

ORNAMENTAL AND TURF PLANT PEST AND WEED CONTROL

Practice Questions

INSTRUCTIONS: The Study questions given below are intended to guide you as you read through the manual "Using Pesticides - Ornamental and Turf Plant Pest Control" B-5066 (11/02). In addition to these study questions, answer the Review Questions at the end of each Chapter. Have a highlighter and a colored pen handy. As you study through the text, look for the answers to the following questions and mark them in the book or on the sheet provided. Also, as you study through the text, ask yourself, "If I know this information will I be a better applicator?" If you answer "YES" that information would also be a good question for the test. Make a note of it. In order to allow for quick grading, most questions on the test are in the form of Multiple Choice; but this is not necessarily so.

Pest Management on Ornamental and Turf Plants (pages 1-12)

1. Name two Texas agencies that issue applicator licences to provide pest control in ornamental plants and turf.
2. Summarize the concept of IPM.
3. What is a turfgrass pest?
4. Name the most important aspect of pest management?
5. List natural factors that influence pest populations.
6. List 5 types of applied controls.
7. Explain host plant resistance.
8. List examples of cultural control methods.
9. Name types of organisms that are used in biological control.
10. Define mechanical control.
11. Give examples of mechanical control methods.
12. Explain the relationship between water and pest problems.

13. List and summarize the various cultural practices discussed.
14. Explain how water moves through the soil to groundwater.
15. List ways to avoid contaminating groundwater with pesticides.
16. Define drift.
17. List actions that might cause groundwater contamination.
18. Define leaching.
19. Name some “sensitive areas”.
20. Suggest ways that a pesticide applicator might prevent problems around sensitive areas.
21. List factors that greatly influence the amount of time pesticide residues may remain in the environment.
22. Give the general term that includes all of the following: surfactants, defoaming agents, stickers, colorants, and pH modifiers.
23. Distinguish between surfactants, defoaming agents, stickers, colorants, and pH modifiers.
24. What effect does adding a surfactant to the spray solution have on surface tension and coverage of the target area?

Insect Pests of Ornamental and Turf Plants (pages 13-28)

25. List each of the insects discussed in the manual that cause damage to a plant by sucking plant juices from ornamental plant. (pages 14-17)
26. List each of the insects discussed in the manual that cause damage to a plant by chewing on the plant tissues of ornamental plants. (pages 17-22)
27. List each type of organism mentioned in the manual that causes galls to form on ornamental plants. (page 22)

28. List each of the insects discussed in the manual that cause damage to turfgrass by sucking plant juices from the plant. (pages 22-23)
29. List each of the insects discussed in the manual that cause damage to a turfgrass by chewing on the plant tissues. (pages 23-25)
30. Compare the red imported fire ant and the Texas leaf cutting ant. (pages 26)
31. Describe the damage that each of the following insects cause. (leaf miners, June beetle, cutworm, flat-headed borer, leafminer white grubs, ground pearls, sod webworms, fall armyworms, spider mites, bagworms, tent caterpillars, cabbage loopers, grasshoppers or locust, wasps, caterpillars, beetles or fly larvae, mealybugs, spider mites, cankerworms, whiteflies, thrips, aphids, adult chinch bugs, cutworms, elm leaf beetles,
32. Compare the reproductive potential of aphids to most other insects.
33. What type of insecticide should be used to control aphids?
34. Name a small white insect that resembles a moth.
35. When can insecticide applications be made for control of thrips?
36. Where can you usually find spider mites on a plant?
37. Is there any reason to control spider mites quickly?
38. Describe a non-chemical treatment that is helpful in controlling spider mites.
39. Where does the walnut caterpillar moth deposit its' eggs?
40. Describe the life cycle of bagworms. How are the males different from the females?
41. Name all of the types of insects that have immature stages referred to as "leaf miners."
42. Name some ornamentals that are particularly susceptible to attack from "leaf miners."

43. Under what conditions do wood-boring insects characteristically attack live trees that are under stress?
44. Describe the weather conditions that chinch bugs prefer.
45. Is there any practical treatment that will control gall-forming insects once the gall has formed?
46. Name the most important species of white grub in Texas that causes significant damage to turf grass?
47. Name the insect that damages lawn grass to the point where there will be only a few roots and the applicator can roll up the lawn like a carpet?
48. Where do June beetles tend to lay their eggs?
49. How many grubs per square foot will cause economic damage to the turf?
50. Describe the most distinguishing characteristic of the fall armyworm larvae.
51. Fall armyworm populations increase when the weather is _____ and _____.
52. Describe characteristic sod webworm activity seen in the lawn.
53. Describe the mounds of the imported red fire ant.

Ornamental and Turf Plant Diseases (29-38)

54. Make a review table, list each disease discussed in the manual down the left side, make headings for what type of pathogen causes each disease (virus, bacterium, fungus, and nematode), what conditions favor the development of each disease, some basic characteristics (symptoms) of the disease, and the control methods that may be used.

Disease	Pathogen	Conditions	Symptoms	Control

55. What type of pathogen causes black spot of roses?

56. Describe the conditions that favor powdery mildew and downy mildew infection (note that they are different).
57. Compare the symptoms typical of powdery mildew and downy mildew.
58. Describe the symptoms of fungal leaf gall on azaleas and rhododendrons.
59. Describe the effect of oak leaf blister on the infected leaves.
60. When is the best time to apply a fungicide for effective control of oak leaf blister?
61. Name the most common symptom of leaf spot infection on fruitless mulberry trees.
62. Name two organisms that grow together to form lichens.
63. What type of plant is ball moss?
64. Name the type of pathogen that causes crown gall.
65. What can be done once a plant is infected with crown gall?
66. Name a common plant parasitic nematode.
67. What treatment can be used once a soil has been infested with nematodes?
68. List the typical symptoms of root-knot nematodes on ornamental plants.
69. Name the type of pathogen that causes brown patch in a lawn.
70. List the weather conditions that encourage the development of brown patch.
71. Describe the growing conditions for the grass and give the time of the year that brown patch would be expected to occur.
72. Name a condition that is sometimes confused with St. Augustine decline.

73. Tell how St. Augustine decline can be spread.
74. Name the type of pathogen that causes Bermudagrass smut.
75. What stage of growth must Bermudagrass be in for Bermudagrass smut to be a problem?
76. Name the type of organism associated with fairy ring.
77. Name the grass that is typically attacked by spring dead spot (SDS).

Weed Management (page 39-50)

78. Make a Table listing each weed discussed in the manual and note if it is a Monocot or Dicot, annual or perennial, and warm season or cool season (note which Monocots are also grasses).

Weed Name	Monocot/Dicot	Annual/Perennial	Warm/ Cool Season

79. Define each of the following:
- A. perennials
 - B. biennials
 - C. annuals
80. Review the descriptions of each of the following weeds and other weeds discussed in the manual. (nutsedge, dallisgrass, smutgrass, annual bluegrass, crabgrass, field sandbur, goosegrass, wild onion, wild garlic, yellow woodsorrel, oxalis, dandelions, prostrate spurge, common purslane, chickweed, henbit, sowthistle, and Carolina geranium.)
81. Explain the difference between cool season annuals and warm season annuals.
82. Which of the weeds discussed in the manual is considered the most difficult to control in turf and ornamentals?
83. Name the type of plant that has triangular stems and produces tubers.
84. Name the weed described by the manual as "The best known weed in Texas . . ." It starts from seed and will regenerate from the taproot after mowing.

85. Name a plant that produces white milky juice
86. Name the type of pest that would be controlled by each of the following kinds of pesticide.
- A. herbicide
 - B. insecticide
 - C. nematocide
 - D. fungicide
87. What must an applicator do before selecting or using an herbicide or any other pesticide?
88. Define each of the following terms:
(preemergence, postemergence, selective, non-selective, contact, and systemic)
89. Discuss conditions that could cause injury from preemergence herbicides due to leaching of herbicides into the root zone of desirable plants.
90. Soil texture divides soil particles into sand, silt, and clay. (Which causes the least "tie-up" of herbicides? Which will require more preemergence herbicide? Which is least likely to attract a pesticide?)
91. Name another important soil component (in addition to soil texture) that affects herbicide rates and movement through the soil.
92. Explain how the attraction between a herbicide and the clay and organic matter in the soil affect the leachability of a given herbicide.
93. Compare the pros and cons of using each of the following for weed control under trees and ornamentals. (contact herbicide, 2,4-D and other growth regulator herbicides, and soil sterilants)
94. What affect do hairs and a waxy cuticle have on spray retention?
95. What effect does adding a surfactant or wetting agent to a spray mixture have on the ability of the leaves to absorb postemergence herbicides?
96. Name two grassy weeds that are best controlled with postemergence herbicide applications.
97. Name three herbicides that are classified as growth regulator (hormone type) herbicides.

98. Discuss the major concerns about using growth regulator (hormone-type) herbicides around trees and shrubs.

Calibration (pages 51-62)

99. Review the nozzle discussion on page 55 comparing 8005 and 11005 tips: What is the spray angle of each nozzle? What is the output in gallons per minute for each flat fan nozzle at the 40 psi standard pressure?
100. Compare the pattern, drift potential, and pattern edge of the rotary spreader and the drop spreader. Which of the two is most uniform and consistent?
101. Practice each of the problems discussed in the chapter as well as the problems given in the Review Questions on page 62.

Soil Fumigation (pages 63-75)

102. Soil fumigation is a complex and dangerous way to control all weeds, diseases, and insects present in a given area at a given time. Review paragraph 2 page 63 and list the special precautions and procedures that should be considered.
103. Explain special characteristics of “general purpose soil fumigants” which are pesticides designed to eradicate all soil organisms.
104. Give the time of year that fumigation is most effective and explain why this is true.
105. Review the “Factors that Influence Soil Fumigation” pages 67-70.
106. Soil fumigants are used to control weed seeds, tubers and rhizomes. The soil should be free of trash, tilled to a depth of 6 inches and moist before a soil fumigant is applied. Review “Application Techniques and Equipment” on pages 70-72.
107. Review “Safety Precautions” on pages 72-73.

If you have questions or comments concerning these study questions please contact me:
(phone:979-845-6531) (FAX:979-458-2777)
(e-mail: m-ketchersid@tamu.edu)