

**Exam Knowledge Expectations for
Qualified Applicator Certificate/Qualified Applicator License
P – Microbial Pest Control Sub-Category**

Use these knowledge expectations (KEs) to help study the suggested material,
Microbial Pest Control Study Guide (2011 Edition)

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

General

1. Understand the procedures for selecting the most appropriate pesticides for the application target or use setting, specific pest problems, and environmental conditions.
2. Know how to ensure that all human health and safety hazards are considered before selecting a pesticide, determining the application method or technique, and making a pesticide application.
3. Recognize potential or actual hazards at the application site that could endanger people or the environment during a pesticide application.
4. Know how to prevent humans, pets, and domestic animals from contacting pesticides within the treated area.
5. Recognize the ways pesticides can damage treated surfaces that might not be part of the pest problem or application target.
6. Understand how to prevent pesticides from drifting, or otherwise moving off-site, into nontarget areas.
7. Know when and who to contact for questions relating to use, application rates, and other issues.
8. Identify and make available emergency contact information in the event you or others need medical assistance and other types of help for human exposure and spills.
9. When required, know how to provide oral notification and post warning signs for duration of re-entry restrictions after a pesticide application.
10. Understand how to follow all applicable pesticide use laws and regulations and restricted material permit conditions, including and not limited to, pesticide use restrictions and prohibitions, work safety requirements, and container transportation, storage, and disposal regulations.

Pesticides

1. Understand the concept that a material is legally considered a pesticide when it is intended to be or is used to prevent or control pests and that it must have a U.S. EPA Registration Number when used for that purpose.
2. Be familiar with the different types of pesticide formulations.
3. Know how to choose the pesticide formulation type that will be most effective in a specific situation.
4. Recognize factors that influence the efficacy of a pesticide.

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5. Know the four toxicity classifications and their signal words, i.e. DANGER/ POISON (I), DANGER (I), WARNING (II), and CAUTION (III or IV), and understand the significance of each classification in relation to handler and environmental hazards and risks.
6. Recognize the importance of different toxicities of pesticides.

Pesticide laws and regulations

Training

1. Understand the requirements of legally-required training for non-certified pesticide handlers, including applicators, mixer/loaders, and other handlers, including components of a written training program, training records, training topics, and initial and re-training.
2. Understand handler training exemptions and requirements for documenting training.
3. Know that initial training and annual training is required.
4. Understand that initial training can be waived with written proof of prior training from a previous employer.
5. Understand and follow the pesticide handler hazard communication requirements.

Record Keeping

1. Understand and follow the requirements for keeping records of all applications.
2. Understand the requirement for making operation records accessible to regulatory officials.

Pesticide Use Reporting

1. Know requirements and procedure for obtaining an Operator Identification Number prior to purchasing pesticides.
2. Know the requirements and procedures for obtaining a site identification number prior to reporting use.
3. Know and follow the requirements for monthly pesticide use reporting.

Supervision of Non-certified Personnel

1. Know the requirements and standards for supervising noncertified pesticide handlers.
2. Know when and how to provide guidance for applications and other pesticide handling activities conducted by a noncertified applicator.
3. Know that uncertified handlers must understand application and other handling procedures and applicable laws, regulations, and restricted material permit conditions.

Labeling and Associated Documents

1. Know the meanings of and difference between “pesticide label” and “pesticide labeling”.
2. Know that a registered label and other labeling allowing a use must be present at the use site.
3. Recognize that pesticide labels are legal documents and that it is illegal to use pesticides in any manner that is not consistent with the labeling.
4. Understand that the intended use and the application site or commodity are listed on the pesticide product label.

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5. Know how to identify, interpret, and follow all appropriate sections of pesticide labels to assure that pesticides are handled and applied safely and legally.
6. Recognize and follow stated use restrictions and procedures when applying a pesticide.
7. Understand what a Material Safety Data Sheet (MSDS) is, how to use the information from it, and where to obtain copies.
8. Understand the requirement to provide copies of Material Safety Data Sheets to interested parties upon request.
9. Know where to find on the label the specific hazards associated with handling the pesticides being used, including human and environmental hazards.
10. Understand label requirements for personal protective equipment (PPE) for each pesticide handled, plus when regulations or restricted material permit conditions supersede personal protective equipment requirements in the label.
11. Know how to determine, from label information, the required pesticide application equipment, method or technique, application rate, and application procedures.
12. Know the correct application settings for fumigation equipment, gas release duration, and how to calculate the correct volume of areas being fumigated.
13. Know the requirements for ventilation/aeration after fumigant application, plus know that the ventilation/aeration process is considered to be part of the application and that the application is not complete until the ventilation/aeration is complete.

Hazards Associated with Pesticide Use

1. Understand how pesticides enter the body and know which body areas are more conducive to allowing entry.
2. Understand the potential health effects of exposure to specific pesticides.
3. Recognize the importance of following proper handling procedures and personal hygiene after handling pesticides.
4. Know how to prevent, recognize, and treat heat-related illness.
5. Understand the potential harmful effects of unintended pesticide releases.
6. Be familiar with and follow the emergency response plan, including identifying and understanding how to use components of emergency response equipment and supplies.
7. Know the importance of clearing an area where a pesticide spill occurred of people and animals and how to prevent unauthorized entry to that area during cleanup.
8. Know how to contain and properly clean up a small pesticide spill or arrange for emergency personnel to clean up a large spill.
9. Follow the legal and proper methods and procedures for preventing further spills and leaks, containing the spill or leak, and disposing of pesticide and contaminated cleanup materials from a pesticide spill.

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Handling pesticides

Safety Precautions

1. Know how to provide adequate ventilation/aeration following a fumigation.
2. Know how to follow legal and proper procedures for cleaning application equipment and storing or disposing of empty containers and disposing of leftover materials.

Personal Protective Equipment

1. Identify the minimum personal protective equipment required by the label and know when regulations or restricted material permit conditions supersede the label.
2. Know how to determine exposure potentials and recognize types of pesticide hazards.
3. Understand the medical health assessment requirements for authorized respirator use.
4. Understand how to select, fit-test, and wear appropriate respiratory devices when required.
5. Know how to clean, maintain, and store personal protective equipment and inspect this equipment for signs of wear and failure.
6. Know when worn or compromised PPE must be replaced and how to dispose of used or worn personal protective equipment.
7. Recognize that safety glasses and chemical protective gloves are a minimal requirement by regulation for most pesticides, if the pesticide label is not more restrictive.

Application Procedures

1. Understand the importance of reading and following the entire label requirements and any relevant regulations or restricted material permit conditions prior to the application.
2. Recognize and follow standard operating procedures.
3. Know how to safely operate mixing, loading, and application equipment.
4. Understand the importance of locating mixing facilities a safe distance from groundwater or surface water sources.
5. Know how to safely open containers, accurately measure pesticides, safely transfer pesticides to application equipment, and follow procedures for rinsing containers and measuring devices.
6. Know how to properly calibrate application equipment prior to use.
7. Recognize potential application risks and problems associated with equipment failure or failure to follow label and other instructions.
8. Understand which critical application equipment components could contribute to a potential failure and how they are to be maintained.
9. Know and use proper and legal procedures for handling emptied containers.
10. Understand that pesticide containers must be under visual control or in a locked area during application, after mixing and loading, or when not in use.
11. Understand any posting requirements for pesticide storage areas.
12. Understand that containers used to hold pesticides other than the original labeled container (known as service containers) have to be marked with the name of the material, the signal word, and the name and address of the owner or operator.
13. Know the allowable treatment concentrations and exposure time for sterilizing wine barrels.

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14. Recognize the unique hazards and handling procedures specific to SO₂ gas including hazards associated with pressurized cylinders, pressure regulator, dosing pressure and quantity, and potential for “freeze burns”.
15. Understand proper handling, storage, and security requirements for SO₂ cylinders.
16. Recognize the difference between SO₂ used as a food additive or preservative, and SO₂ used as a pesticide (fumigant) in wineries or other food processing settings.
17. Recognize that, prior to an SO₂ application, treated surfaces should be cleaned and washed with water to remove residues and solids from previous wine making to ensure maximum sterilization effect of the SO₂ gas.
18. Assure that prior to a SO₂ application, barrels and wooden tanks are checked for integrity (e.g., holes, cracks, and dried out wood) to make sure that the SO₂ gas is only applied to a vessel that can contain it.
19. Assure that the SO₂ treated barrel is tagged with the application date, time and quantity of material applied.

Transporting and Storing Pesticides

1. Know the requirements for maintaining a suitable and secure storage area and understand posting requirements for areas used to store containers with pesticides and containers that have been “triple rinsed” prior to disposal.
2. Know the importance of maintaining pesticide containers in a safe and usable condition.
3. Understand the proper and legal way to transport pesticide containers, as per the regulations and any label instructions.

Emergency or incident response

1. Identify harmful effects of unintended pesticide releases.
2. Understand and follow your company’s emergency response plan, including identifying and understanding how to use components of emergency response equipment.
3. Know what to do in case of an accidental release, including procedures for cleaning up the contaminated area.
4. Know how to perform decontamination procedures in case of pesticide contact with skin or eyes and who to contact and where to go for medical treatment.
5. Understand how to legally dispose of contaminated materials from a pesticide spill.
6. Understand how to follow the regulatory requirements for reporting an accidental release.