

Private Applicator Standards for Training

Core Competencies:

1. Label and Labeling Comprehension
 - Format and terminology of labels and labeling.
 - Understanding that labels and labeling are legal documents and the directions they contain must be followed.
 - Understanding the meanings of product or brand name, common name and chemical name.
 - Meaning of terms "restricted use" and "general use" pesticide.
 - Understanding directions for use, storage and disposal, precautionary statements, and significance of the signal words " Caution, Warning and Danger" and requirements for personal protection and for protecting the environment.
2. Safety
 - Understanding the Worker Protection Standard.
 - Selection, use and care of personal protective equipment (PPE), personal hygiene, and precautions required when using pesticides.
 - Re-entry interval (REI) and use restrictions to include handling, transportation, mixing and loading of pesticides.
 - Recognize and understand the acute and chronic toxicity of pesticides. E. Recognition of poisoning symptoms and practical treatment.
 - Transportation, mixing, handling and disposal precautions.
3. Environmental Risk
 - Weather and other climatic factors affecting pesticide applications.
 - Factors involved in drift, runoff and aquatic contamination.
 - Sensitive areas and organisms affected by drift and runoff.
 - Factors involved in ground water contamination. Ground water management plans. Protection of threatened, endangered and sensitive plant and animal species.
 - Pesticide transportation, mixing, handling, application and disposal including container disposal, spill prevention and control.
4. Pest Identification and Biology and Management
 - Recognition of pests, knowledge of life cycles, recognition of pest damage and how to distinguish pests from beneficial organisms.
 - Stage of life cycle when pests are most vulnerable to control.
 - Understanding of the principles of Integrated Pest Management (IPM) including monitoring of pest populations and economic thresholds.
5. Pesticide and Chemical Control
 - Types of pesticides, formulations and adjuvants. Characteristics, advantages, disadvantages and main use of typical formulations.
 - Factors which affect a pesticide's effectiveness.
 - Factors in choosing the correct pesticide and method of application. Concept of pesticide resistance.
6. Equipment
 - Characteristics and main uses of typical pesticide application equipment.
 - Factors in choosing the most appropriate equipment for applicable situations, including chemigation. Proper care, maintenance and use.
7. Calibration
 - Dilution of concentrate formulations in accordance with label directions. B. Calculation of area or volume to be treated.
 - Factors involved in calibration of equipment. Adjusting total volume per acre by changing pressure, speed of applicator, or nozzle size.
8. Pesticide Laws and Regulations
 - Applicable state and federal laws and regulations.
 - Responsibility of certified applicator to use a pesticide consistent with its label or labeling and to supervise any employees who are assigned to transport, handle, mixing, load, apply or dispose of pesticides.
 - Applicator liability and penalties.

Agricultural Competencies

Practical knowledge of:

- crops grown and the specific pests of those crops on which they may be using pesticides including but not limited to:
 - the quantities of pesticides needed
 - the ultimate use of the quantities of pesticides needed
 - the ultimate use of many commodities as food and feed
- soil and water problems associated with pesticide use
- preharvest intervals, reentry intervals
- phytotoxicity, potential for environmental contamination, non-target injury
- community problems resulting from the use of pesticides in agricultural areas
- vertebrates for which they may be using pesticides including but not limited to:
 - cyclic occurrence of certain pests and specific population dynamics
- control and application methods of vertebrates in agricultural areas which will minimize the possibility of secondary problems such as unintended effects on wildlife
- knowledge of the use of vertebrate pesticides in agricultural areas which will minimize or prevent hazards to humans, pets, and other domestic animals
- practical knowledge of the types of seeds that require pesticide protection against pests, and factors such as seed coloration, carriers, and surface active agents which influence pesticide binding and may affect germination
- hazards associated with handling, sorting and mixing, and misuse of treated seed such as introduction of treated seed into food and feed channels as well as proper disposal of unused treated seeds
- proper use of grain fumigants to protect seeds
 - knowledge of the safe handling and application techniques
 - worker exposure and protection considerations
 - reentry standards into fumigated structures
- using herbicides around and rodenticides and avicides in and around agricultural (non-resident) structures

Commercial Applicator and Dealer and Private Applicator Sub-category **Standards for Training**

Commercial applicators, dealers, and private applications holding sub-category classifications must obtain credits in their specific category. Core competencies are part of the standards for all categories with a few exceptions (as noted in the footnotes)

Core Competencies:

1. Label and Labeling Comprehension
 - Format and terminology of labels and labeling.
 - Understanding that labels and labeling are legal documents and the directions they contain must be followed.
 - Understanding the meanings of product or brand name, common name and chemical name.
 - Meaning of terms "restricted use" and "general use" pesticide.
 - Understanding directions for use, storage and disposal, precautionary statements, and significance of the signal words "Caution, Warning and Danger" and requirements for personal protection and for protecting the environment.
2. Safety
 - Understanding the Worker Protection Standard.
 - Selection, use and care of personal protective equipment (PPE), personal hygiene, and precautions required when using pesticides.
 - Re-entry interval (REI) and use restrictions to include handling, transportation, mixing and loading of pesticides.
 - Recognize and understand the acute and chronic toxicity of pesticides. E. Recognition of poisoning symptoms and practical treatment.
 - Transportation, mixing, handling and disposal precautions.
3. Environmental Risk
 - Weather and other climatic factors affecting pesticide applications.
 - Factors involved in drift, runoff and aquatic contamination.
 - Sensitive areas and organisms affected by drift and runoff.
 - Factors involved in ground water contamination. Ground water management plans. Protection of threatened, endangered and sensitive plant and animal species.
 - Pesticide transportation, mixing, handling, application and disposal including container disposal, spill prevention and control.
4. Pest Identification and Biology and Management
 - Recognition of pests, knowledge of life cycles, recognition of pest damage and how to distinguish pests from beneficial organisms.
 - Stage of life cycle when pests are most vulnerable to control.
 - Understanding of the principles of Integrated Pest Management (IPM) including monitoring of pest populations and economic thresholds.
5. Pesticide and Chemical Control
 - Types of pesticides, formulations and adjuvants. Characteristics, advantages, disadvantages and main use of typical formulations.
 - Factors which affect a pesticide's effectiveness.
 - Factors in choosing the correct pesticide and method of application. Concept of pesticide resistance.
6. Equipment
 - Characteristics and main uses of typical pesticide application equipment.
 - Factors in choosing the most appropriate equipment for applicable situations, including chemigation. Proper care, maintenance and use.
7. Calibration
 - Dilution of concentrate formulations in accordance with label directions. B. Calculation of area or volume to be treated.
 - Factors involved in calibration of equipment. Adjusting total volume per acre by changing pressure, speed of applicator, or nozzle size.
8. Pesticide Laws and Regulations
 - Applicable state and federal laws and regulations.
 - Responsibility of certified applicator to use a pesticide consistent with its label or labeling and to supervise any employees who are assigned to transport, handle, mixing, load, apply or dispose of pesticides.
 - Applicator liability and penalties.

a) **Agricultural Pest Control** applicators may be classified into one of three areas:

(i) **Plant** applicators must demonstrate practical knowledge of crops grown and the specific pests of those crops on which they may be using pesticides. The importance of such competency is amplified by the extensive areas involved, the quantities of pesticides needed, and the ultimate use of the quantities of pesticides needed, and the ultimate use of many commodities as food and feed. Practical knowledge is required concerning soil and water problems, preharvest intervals, reentry intervals, phytotoxicity, and potential for environmental contamination, nontarget injury, and community problems resulting from the use of pesticides in agricultural areas.

(ii) **Animal** applicators applying pesticides directly to animals must demonstrate practical knowledge of such animals and their associated pests. A practical knowledge concerning specific pesticide toxicity and residue potential is also required since host animals will frequently be used for food. Further, the applicator must know the relative hazards associated with such factors as formulation, application techniques, age of animals, stress, and extent of treatment.

(iii) **Vertebrate** applicators must demonstrate practical knowledge of vertebrates for which they may be using pesticides. They should possess practical knowledge of the cyclic occurrence of certain pests and specific population dynamics as a basis for programming pesticide applications. The applicator must demonstrate a practical knowledge of control and application methods which will minimize the possibility of secondary problems such as unintended effects on wildlife. These applicators must demonstrate knowledge of the use of these pesticides which will minimize or prevent hazards to humans, pets, and other domestic animals.

(b) **Forest pest control** applicators shall demonstrate practical knowledge of the types of forest, forest nurseries, and seed production in their state and the pests involved. They should possess practical knowledge of the cyclic occurrence of certain pests and specific population dynamics as a basis for programming pesticide applications. A practical knowledge of the relative biotic agents and their vulnerability to the pesticides to be applied is required. Because forest stands may be large and frequently include natural aquatic habitats and harbor wildlife, the consequences of pesticide use may be difficult to assess. The applicator must therefore demonstrate practical knowledge of control methods which will minimize the possibility of secondary problems such as unintended effects on wildlife. Proper use of specialized equipment must be demonstrated, especially as it may be related to meteorological factors and adjacent land use.

(c) **Ornamental and turf pest control** applicators shall demonstrate practical knowledge of pesticide problems associated with the production and maintenance of ornamental trees, shrubs, plantings, and turf, including cognizance of potential phytotoxicity due to a wide variety of plant material, drift, and persistence beyond the intended period of pest control. Because of the frequent proximity of human habitations to application activities, applicators in this classification must demonstrate practical knowledge of application methods which will minimize or prevent hazards to humans, pets, and other domestic animals.

(d) **Seed treatment and elevator pest control** applicators shall demonstrate practical knowledge of the types of seeds that require pesticide protection against pests, and factors such as seed coloration, carriers, and surface active agents which influence pesticide binding and may affect germination. They must demonstrate practical knowledge of hazards associated with handling, sorting and mixing, and misuse of treated seed such as introduction of treated seed into food and feed channels as well as proper disposal of unused treated seeds. Applicators must demonstrate proper use of grain fumigants to protect seeds, knowledge of the safe handling and application techniques, worker exposure and protection considerations, and reentry standards into fumigated structures. They must demonstrate practical knowledge of using herbicides around and rodenticides and avicides in and around these structures.

**** (e) Aquatic pest control** applicators shall demonstrate practical knowledge of the secondary effects which can be caused by improper application rates, incorrect formulations, and faulty application of pesticides used in this classification. They shall demonstrate practical knowledge of various water use situations and the potential of downstream effects. Further, they must have practical knowledge concerning potential pesticide effects on plants, fish, birds, beneficial insects, and other organisms which may be present in aquatic environments. These applicators shall demonstrate practical knowledge of the principles of limited area application.

(f) **Right-of-way, rangeland, pasture, and noncrop pest control** applicators are applicators who apply pesticides and who shall demonstrate practical knowledge of a wide variety of environments since right-of-way, rangeland, pasture, and noncrop sites can traverse many different terrains, including waterways. They shall demonstrate practical knowledge of problems on runoff, drift, excessive foliage destruction, and potential effects to livestock and nontarget organisms. Applicators must have the ability to recognize target plants and differentiate them from nontarget plants. They shall also demonstrate practical knowledge of the nature of herbicides and the need for containment of these pesticides within the target application site, and the impact of their application activities in the adjacent areas and communities.

(g) **Industrial, institutional, structural, and health related pest control** applicators must demonstrate a practical knowledge of a wide variety of pests and their life cycles, types of formulations appropriate for their control, and methods of application that avoid contamination of food, damage and contamination of habitat and exposure of people and pets. Since human exposure includes babies, children, pregnant women, and elderly people and is frequently a potential problem, applicators must demonstrate practical knowledge of the specific factors which may lead to a hazardous condition, including continuous exposure in the various situations encountered in this classification. Because health-related pest control may involve outdoor applications, applicators must also demonstrate practical knowledge of environmental conditions particularly related to this activity.

(i) **School integrated pest management applicators** must demonstrate a practical knowledge in the principles of integrated pest management and a knowledge of pesticides registered for use in the school environment, in addition to the knowledge required by applicators in the industrial, institutional, structural, and health-related category.

(h) **Wood product pest control** applicators shall demonstrate practical knowledge of the specific wood preservative products used in their operation (creosote, pentachlorophenol, inorganic arsenicals). They shall be knowledgeable about the protective clothing and equipment requirements and the requirements for proper care and disposal of work clothing and equipment. They shall demonstrate practical knowledge of application techniques which will prevent direct exposure to domestic animals and livestock, or in contamination of food, feed or drinking and irrigation water. They shall be aware of the prohibitions against eating, drinking and smoking and other potential avenues of work exposure while applying wood preservative chemicals. They must demonstrate practical knowledge of hazards of handling treated products as well as the requirements for proper disposal of pesticide waste. They must be familiar with the consumer awareness program [CAP] which will be implemented through the use of Consumer Information Sheets [CIS's] provided to the end users of the products (consuming public).

(i) **Public health pest control** applicators shall demonstrate practical knowledge of vector-disease transmission as it relates to and influences application programs. A wide variety of pests are involved. It is essential that they be known as recognized and appropriate life cycles and habitats be understood as a basis for control strategy. These applicators shall have practical knowledge of a great variety of environments ranging from streams to those conditions found in buildings. They should also have practical knowledge of the importance and employment of such nonchemical control methods as sanitation, waste disposal, and drainage.

(j) **Regulatory pest control** applicators shall demonstrate practical knowledge of regulated pests, applicable laws relating to quarantine and other regulation of pests, and the potential impact on the environment of pesticides used in suppression and eradication programs. They shall demonstrate knowledge of factors influencing introduction, spread, and population dynamics of relevant pests. In the case of some federal agency applicators, their knowledge shall extend beyond that required by their immediate duties since their services are frequently required in other areas of the country where emergency measures are invoked to control regulated pests, and where individual judgments must be made in new situations.

(k) **Demonstration and research pest control** applicators demonstrating the safe and effective use of pesticides to other applicators and the public will be expected to meet comprehensive standards reflecting a broad spectrum of pesticide use. Many different problem situations will be encountered in the course of activities associated with demonstrations. Practical knowledge of problems, pests, and population levels occurring in each demonstration situation is required. Further, they should demonstrate an understanding of pesticide organism interactions and the importance of integrating pesticide use with other control methods. In general, it would be expected that applicators doing demonstration pest control work possess a practical knowledge of all the standards detailed in ARM 4.10.204. In addition, they shall meet the specific standards required for classifications in (1)(a) through (g) applicable to their particular activity. Persons conducting field research or method improvement work with restricted-use pesticides shall be expected to know the general standards required for classifications in (1)(a) through (j), applicable to their particular activity, or alternatively, to meet the more inclusive requirements listed under "Demonstration".

(l) **Special utility pest control** applicators shall demonstrate practical knowledge of a wide variety of utility right-of-way environments. They shall demonstrate practical knowledge of problems on runoff, drift and excessive foliage destruction, and ability to recognize target organisms. They shall also demonstrate practical knowledge of the nature of herbicides and soil sterilants, the need for containment of these pesticides within the designated areas, and the impact of their application activities in the adjacent areas. They shall demonstrate practical knowledge of the specific wood preservative products used in their operation. They shall be knowledgeable about the protective clothing and equipment requirements and the requirements for proper care and disposal of work clothing and equipment. They shall demonstrate practical knowledge of application techniques which will prevent direct exposure to domestic animals and livestock, or in contamination of food, feed or drinking and irrigation water. They shall be aware of the prohibitions against eating, drinking and smoking and other potential avenues of work exposure while applying wood preservative chemicals. They must demonstrate practical knowledge of hazards of handling treated products as well as the requirements for proper disposal of pesticide waste.

****(m) Piscicide pest control** applicators shall demonstrate a knowledge of registered piscicides, and safety practices for use, storage and transportation. They shall demonstrate practical knowledge of the secondary effects which can be caused by improper application rates, incorrect formulations, and faulty application of pesticides used in this classification. They shall demonstrate practical knowledge of various water use situations, the potential of downstream effects and piscicide decontamination procedures. They must have practical knowledge concerning potential pesticide effects on plants, fish, birds, beneficial insects and other organisms which may be present in aquatic environments. They must show practical knowledge of water chemistry, pest identification, and the ecology within the aquatic environment. Applicators must also have knowledge of applicable laws and regulation related to introduction of pesticides into state waters and demonstrate practical knowledge of the principles of limited area application.

****(n) Aerial applicators** shall demonstrate practical knowledge of laws and regulations for aerial applicator pilots, operation and application safety, preventing pesticide drift, aerial pesticide dispersal systems, calibrating aerial application equipment, and making an aerial pesticide application.

****(o) Livestock Protection Collars** shall demonstrate practical knowledge of safe handling and attachment of collars, disposal of punctured or leaking collars, contaminated animal remains, contaminated vegetation and soil, and contaminated clothing. They must show knowledge of practical treatment of 1080 poisoning in humans and domestic animals. Be familiar with record keeping, Montana pesticide laws and rules, collar labeling and Technical Bulletins for the Livestock Protection Collar.

****(p) Sodium Cyanide (M-44)** shall demonstrate practical knowledge of safe handling and attachment of the capsules and the M-44 ejector device, proper use of the antidote kit and demonstrate proper placement of the M-44 ejector device. They must be familiar with all applicable federal, state, and local laws and regulations on the cyanide capsules and M-44 devices, labels and labeling, biology of wild canids, environmental considerations, disposal and storage. They must have knowledge of the required record keeping, possession of the Use Restriction Bulletins and training manual for M44 applicators.

***These categories must earn credits through category specific training; a limited number of core credits will qualify.*