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. For your 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 whenever 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