

# Exam Knowledge Expectations for Qualified Applicator Certificate & Qualified Applicator License A - Residential, Industrial, and Institutional Category

Use these knowledge expectations (KEs) to help study the suggested material,  
*Residential, Industrial, and Institutional Pest Control* (2006 Edition)

Knowing the information from all of the KEs should prepare you for taking the exam.

## Chapter 1 Pest Management

- A. Define Integrated Pest Management (IPM).
- B. Provide examples of common pest monitoring methods used before applying pesticides.
- C. Describe the various thresholds used to determine when to begin controlling pests at a site.
- D. Explain the various control methods and techniques that make up an IPM program.
- E. Describe various pest control methods and their advantages and disadvantages.
- F. Describe the factors that contribute to various pest problems in and around structures.

## Chapter 2 Safe Use

- A. List and explain the criteria used to select a pesticide for use in a school.
- B. Describe how to handle pesticide containers so that they remain in safe and useable condition.
- C. List the steps to take in order to properly apply pesticides.
- D. Describe the procedures used to store pesticides properly.
- E. Explain why it is important to keep an up-to-date inventory of stored pesticides.
- F. Explain how to properly process all types of pesticide containers for disposal.
- G. Describe proper methods of disposal for leftover or expired pesticides.
- H. List the various pesticide formulations available and their advantages and disadvantages.
- I. Explain how to select the right bait for controlling specific pests.
- J. Describe methods that help minimize bait shyness and pesticide resistance when using poisoned bait.
- K. Describe how people get exposed to pesticides.
- L. Describe common symptoms of pesticide exposure in people.
- M. Explain why it is important to apply pesticides in strict conformity with label instructions, including application rates.
- N. Explain how to select the most effective Personal Protective Equipment (PPE) for the job.
- O. Describe how to wear, clean, maintain, store, and dispose of PPE.
- P. List the types of hazards that may be present at an application site.
- Q. Explain how to protect yourself from pesticide exposure when working in confined areas.
- R. Explain why pesticide residue can be a problem.
- S. List some environmental consequences of pesticides that move offsite.
- T. Explain how to reduce offsite movement of pesticides during application.
- U. List activities that can result in pesticide damage to treated surfaces and explain how to prevent this type of damage.
- V. List procedures and safety precautions for transporting pesticides in a vehicle.

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- W. Describe what to do when faced with a pesticide leak or spill.
- X. Describe how to dispose of contaminated materials from a pesticide spill.

### **Chapter 3 Weed Control**

- A. List the ways that weeds cause problems around structures.
- B. Identify the differences between broadleaf weeds, grasses, and sedges.
- C. Explain why identifying weeds correctly is important.
- D. List the resources and plant characteristics that can be used to accurately identify weeds.
- E. Explain the advantages and disadvantages of various methods and techniques used to control weeds around structures.
- F. Describe the various ways herbicides control weeds.
- G. Identify factors that should be considered when selecting herbicides.
- H. Explain when a tank mix of two or more herbicides is appropriate.
- I. List some environmental consequences of pesticides that move offsite.
- J. Describe why it is important to identify potentially sensitive areas that could be adversely affected by pesticide application.
- K. List several ways to prevent or reduce pesticide drift during herbicide applications.
- L. Describe the steps to take to keep yourself safe when applying herbicides to weeds in school grounds.
- M. Explain the role of adjuvants in herbicide applications.
- N. Explain how pesticide tolerance develops and describe ways to manage it.
- O. List the types of application equipment and the advantages and limitations of each type.
- P. List suitable formulations for various types of application equipment.

### **Chapter 4 Pests On or Near Food**

- A. List common pests that occur on or near food.
- B. Describe the damage caused or nuisance created by cockroaches in structures.
- C. Explain why gel baits are effective and how to use gel baits effectively against cockroaches.
- D. List guidelines for using cockroach baits in school buildings.
- E. Describe the cockroach species that are major pests in California.
- F. Describe non-chemical pest management practices for cockroaches.
- G. Discuss types of insecticides used to control cockroaches and describe which type works best in a given situation.

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- H. Describe how to implement follow-up monitoring to assess the effectiveness of a site's cockroach management program.
- I. Describe the damage caused or nuisance created by ants in and around structures.
- J. Describe the ant species that are major pests in buildings in California.
- K. List guidelines for using ant baits in school buildings.
- L. Describe various management methods for
  - a. Argentine ants
  - b. pharaoh ants
  - c. odorous house ants
  - d. California harvester ants
  - e. thief ants
  - f. southern fire ants
  - g. red imported fire ants
- M. Describe the fly species that are major pests in and around buildings in California.
- N. Describe the damage caused or nuisance created by flies in and around structures.
- O. Describe various management methods for
  - a. house flies and little house flies
  - b. cluster flies
  - c. blow flies
  - d. vinegar flies

**Chapter 5 Parasitic, Biting, and Stinging Arthropods**

- A. Describe the problems caused by arthropods that bite, sting, or are parasitic on people or domestic animals.
- B. List common pests that bite, sting, or are parasitic on people or domestic animals.
- C. List complications from and methods of preventing Lyme disease.
- D. List complications from and methods of preventing West Nile virus.
- E. Describe various management methods for mosquitos.
- F. Describe the true bug species that are pests in buildings in California.
- G. List the guidelines for using insect repellants.

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- H. Describe various management methods for
  - a. bed bugs
  - b. bat bugs
  - c. swallow bugs
- I. Describe various management methods for conenose bugs.
- J. List the flea species that are pests in and around buildings in California.
- K. Describe various management methods for cat fleas.
- L. Describe the bee and wasp species that can be pests in and around buildings in California.
- M. Describe various management methods for:
  - a. bees and social wasps
  - b. solitary wasps
- N. Describe the spider species that are pests in and around buildings in California.
- O. Describe various management methods for spiders.

### **Chapter 6 Fabric Pests**

- A. List common pests that feed on natural or synthetic fabrics or preserved fur, feathers, horns, and other animal parts.
- B. Describe the carpet beetle species that are pests in buildings in California.
- C. Describe the damage caused or nuisance created by carpet beetles in structures.
- D. Describe various management methods for carpet beetles.
- E. Describe the benefits of using low-oxygen atmospheres to control insect pests in museums.
- F. Describe the clothes moth species that are pests in buildings in California.
- G. Describe the damage caused or nuisance created by clothes moths in structures.
- H. Describe various management methods for clothes moths.
- I. Describe silverfish and firebrats that are pests in buildings in California.
- J. Describe the damage caused or nuisance created by silverfish and firebrats in structures.
- K. Describe various management methods for silverfish and firebrats.
- L. Describe crickets that are pests in buildings in California.
- M. Describe the damage caused or nuisance created by crickets in structures.
- N. Describe various management methods for crickets.

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### **Chapter 7 Stored Product Pests**

- A. List common pests of stored food products.
- B. Explain how birds are pests of stored food.
- C. Describe various management methods for birds.
- D. Explain how rodents are pests of stored food.
- E. Describe various management methods for rodents.
- F. Explain how fungi and other microorganisms are pests of stored food.
- G. Describe various management methods for fungi and other microorganisms.
- H. Describe insect pests of stored products.
- I. Describe the damage caused by insect pests of stored products.
- J. Describe various management methods for insect pests of stored products.
- K. Describe mite pests of stored food.
- L. Explain how mites are pests of stored food.
- M. Describe factors in the environment that may affect fumigants used in a variety of structures.
- N. Describe various management methods for stored-product mites.

### **Chapter 8 Wood-destroying Pests**

- A. List common wood-destroying pests.
- B. Describe common termite species that are pests in California.
- C. Describe the benefits and drawbacks of various management methods for termites.
- D. List the steps necessary to perform a thorough termite inspection of a variety of structures.
- E. Name areas of faulty construction that may lead to subterranean termite infestation.
- F. Describe various insecticide application methods used to control termites and the degree of penetration typical of each method.
- G. Explain how fungi can destroy wood in buildings.
- H. Describe various management methods for wood decay fungi.
- I. Describe methods used to prevent and remediate toxic mold in buildings.
- J. List typical areas in structures where wood decay may be present.
- K. Describe carpenter ants and the damage that they cause to structures.
- L. Describe various management methods for carpenter ants.
- M. Describe carpenter bees and the damage that they cause to structures.
- N. Describe various management methods for carpenter bees.
- O. Describe common wood-boring beetle species that are pests in California.

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- P. Describe various management methods for wood-boring beetles.
- Q. Describe marine borers and the damage that they cause to wood.
- R. Describe various management methods for marine borers.

**Chapter 9 Safe and Effective Applications in Landscape and Turf Settings**

- A. List common vertebrate pests in and around buildings in California.
- B. Describe problems associated with rats and mice found in and around buildings.
- C. Describe hantavirus and how it is spread.
- D. Describe the rat and mouse species that can be pests in buildings in California.
- E. Describe various management methods for rats and mice.
- F. Describe ways to estimate the size of a rodent population.
- G. Explain how bats can be pests in and around buildings.
- H. Describe various management methods for bats.
- I. Explain how birds can be pests in and around buildings.
- J. Describe various management methods for birds in and around buildings.
- K. Describe pest bird species, their behavior, and the damage they cause.