

Ornamental & Turf Weed Control 3B Study Guide

This study guide is intended to serve as an outline of the knowledge base covered by the Ornamental & Turf Weed Control 3B Exam. If you don't understand a statement, refer to the New Mexico Ornamental & Turf Pesticide Applicator Training Manual and the National Pesticide Applicator Certification Core Manual for more information. This exam consists of 50 multiple choice questions taken from the manual. Topics include:

1. General Ornamental & Turf Knowledge
2. Weed Management
3. Pesticide Application
4. Formulas/Equations
5. Weed Characteristics & Identification

1. General Ornamental & Turf Knowledge

- a. A weed is defined as a non-native, invasive, undesirable plant that goes against the objective of the land.
- b. Annuals complete their life cycle in a single year. Biennials complete their life cycle in two years. Perennials can live indefinitely.
- c. A grass plant has parallel venation. A broadleaf plant has net venation.
- d. Winter annuals germinate in the fall. Summer annuals germinate in the spring.
- e. Sedges may spread by tubers, rhizomes and seed.
- f. Shrubs are woody plants with one or more stems that grow to a height of 15 feet or less with foliage extending to the ground.
- g. Trees are plants that typically grow more than 15 feet tall and usually have only one main trunk.
- h. Integrated Pest Management (IPM) combines appropriate pest control tactics into a single plan to reduce pests and their damage to an appropriate level. Producing healthy plants that resist pests would be part of an IPM program.
- i. To reduce the potential development of pesticide resistance, treat only when necessary; use low rates; don't use the same pesticide over and over; and use new or altered pesticides.
- j. The first plants to be affected by a pesticide may be known as indicator plants.
- k. Pesticides in the soil are eventually broken down by bacteria and fungi.
- l. In general, emulsifiable concentrate (EC) formulations are more likely to burn desirable plants than other formulations.

2. Weed Management

- a. For most turf grass sites, a practical goal is to keep weeds at tolerable levels.
- b. The first line of defense in controlling weeds is to promote a healthy stand of turf grass with no bare areas for weeds to invade.
- c. Biennial weeds are usually easier to kill in their first year.
- d. To manage perennial weeds successfully you must eliminate the below ground plant parts.
- e. Most of the postemergence herbicides used for control of broadleaf weeds are systemic.

- f. A selective herbicide controls certain plant species without adversely affecting the growth of a different plant species. A non-selective herbicide will kill all weeds and also any desirable plants it contacts.
- g. Herbicides are pesticides that are used to control plants.
- h. Application errors, environmental conditions and herbicide resistance can all contribute to poor weed control results.
- i. The difference between a contact and systemic herbicide is a contact herbicide only kills or injures the part of the plant that it comes in contact with, while a systemic herbicide is absorbed by the plant and circulates within it to kill it.
- j. A common trait in pre-emergence herbicides is that they remain active in the soil after application, many for 2 months or more.
- k. Post-emergence herbicides most effectively control weeds when they are actively growing and have little, if any, residual soil activity.
- l. A successful weed management program requires an understanding of weed identification and life cycles, proper preparation of the bedding site, and using a combination of methods to maintain the sites.
- m. One of the most important steps in preventing weeds in ornamentals is to apply a 2-4 inch layer of mulch, which smothers many weeds by blocking out light.
- n. You should use both preventive cultural control practices and mechanical weed control practices, in addition to herbicides, for the best weed management.
- o. Contact herbicides usually kill plants quickly, often within hours of application.

3. Pesticide Application

- a. Drift from an application of pesticides may contaminate nearby streams and ponds, turf areas, residences, non-target plants, or even pets.
- b. If the re-entry period is not listed on the label you should make sure the treated area is dry before allowing re-entry.
- c. Tank mixing is combining two or more pesticides or a pesticide and a fertilizer together in a spray tank and is legal if they are not prohibited by the Directions for Use section of both labels.
- d. When keeping application records, keeping a map of the spray site is often helpful.
- e. Keeping records helps you comply with pesticide regulations and helps you to know whether or not a treatment was effective.
- f. When you decrease the speed of your application equipment by half, the application rate of your boom sprayer will double and vice versa.
- g. When calibrating your spray equipment you should only use water in the tank.
- h. You should check the calibration of your sprayer when changing pesticides.
- i. When treating small trees, shrubs or ornamentals, you generally calibrate your equipment by volume.
- j. When using a boom sprayer, the height of the nozzle above the ground determines the swath width or the effective spray area per nozzle.
- k. Do not use pesticides where pesticide particles can be drawn into heating, cooling and ventilation systems.

4. Formulas/Equations

- a. Be able to determine the amount of herbicide needed to treat a given area when given an application rate in ounces per square feet.
- b. Be able to determine the total spray solution needed for a specified area when your sprayer is calibrated to deliver a given volume in gallons per square feet.

5. Weed Characteristics & Identification

Be able to identify common New Mexico weeds including the following:

- a. Annual Bluegrass
- b. Field Bindweed
- c. London Rocket
- d. Spotted Spurge
- e. Russian Knapweed
- f. Russian Thistle
- g. Nutsedge
- h. Puncture Vine
- i. Carelessweed
- j. Black medic
- k. Crabgrass