Ack! How do I study for this test!?!?!?

Lisa Blecker

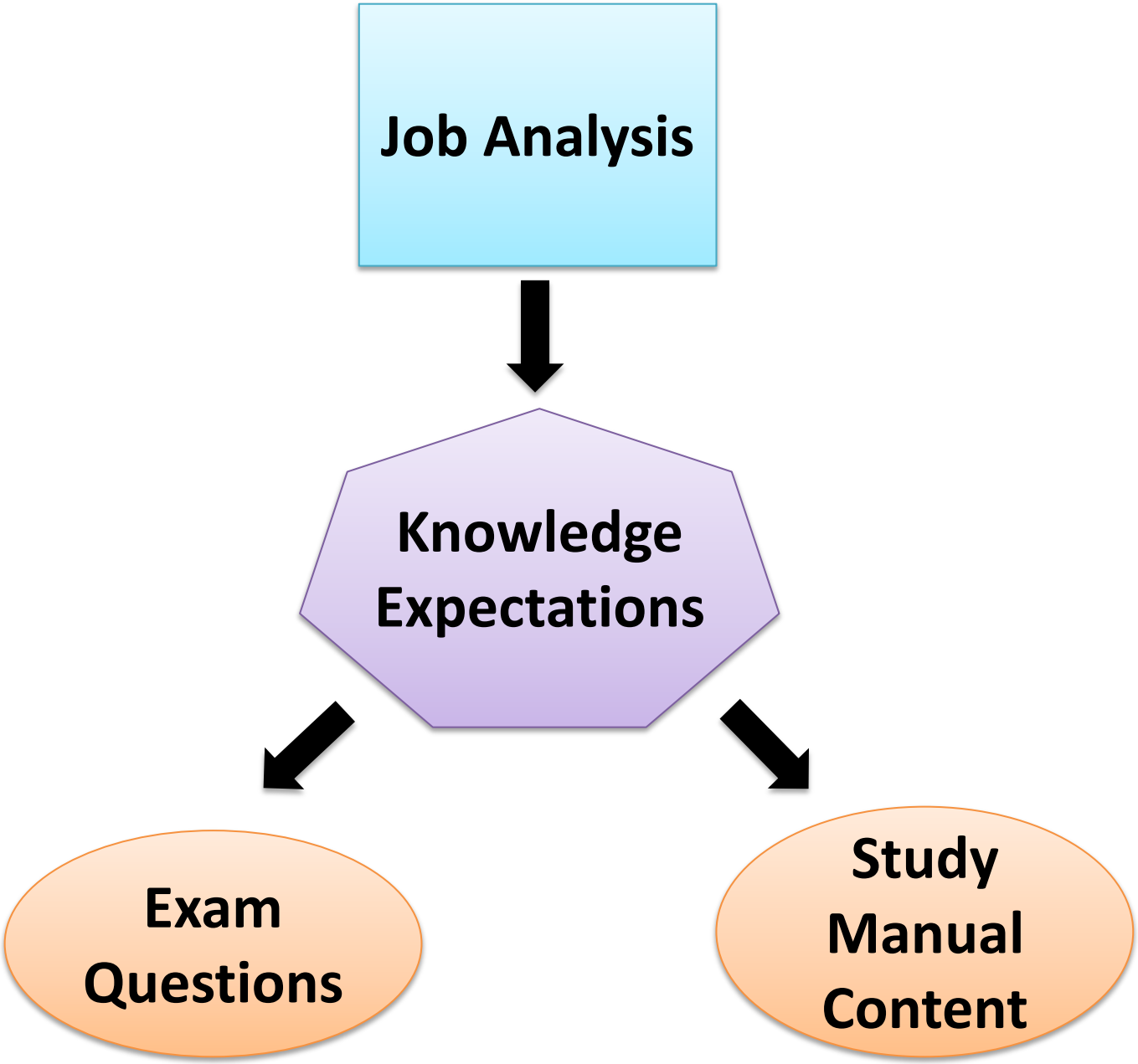
Pesticide Safety Education Coordinator

UC Statewide IPM Program

AT FIRST GLANCE
IT MAY APPEAR
TOO HARD.
LOOK AGAIN.
ALWAYS LOOK AGAIN.
Mary Anne Radmacher
Behappy

Knowledge Expectations

- Basic information you need to know to pass the exam
- Relationship between study material, the exam and the knowledge expectations?



People who pass the exam are more likely to perform the job well

Evaluate site environmental conditions

Describe the factors that influence offsite movement of pesticides

The potential for pesticide leaching is increased by:

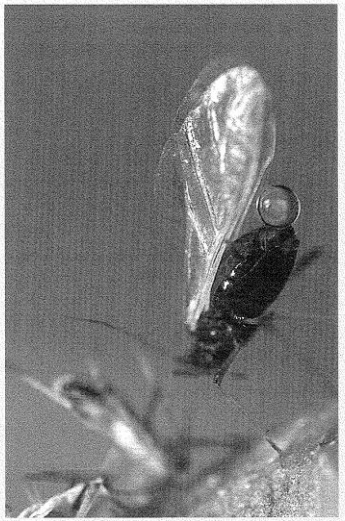
Study Manual Content: SEE NEXT SLIDE

Study Material Content

Leaching

Some pesticides reach groundwater by moving through the soil in a process called **leaching** (Figure 5-6) For a pesticide to leach into groundwater, it must move down through the soil in water and resist binding to soil particles and breaking down into non-toxic compounds. The movement of water down through the soil is sometimes referred to as percolation. A pesticide's chemical and physical characteristics (such as its solubility in water) influence its ability to leach into groundwater. Persistent pesticides are likely to leach and contaminate groundwater. Pesticides having high solubility, low adsorption, and/or persistence typically have a label statement informing the applicator of leaching concerns. A pesticide that adsorbs or binds itself strongly to soil particles will not leach as easily. In addition to the characteristics of the pesticide, soil properties and environmental conditions also affect the likelihood and extent that a pesticide will leach.

2 Pests and Problem Diagnosis



Every landscape contains a great variety of plants and animals. Very few of these organisms are pests. Many different kinds of organisms, often hidden in the landscape, play vital roles in keeping landscape plants healthy. Correctly identifying pests is important for choosing the right management tools.

KNOWLEDGE EXPECTATIONS
Pests and Problem Diagnosis

1. Know that plants may be injured or stressed by inadequate or improper cultural practices, environmental conditions such as drought and nutritional deficiency, and chemical injury such as air pollutants and spray drift.
2. Know what questions to ask to find out whether a problem is caused by a pest or nonliving factors such as poor management practices or chemical toxicities.
3. List and describe groups of organisms that are common pests (insects, mites, weeds, vertebrate pests, fungi, bacteria, and viruses) and the damage they cause to landscape plants.
4. Be able to recognize and distinguish the following invertebrate pest groups: aphids, whiteflies, mites, scales, caterpillars, snails and slugs, lawn grubs, ants, and mealybugs.
5. Distinguish damage caused by insects with sucking mouthparts from damage done by insects with chewing mouthparts.
6. Describe the developmental stages of insects with complete and incomplete metamorphosis.
7. Know the difference between broadleaf, grass, and sedge weeds.
8. Describe the life cycle of annual and perennial weeds.
9. Describe how vegetative reproductive structures of perennial weeds, such as rhizomes, bulbs, and stolons, make them difficult to control.
10. Know that many diseases caused by plant pathogens must be diagnosed by an expert.
11. Be able to recognize powdery mildew and the conditions that favor it.
12. Describe symptoms and conditions associated with root and crown diseases.
13. Know where to go to seek information about pest identification.

Pest Identification and Biology: Common Pests Found in California

3. List and describe groups of organisms that are common pests (insects, mites, weeds, vertebrate pests, fungi, bacteria, and viruses) and the damage they cause to landscape plants.

Proper identification of pests is essential for successful pest management so you can choose the correct control tools. Common pests (Figure 2-3) include invertebrates such as insects, mites, and snails and slugs; unwanted plants (weeds); microorganisms (plant pathogens) such as fungi, bacteria, and viruses that cause plant disease; and vertebrate pests such as gophers, moles, deer, and ground squirrels. Take pests or damaged plants you cannot identify to your county agricultural commissioner's office or county UC Cooperative Extension office. They can help you identify them or show you how to submit samples for analysis.

Figure 2-3. Common groups of pests found in California landscapes.

PEST GROUP	EXAMPLE ORGANISMS	DAMAGE
Plant pathogens	Microorganisms, including fungi, bacteria, and viruses.	Grow on or in plants and may cause disease symptoms such as leaf spots, powdery fungal growth, cankers, wilting, or plant distortion. Reduce the growth and health of a plant and may eventually kill it.
Invertebrates	Animals without backbones, especially insects, mites, and snails and slugs.	May feed on any plant part, reducing plant growth and health. May produce holes, discolorations, or distorted growth on plants. Some kill plants.
Vertebrates	Animals with backbones, especially gophers, ground squirrels, moles, and other rodents,	Damage plants through their feeding. May dig holes in turf, damage irrigation lines, and kill young trees.
Weeds	Any unwanted plant, including dandelions, bermudagrass, and nutsedges,	Compete with desirable plants for water, nutrients, and light. Reduce the visual beauty of the landscape.

INVERTEBRATE PESTS

Invertebrates are animals without backbones. Invertebrate pests are commonly found living on and around ornamental plants and trees in landscapes. Some of the most common invertebrate pests include aphids, whiteflies, scales, caterpillars, ants, snails and slugs, mites, mealybugs, and lawn grubs, as shown on pages 44 and 45.

4. Be able to recognize and distinguish the following invertebrate pest groups: aphids, whiteflies, mites, scales, caterpillars, snails and slugs, lawn grubs, ants, and mealybugs.

Damage Caused by Invertebrates

Most invertebrate pests damage plants through their feeding activities. The type of feeding damage depends on the pest's mouthparts (Figure 2-4). Insects and related pests generally have chewing mouthparts or sucking mouthparts. The most common invertebrates with chewing mouthparts include beetles, caterpillars, grasshoppers, earwigs, snails, and slugs. The most common pests with sucking mouthparts include aphids, scales, whiteflies, psyllids, true bugs, and leafhoppers. When insects with sucking mouthparts such as aphids excrete honeydew (Sidebar 2.1), it can lead to plant problems such as sooty mold and messy surfaces.

5. Distinguish damage caused by insects with sucking mouthparts from damage done by insects with chewing mouthparts.

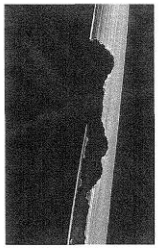
Figure 2-5 shows photographs of some common invertebrate pests and describes the damage each pest can cause.

Figure 2-4. Chewing and sucking mouthparts.

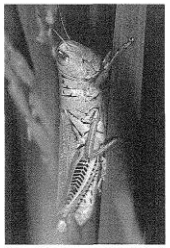
INSECTS WITH CHEWING MOUTHPARTS

- beetles
- caterpillars
- grasshoppers
- earwigs

Insects with chewing mouthparts make distinct holes in fruit, leaves, flowers, or stems.



chewed leaf section

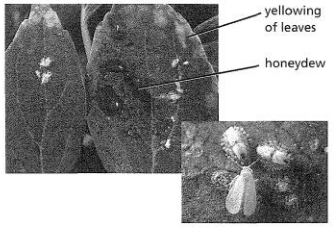


grasshopper

INSECTS WITH SUCKING MOUTHPARTS

- aphids
- leafhoppers
- mealybugs
- psyllids
- scales
- true bugs
- whiteflies

Insects with sucking mouthparts cause plant parts to discolor, distort, or drop. They do not make holes in leaves.



ash whitefly

Knowledge Expectations

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These study guides are available for downloading. If you would like a hard copy, please submit the DPR Publication Order Form, PDF (35 kb)

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- Pest Control Aircraft Pilot Certification Study Guide, PDF (4.8 mb)
- Sewer Line Root Control, PDF (2.2mb)

Knowledge Expectations

Knowledge Expectations for Field Fumigation Pest Control (Subcategory O) – knwldg_expcttns_subcat_o.pdf

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Page: 1 of 10 | Automatic Zoom

Knowledge Expectations for Field Fumigation Pest Control (Subcategory O)

Revised January 2012

The information you need to know for passing the certification examination in the Field Fumigation subcategory is included in these knowledge expectations (KEs). Use the KEs together with the Field Fumigation Study Guide and the Field Fumigation Study Guide Addendum (2011) to study in preparation for the examination. The numbers 1-8 in the KEs correspond to the chapters in the study guide. In the second section (starting on page 7) are the KEs that correspond with the addendum. If you can answer all of the questions listed in the KEs, you are probably ready for the examination.

Knowledge expectations from study guide chapters 1 – 8

1. **Regulatory Requirements for Field Fumigation in California**

   A. Describe licensing requirements for people applying soil fumigants to agricultural fields.

   B. Describe where to find the current regulations regarding field fumigation methods.

   C. Explain how local regulations may be more restrictive than the pesticide label and know the importance of communicating with the agricultural commissioner.

   D. Explain what a nonattainment area (NAA) is and how it affects the application of fumigants.

Questions?

Lisa Blecker

lblecker@ucanr.ed