖206. Loss of Certified IPM Practitioner19

 ❖207. Use of Certificates and Logo.....19

 ❖208. Marketing EcoWise Certified IPM Services.....19

PART 3. CERTIFICATION OF INDIVIDUALS AS CERTIFIED IPM PRACTITIONERS.....20

 ❖300. General Requirements for Certified IPM Practitioner20

 ❖301. Application for Certified IPM Practitioner20

 ❖302. Denial of Certification for IPM Practitioner20

 ❖303. Renewal of Certification for IPM Practitioner21

 ❖304. Revocation of Certification for IPM Practitioner21

 ❖305. Use of EcoWise Certified Certificates and Logo by Certified IPM Practitioners.....21

 ❖306. Requirements for Advanced Level IPM Practitioner Certification21

PART 4. ACCREDITATION OF CERTIFYING AGENTS22

 ❖400. Duration of Accreditation.....22

 ❖401. General Requirements for Accreditation (expertise, confidentiality, prevent conflict of interest, etc.)22

 ❖402. Applying for Accreditation22

 ❖403. Evidence of Expertise and Ability.....22

 ❖405. Granting Accreditation.....22

 ❖406. Denial of Accreditation.....22

 ❖407. Annual Report, Recordkeeping and Renewal of Accreditation.22

❖408. Non-compliance Procedure for Certifying agent.....	22
Sources	22
APPENDIX A. PROTOTYPE ECOWISE CERTIFIED PROGRAM MATERIALS LIST	23
APPENDIX B. WRITTEN ACKNOWLEDGEMENT FORMS FOR DEVIATION FROM ❖ 102: PESTICIDE APPLICATION STANDARD AND DISCONTINUATION OF ECOWISE CERTIFIED IPM SERVICES	29
APPENDIX C. KNOWLEDGE REQUIREMENTS FOR CERTIFIED IPM PRACTITIONER ..	33
I. Knowledge of the Branch 2 Structural IPM <i>Standards</i>	33
II. General Pest Knowledge.....	33
III. Insect Biology and Morphology	34
IV. The Integrated Pest Management Concept.....	34
V. Pesticides and Water Quality	37
Recommended Study Materials.....	37

INTRODUCTION

The following standards form the core of the EcoWise Certified pilot certification program in structural IPM that began in January 2006 in the San Francisco Bay Area and greater Sacramento area. The organizations overseeing this pilot include the Association of Bay Area Governments (ABAG), the Bio-Integral Resource Center (BIRC,) the Natural Resources Defense Council (NRDC), and the Sacramento Stormwater Program. ABAG will house the certification program at their offices in Oakland.

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. We expect that the content of the standards and the design of the certification process will continue to evolve over the next year as we gain practical experience.

Summary of the EcoWise Certified IPM Certification Program

- The pilot 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 20 IPM service visits for at least 7 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, an EcoWise inspector will review their records and perform field evaluations to determine if applicants qualify for certification. The EcoWise Program Manager will make the final decision on granting certification.
- Both company and individual certificate holders must renew their certification after 3 years. Individuals must complete 15 approved continuing IPM education hours every 3 years.

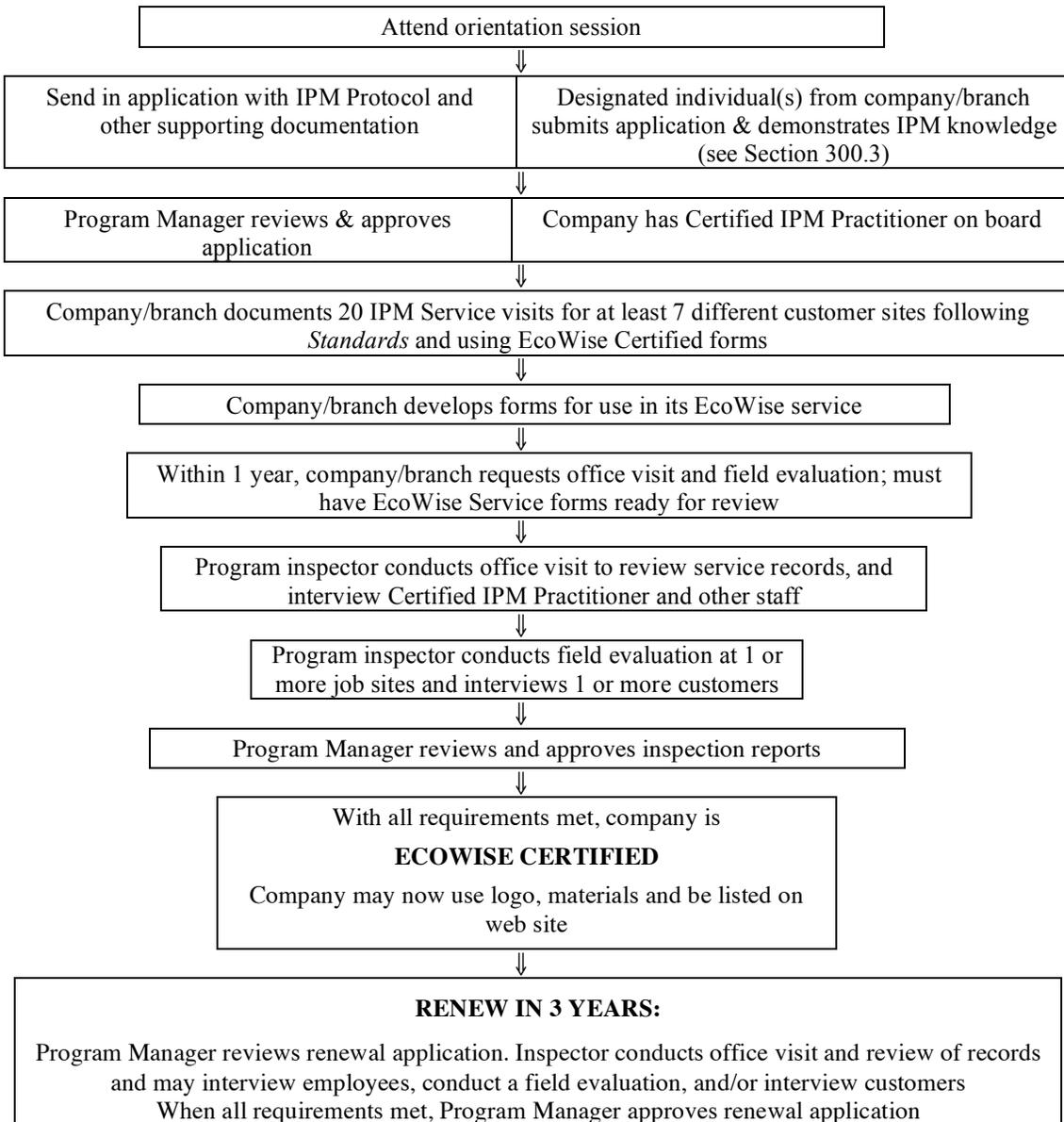
Guidelines Covered in the *Standards*

- 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

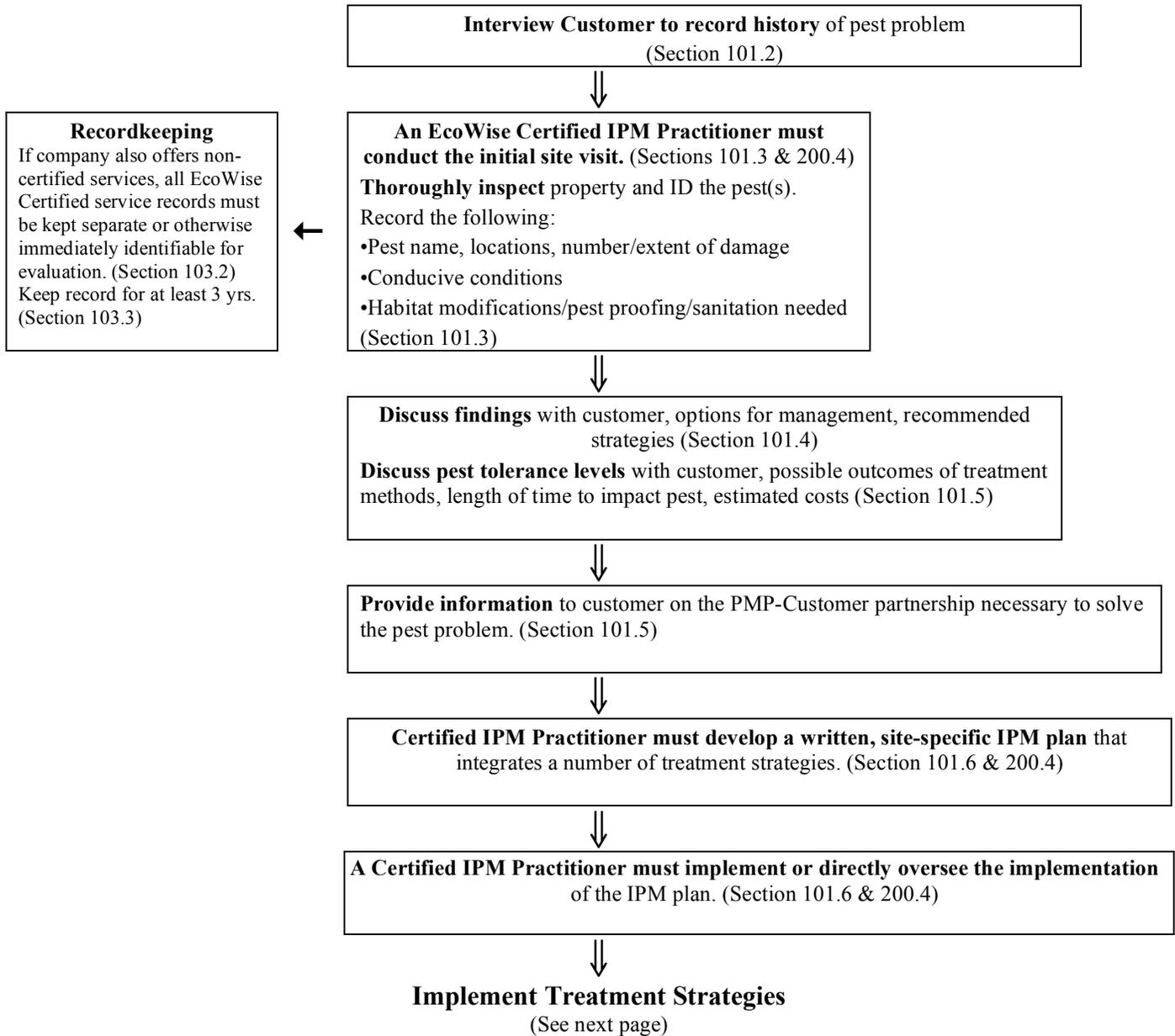
Reviewing the *Standards*

We invite you to comment on the *Standards*. Specific suggestions will be invaluable to us. In the coming months, information from IPM customers, certified practitioners, regulatory agencies, and the certification program manager will help us to hone the *Standards* into a 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 101.7 & 103.6)

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 (pest is present and has exceeded the tolerance level) and not calendar schedule. Risk is minimized:

- Only apply as a directed treatment to voids or inaccessible areas
- As a spot treatment outdoors
- 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

(Section 102)
NOTE: Underlined words are defined in the following section “Definitions”

Recordkeeping
Information about deviation must be transmitted to certifying agent within 10 days of application & a copy retained for review during normal audit. (Section 104.3)

Pesticides must be on the Certification Program Materials List.
If pesticides used are not on the Program Materials List, or are applied in a way inconsistent with Section 102, 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 101.6.d)

Special Circumstances:

Recordkeeping
Retain monitoring records.
(Section 103.5)

For on-going accounts, establish a regular, periodic monitoring program, appropriate to the site, to gather info to guide the pest management process.
For on-going accounts, a Certified IPM Practitioner must visit the site at least once a year. (Section 101.7)



Recordkeeping
Information about change of service must be transmitted to certifying agent within 10 days & a copy retained for review during normal audit.
(Section 105.3)

Switching a customer from an EcoWise Certified IPM service to a non-certified service:

- Obtain written acknowledgement from customer
- Describe reasons for change in service.

(Section 105)



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* and has passed the certifying exam

- 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 pilot project funded by a grant from the State Water Resources Control Board to the Association of Bay Area Governments (ABAG); in this pilot phase, ABAG will act as the Certifying Agency.

Certifying agent: any person or entity accredited by the certifying agency for the purpose of overseeing the certification program and making final decisions on certifying operations, branch offices, or individuals; during the pilot phase, a consultant to ABAG will represent the program and serve as the certifying agent

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 to the certifying agent 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

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 or to be 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 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

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.

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

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 conflicting 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 is a preventive maintenance process that 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. Systems Approach.** Pest management must take into account and be effectively coordinated with other relevant activities and programs that operate in and around a building. 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; 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** about 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 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 customer** including pest/problem, location, severity, options for management, and proposed strategies for management.
- 5. **Provide information to the customer** about IPM 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; if appropriate, discuss how regulations, aesthetics, budgets, and public health may affect tolerance levels
 - c. Discuss the advantages (if applicable) of higher thresholds relative to pesticide use
 - d. Discuss the possible outcomes (if known) of the treatment methods, how long they might take to impact the pest, what to expect, estimated cost
 - e. Discuss the emphasis of IPM (e.g., long-term solutions, using knowledge of pest biology, monitoring, trapping, baiting, pest exclusion, all of which lead to effective pest control and minimal pesticide use)
- 6. **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.
 - 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
- 7. **Provide customer with inspection records and recommendations** within a week after each visit.
- 8. **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 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.
- 9. **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.

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.
2. Application by need
 - a. Pesticide application shall be according to need and not by calendar schedule.
 - b. Application of pesticides shall not occur unless all of the following conditions are met:
 - i. Visual inspection or monitoring devices indicate the presence of identified pests;
 - ii. The pest numbers have exceeded the action threshold established with the client; and
 - iii. Non-chemical management strategies, such as those mentioned above, cannot or have not achieved adequate control.
3. Minimization of risk
 - 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. Contained in a bait station; or
 - iv. As a crack and crevice treatment.
 - b. An applicator, prior to and while applying a pesticide, shall evaluate the equipment to be used, meteorological conditions, the property to be treated and the surrounding properties to determine the likelihood of harm or damage. Notwithstanding that substantial drift will be prevented, no pesticide application shall be made or continued when
 - i. There is a reasonable possibility of contamination of the bodies or clothing of persons not involved in the application process;
 - ii. There is a reasonable possibility of damage to non-target plants, animals, or other public or private property;
 - iii. There is a reasonable possibility of contamination of non-target public or private property, including water running off or running near a treated area; or
 - iv. There is a reasonable possibility of creation of a health hazard, preventing normal use of such property. In determining a health hazard, the amount and toxicity of the pesticide, the type and uses of the property and related factors shall be considered.
 - c. 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.
 - d. Perimeter treatments around the outside of structures shall not be used.
 - 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.

4. Pesticides used in a Certified Service
 - a. Pesticides used in an EcoWise Certified IPM Service shall be selected from the Program Materials List (See Appendix A).
 - b. If a product to be used is not on the Program Materials List, the Certified IPM Practitioner must notify the customer and certifying agent in writing according to ❖ 104 below.
 - c. If a government agency has an approved materials list within an IPM program, the customer's list may take precedence over the Program Materials List.

❖ 103. Recordkeeping Standard

1. Records must be maintained to disclose activities of the certified operation in sufficient detail as to be readily understood and audited and to demonstrate compliance with the *Standards* for IPM Certification described in this document.
2. When an EcoWise Certified IPM service is offered alongside a non-certified service, records must be kept separately or be otherwise immediately identifiable for evaluation.
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 any additional information the certifying agent 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. Records must be available for inspection and reproduction during normal business hours by authorized representatives of the certifying agent.
6. Copies of inspection records and recommendations must be provided to customers within a week after each visit.

❖ 104. Deviation from Pesticide Application Standard

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 use a pesticide or to offer methods of pesticide application inconsistent with the Pesticide Application Standard, ❖ 102. In this event, the business must do the following:

1. 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)
2. Describe the deviation in writing and document a rationale for the deviation and how it can be avoided at the site in the future
3. Transmit the above information to the certifying agent 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 certifying agent, may present grounds for revocation of certification.

In an officially declared emergency or under State- or Federally-mandated control programs, when PMPs must comply with State and Federal laws that may be in conflict with the Pesticide Application Standard, ❖ 102, their certification will not be affected.

❖ 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 do the following:

1. Obtain from the customer written acknowledgement of the discontinuation of EcoWise Certified service (see Appendix B for an example of a written acknowledgement form)
2. Describe reasons for discontinuation of EcoWise Certified services
3. Transmit the above information to the certifying agent within 10 business days and maintain a copy for review by the field inspector during the normal audit period

PART 2. CERTIFICATION OF ECOWISE CERTIFIED IPM SERVICES

❖ 200. General Requirements for Businesses for EcoWise Certification

Businesses seeking to receive or maintain EcoWise certification must:

1. Comply with the Pest Management Standard, ❖100 through ❖104
2. Be licensed for Branch 2 work by the Structural Pest Control Board
3. Be registered with the County Agricultural Commissioner in the counties in which the applicant intends to offer EcoWise Certified IPM services and in good standing with each Agricultural Commissioner
4. 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.
5. Document (using EcoWise Certified forms) 20 IPM service visits for at least 7 different customer sites in the last 2 years and/or in the year following application for certification. IPM Star Certification will be accepted in lieu of this documentation.
6. Permit on-site visits to place of business to interview staff and review records. If applicant is IPM Star certified, applicant may forego office visit and records review.
7. Arrange field evaluation of the EcoWise Certified IPM Service at a customer site and arrange interviews with customers. If applicant is IPM Star certified, applicant may forego field evaluation.
8. Applicants using IPM Star certification as a basis for qualification must still comply with EcoWise Certified *Standards for IPM Certification in Structural Pest Management*.
9. Renew certification every 3 years
10. Pay renewal fees every 3 years
11. 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 EcoWise Certified Handbook.

3. The applicant must submit a specified number of IPM protocols demonstrating 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 certifying agent 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(s) complies with the EcoWise Certified *Standards*.
6. Within a year of filing the business application, the applicant must document at least 20 IPM service visits for at least 7 different customer sites following the EcoWise *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. When the applicant has completed the above-mentioned documentation, the applicant must notify the certifying agent, who will schedule an office visit and field evaluation to determine whether the applicant qualifies for certification.
8. The applicant may withdraw application at any time, but will forfeit fees incurred up to the time of withdrawal. An applicant who voluntarily withdraws 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 Visit and Field Evaluation

1. A qualified EcoWise Certified Program inspector will conduct the office visit and field evaluation. 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.
2. Additional announced office visits, field evaluations, or interviews with customers may be conducted at the discretion of the certifying agent.
3. The office visit and field evaluation must gather information to determine the level of compliance with the *Standards for IPM Certification*.
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 certifying agent must provide a copy of the inspection report to the inspected operation within a reasonable time.

❖ 203. Final Determination of Certification

The certifying agent 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 certifying agent 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 certifying agent 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, pay renewal fees, and provide information on how pests are being managed in the EcoWise Certified IPM Service. An applicant for certification renewal must submit a certification renewal form that describes the following:
 - a. What has been done to improve the EcoWise Service and the management of specific pests over the past 3 years
 - b. What has been done to improve customer education and communication with customers; renewal applicant must also submit any new or altered informational materials, fact sheets, etc. that are being provided to customers
 - c. Successes and problems regarding customer satisfaction with the IPM process
 - d. Marketing materials used in conjunction with the EcoWise Certified Service
 - e. Training activities attended by technical, administrative, and clerical staff involved in providing the EcoWise Certified Service
 - f. An update on the correction of minor non-compliance issues previously identified by the certifying agent as requiring correction for continued certification
 - g. Other information as deemed necessary by the certifying agent to determine compliance with the *Standards*
2. Certifying agent will review renewal application, responding to the applicant within a reasonable amount of time. The response to the application must communicate whether the applicant appears to comply with the *Standards*.
3. If applicant appears to be in compliance, the inspector will perform an on-site inspection of records and may conduct interviews with employees, a field site visit, and/or customer phone interviews.

4. When a certified operation is not in compliance with the *Standards*, the certifying agent 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.
5. 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.
6. When applicant is not in compliance, the certifying agent will be available to make suggestions for improvement.
7. A notice of proposed revocation of certification is issued when a certified operation fails to take the corrective actions within the prescribed time period.
8. 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 certifying agent 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 certification 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 certifying agent 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 and.

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 the entire company as 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 2 years.
2. Individuals may petition the Certifying Agent 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. Pass with a grade of at least 80%, an exam designed to evaluate knowledge of the EcoWise Certified program and its standards. Certifying Agent will provide 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
 - f. Have individually demonstrated compliance with IPM Star Certification
4. Individuals must complete 15 approved continuing IPM education hours every 3 years.
5. On the job, the Certified IPM Practitioner must
 - Provide the initial site assessment and IPM plan for the customer
 - Implement the plan or directly supervise the plan's implementation
 - Visit the site at least once a year for on-going accounts

❖ 301. Application for Certified IPM Practitioner

1. Applicant must attend the orientations 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 certifying agent 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 fees incurred 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, pay certification fees, and forward documentation of continuing education hours.
2. Certifying agent 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, or for incurring serious complaints from customers.
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 certifying agent 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 Practitioner

A Certified IPM Practitioner may petition the certifying agent 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 certifying agent to accept alternate credentials for promotion to Master Level IPM Practitioner.

PART 4. ACCREDITATION OF CERTIFYING AGENTS

NOTE: This section has not been completed.

❖ **400. Duration of Accreditation**

❖ **401. General Requirements for Accreditation (expertise, confidentiality, prevent conflict of interest, etc.)**

❖ **402. Applying for Accreditation**

❖ **403. Evidence of Expertise and Ability**

❖ **405. Granting Accreditation**

❖ **406. Denial of Accreditation**

❖ **407. Annual Report, Recordkeeping and Renewal of Accreditation.**

❖ **408. Non-compliance Procedure for Certifying agent**

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. PROTOTYPE ECOWISE CERTIFIED PROGRAM MATERIALS LIST

Introduction to the Prototype EcoWise Certified Program Materials List

Between 1996 and 2005 a number of California municipalities adopted integrated pest management (IPM) ordinances and policies that mandate the use of IPM on public property. Many of these policies include a requirement that, when pesticides are used, they be selected from a list of pesticides that are deemed by the agency to be compatible with IPM. Most of these lists seek to restrict or eliminate the use of specific pesticides identified by government agencies as being carcinogens, reproductive toxicants, endocrine disruptors, pesticides with high acute toxicity and pesticides that pose a significant risk to water quality.

Following this model, the EcoWise Certified Program Materials List is derived from structural pest control products that have been screened by the City and County of San Francisco, Santa Clara County, or the IPM Institute of North America. Future revisions to the EcoWise Certified list will be made using hazard ranking criteria developed by San Francisco.

Screening Process

San Francisco, Santa Clara County, and the IPM Institute screen pesticide active ingredients by comparing them to lists of carcinogens, endocrine disruptors, reproductive toxicants, and other risk categories maintained by the federal Environmental Protection Agency (EPA) and other regulatory entities or organizations. The list comparison is slightly different in each case, but the results are similar.

Only active ingredients are screened for most of the 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 includes the single dose required to cause death in test animals via ingestion, inhalation, and skin absorption. The testing also considers 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.

Exemptions

All three organizations have a process for exemptions in cases where the pesticide has not passed the screening process, but is needed for pest control. In San Francisco, users can petition the IPM Coordinator and a Technical Advisory Committee (TAC) for a time-limited exemption to use a pesticides not on the list. There is also a process through which a City Department can petition the IPM Coordinator for a time-limited emergency use of a material not on the Approved List.

The IPM Institute evaluates exemptions on a case-by-case basis in consultation with the pest control company being evaluated for certification. If the company establishes that a particular pesticide is needed that has not passed the screening process, it may be exempted. For example, the IPM Institute has exempted some spray formulations of deltamethrin, and bait formulations of fipronil.

For the Santa Clara County case, formulations such as ant baits that contain small, toxicologically insignificant levels of active ingredients or that are confined in bait stations inaccessible to humans and pets are automatically exempted. The Santa Clara County list of Approved Materials was prepared by a consultant. The IPM Coordinator and a Technical Advisory Group review the list each year. The list can be amended by the IPM Coordinator at any time. County Departments can petition for 1-year exemptions and for emergency exemptions.

EcoWise Certified Screening Process

EcoWise Certified will use the San Francisco screening process. Products that pass toxicological screening, or which are exempted by our Technical Advisory Committee, can be added to the list. On an ongoing basis, PMPs interested in certification can petition the Program Manager to consider additions to the list. PMPs will also play a meaningful role on the TAC and in evaluating the need for adding, removing or restricting pesticides on the list.

The Role of Pesticides in an EcoWise Certified Service

EcoWise Certified means that a PMP applies a pesticide, when needed, as part of a complete IPM program. 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. Pesticides are applied according to relevant laws, instructions on the product label and EcoWise Certified *Standards for IPM Certification in Structural Pest Management*. Certified individuals and companies should consult Section 102 of the *Standards* for guidance on pesticide use.

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. Pesticides are intended to be toxic and all pesticides may pose a risk to human health or the environment.

References

- San Francisco Board of Supervisors. 1996. *Amending the San Francisco Administrative Code by adding Chapter 39 thereto to Require City Departments to Minimize the use of Pesticides and Develop Integrated Pest Management Policies*. 10 pp. [San Francisco Administrative Code. 1997. San Francisco Integrated Pest Management Program. Chapter 39, Sec. 39.1-39.8. 8pp.]
- 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>
- San Francisco Department of Environment. 2005. *2005 San Francisco Reduced-Risk Pesticide List for City Operations*. 5 pp. <http://www.sfenvironment.org>
- San Francisco Department of the Environment. 2005. *Guide to the City of San Francisco's Reduced-Risk Pesticide List*. 5 pp. <http://www.sfenvironment.org>

Prototype EcoWise Certified Program Materials List

All materials used in an EcoWise Certified IPM service must be used according to label directions, Section 102 (the Pesticide Application Standard) in the *Standards*, and the “Use Annotations” below.

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.

List is in alphabetical order by Active Ingredient

Active Ingredient & Percentage	Formulation	Examples of Product Names	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
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%	Bait	Drax Liquidator Ant Bait	Ants		9444-206-ZA
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 5%	Granular Bait	Snuffer Niban FG	Ants, cockroaches, silverfish		64405-2-ZB (2/18/04)

Active Ingredient & Percentage	Formulation	Examples of Product Names	Examples of Some Common Target Pests	Use Annotations	CA EPA Reg No
boric acid 99%	Dust	Borid	Cockroaches, crawling insects		9444-129-ZA
boric acid 64%	Dust	Zone Defense	Crawling insects		44757-3-ZA
boric acid 99%	Dust	Roach Kill	Crawling insects		9444-130-AA
bromadiolone 0.005%	Bait	ContraC All Weather Blocks	Rats	High concern over 2nd poisonings	12455-79-AA
bromadiolone 0.005%	Bait	Maki Mini Blocks	Rats	High concern over 2nd poisoning	7173-202-AA
bromethalin 0.01%	Bait	Top Gun All Weather Bait Block	Rats	High concern over 2nd poisoning of birds	67517-66-ZA-56
cholecalciferol 0.07%	Bait	Quintox Rat and Mouse Bait	Rats, mice		12455-39-AA
cyfluthrin 20%	Wettable Powder	Tempo 20 WP	Broadspectrum	Outdoors: only spot treatments, no applications to vertical or horizontal impervious surfaces; indoors: use according to <i>Standards</i>	432-1302-AA
deltamethrin	Spray	Many	Broadspectrum	Outdoors: only spot treatments, no applications to vertical or horizontal impervious surfaces; indoors: use according to <i>Standards</i>	
difethialone 0.0025%	Bait	Generation Mini-Blocks	Rats	Unknown effects on 2nd poisoning, single feed.	7173-218-AA
diphacinone 0.005%	Bait	Ditrac Supersize Blox	Rats	Concern over 2nd poisoning	12455-14-ZA
diphacinone 0.005%	Bait	JT Eatons Answer for Control of Pocket Gophers	Gophers		56-57-ZA
diphacinone 0.005%	Bait	JT Eatons Bait Blocks	Rats	Concern over 2nd poisoning	56-41-ZA
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
d-limonene 5.8%	Liquid	Orange Guard	Fire ants		61887-2-AA
eugenol	Spray	EcoPCO Aerosol	Broadspectrum		exempt 25b
eugenol	Dust	EcoPCO Dust	Broadspectrum		exempt 25b

Active Ingredient & Percentage	Formulation	Examples of Product Names	Examples of Some Common Target Pests	Use Annotations	CA EPA Reg No
eugenol	Spray	EcoPCO Wasp Spray	Wasps		exempt 25b
ferric phosphate 1%	Pelletized Bait	Escargo	Slugs, snails		67702-3-AA-56872
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 0.001%	Gel Bait	Maxforce IBF4 Carpenter Ant Bait Gel	Carpenter ants		432-1264-AA
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 1%	Granular Bait	Maxforce Professional Insect Control Granular Insect Bait	Ants		432-1255-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		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
lambda-cyhalothrin 9.7%		Demand CS	Broadspectrum	Outdoors: only spot treatments, no applications to vertical or horizontal impervious surfaces; 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

Active Ingredient & Percentage	Formulation	Examples of Product Names	Examples of Some Common Target Pests	Use Annotations	CA EPA Reg No
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
mint oil, soap	Spray	Victor Poison Free Wasp and Hornet Killer-M604	Wasps		exempt 25b
oxypurinol 1%, xanthine 1%	Bait Station	Cleary Roach Terminal	Cockroaches		1001-73-AA
phenethyl propionate	Spray	EcoPCO Aerosol	Broadspectrum		exempt 25b
phenethyl propionate	Dust	EcoPCO Dust	Broadspectrum		exempt 25b
phenethyl propionate	Spray	EcoPCO Wasp Spray	Broadspectrum		exempt 25b
phenothrin 0.12%, D-trans allethrin 0.129%	Spray	PT Brand Wasp-Freeze Wasp and Hornet Killer Formula 1	Stinging insects	Outdoors: only spot treatments, no applications to vertical or horizontal impervious surfaces; 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
polybutene 93%		JT Eaton 4 the Birds	Birds		8254-5-AA-56
polybutene 97%		Tanglefoot Bird Repellent	Birds		1621-17-ZA
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
S-kinoprene 64.1%		Enstar II Insect Growth Regulator	Whiteflies		2724-476-AA
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 0.5%		Bull's-Eye Bioinsecticide	Insects		62719-314-AA-56872
spinosad 11.6%		Conserve SC Turf and Ornamental	Insects		62719-291-AA
spinosad 80%		Entrust	Insects		62719-282-AA
sulfluramid 0.5%	Bait Station	Advance Dual Choice Ant Bait Stations	Ants		499-459-AA
sulfluramid 0.5%	Bait	Fluoguard Ant Control Bait	Ants		1812-348-AA-279

**APPENDIX B. WRITTEN ACKNOWLEDGEMENT FORMS FOR DEVIATION FROM ❖ 102:
PESTICIDE APPLICATION STANDARD AND DISCONTINUATION OF ECOWISE
CERTIFIED IPM SERVICES**

Form A: Deviation from ❖ 102. Pesticide Application Standard

To the customer—please read and sign the following statement:

In consultation with my pest management professional, I have requested the use of a pesticide or 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 _____

◆◆ ◆◆ ◆◆ ◆◆ ◆◆ ◆◆ ◆◆ ◆◆ ◆◆ ◆◆ ◆◆ ◆◆ ◆◆ ◆◆

*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 or pesticide application method:

Describe why this pesticide or 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 Ted Shapas, Program Manager
EcoWise Certified
c/o ABAG
P.O. Box 2050

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.

Hedges, S. A. 1998. [*Field Guide for the Management of Structure-infesting Ants*](#). G.I.E. Publishing, Cleveland, OH.

Hedges, S. A., and M. S. Lacey. 1996. [*Field Guide for the Management of Structure-infesting Beetles*](#). Vols. I (Hide and carpet beetles/ wood-boring beetles) and II (Stored product beetles/occasional and overwintering beetles). G.I.E. Publishing, Cleveland, OH.

Kramer, R. 1998. [*PCT Technician's Handbook*](#). G.I.E. Publishing, Cleveland, OH.

Mallis, A. 2004. *Handbook of Pest Control*, 9th edition. Pest Control Technology, Cleveland, OH.

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.