

Student name _____

ORH 4223 - Golf and sports turf management 17 Dec 2004

University of Florida - Fort Lauderdale

Final Exam: Open book, open notes

Multiple choice - Wise use of Chemicals

(33 + 5 bonus pts.)

Please read the attached label for Sencor 75 Turf Herbicide, glance over the Material Safety Data Sheet (3 questions), and glance over the research paper, "Goosegrass (*Eleusine indica*) control with foramsulfuron in bermudagrass (*Cynodon* spp.) turf" (2 questions). You may refer to your notes and handouts from class, your textbook, and any other textbook, or other prepared material. Another person may not assist you. It may help to know that 1 ounce dry measure = 28.4 g. Make sure your circle is unambiguous.

1. The active ingredient of Sencor 75 Turf Herbicide is:
 - a. foramsulfuron
 - b. MSMA
 - c. metribuzin
 - d. inert ingredient
 - e. 2,4-D

2. Sencor 75 Turf Herbicide is:
 - a. dry
 - b. liquid
 - c. emulsifiable concentrate
 - d. insecticide
 - e. a household product

3. Sencor 75 Turf Herbicide can be applied to:
 - a. golf course greens
 - b. fairways
 - c. tees
 - d. sod farms
 - e. St. Augustinegrass

4. The maximum cumulative amount of Sencor 75 Turf Herbicide that can be applied to actively growing turf per growing season is:
 - a. 1/3 pound per acre
 - b. 2/3 pound per acre
 - c. 1 pound per acre
 - d. 1 1/3 pounds per acre
 - e. 2 pounds per acre

5. In the research paper, what were the common rates of metribuzin used in the experiments reported for goosegrass control?
 - a. 0.105 kg ai/ha
 - b. 0.210 kg ai/ha
 - c. 0.105 or 0.210 kg ai/ha
 - d. 0.044 kg ai/ha
 - e. 0.029 kg ai/ha

6. The Sencor 75 Turf Herbicide label:
 - a. prohibits mixture with chemicals other than MSMA
 - b. mentions mixture with MSMA
 - c. requires an adjuvant (wetting agent) be included in the mixture
 - d. prohibits the use of an adjuvant in the mixture
 - e. requires the use of low-pressure and high-volume hand-want equipment

7. The active ingredient in Sencor has a reported LD50 for acute oral toxicity for female rats of:
 - a. 2365 mg/kg
 - b. 1449 mg/kg
 - c. 2000 mg/kg
 - d. 5000 mg/kg
 - e. unknown

8. LD50 is the amount of chemical expected to kill 50% of a population of animals. So approximately how much Sencor would a 60-kg (132 pounds) female rat have to eat in order to have a 50% chance of dying?
 - a. 1 mg
 - b. 30 mg
 - c. 90 mg
 - d. 3 g, about 1/10 ounce
 - e. 90 g, about 3 ounces

9. A 5-pound carton of Sencor 75 Turf Herbicide can be purchased for \$217 at LESCO. Assume that 2 ounces is sprayed per acre, how much does it cost to spray one acre?
 - a. \$0.50
 - b. \$1.00
 - c. \$5.00
 - d. \$10.00
 - e. \$50.00

10. Based on the LD50 for acute oral toxicity, the toxicity label signal word for Sencor (see textbook) is:
- a. Caution
 - b. Warning
 - c. Danger
 - d. All of the above
 - e. None of the above
11. The research article describes the use of Sencor in control of goosegrass. The type of control described is:
- a. Preventive
 - b. Curative
 - c. Preemergence
 - d. Spot treatment
 - e. Fumigant
12. There is something really bizarre about the recommended rate of application of Sencor. What is it? (Bonus points - 5 pts - hint, look at the research article.)

Multiple choice and mixed, continued - Irrigation and evapotranspiration

(25 pts.)

13. The daily potential evapotranspiration for a hot humid climate is:
- a. 0.10 - 0.15 inches
 - b. 0.15 - 0.20 inches
 - c. 0.20 - 0.30 inches
 - d. 0.30 - 0.40 inches
 - e. None of the above
14. In class, the four factors that determine evapotranspiration were (4 pts):
- a. _____
 - b. _____
 - c. _____
 - d. _____

15. A rotary sprinkler system with 1.5 inches per hour precipitation rate is run 40 minutes per day, 7 days per week. How many inches of water is applied per week?
- 1
 - 3
 - 5
 - 7
 - 9
16. A term describing the downward movement of water through the soil:
- percolation
 - leaching
 - solution
 - infiltration
 - conductivity
17. As described and demonstrated by John Mascaro, infiltration is:
- The movement of water through soil
 - Localized dry spots
 - The carrying of solutes (e.g., nitrates), through the soil
 - The movement of water into the soil
 - Water which runs off the turf
18. Compared with rotary heads, spray heads:
- cost more per head
 - cost less per unit area
 - turn around more rapidly
 - apply higher precipitation rate
 - have a larger radius
19. Uniform applications are beneficial because:
- dollars can be saved
 - it's the right thing
 - there is less chance of turf injury
 - there is less chance of environmental damage
 - all of the above
20. The main factor in evapotranspiration (water loss from plants and soil) is:
- rainfall
 - temperature
 - radiant energy
 - wind
 - relative humidity

Multiple choice - Various subjects

(42 pts.)

21. A meristem is:

- a. An enzyme
- b. A growing point
- c. A period of growth
- d. A stage in cell division
- e. A mutation

22. Hybrid bermudagrass has how many chromosomes?

- a. 9
- b. 18
- c. 27
- d. 36
- e. 45

23. The approximate value added to the Florida economy from the cultivation of turfgrass (golf, sports, lawns, etc.), based on a 1991-92 survey, was:

- a. \$90 million
- b. \$300 million
- c. \$1 billion
- d. \$3 billion
- e. \$9 billion

24. Approximately how many cubic yards of root zone mix must you order to topdress a 6-acre sports complex to a depth of 1/8 inch?

- a. 10
- b. 30
- c. 100
- d. 300
- e. 1000

25. The best non-chemical preventative for goosegrass is:

- a. preemergence
- b. postemergence
- c. aeration
- d. fertilization
- e. fumigation

26. Only one of the five recommended sports turf species in Puhalla, "Sports Fields," is a warm-season grass:
- Kentucky bluegrass
 - Tall fescue
 - Perennial ryegrass
 - Bermudagrass
 - Creeping bentgrass
27. Topdressing is done to:
- Level a playing surface
 - Help decompose thatch
 - Assist in overseeding
 - All of the above
 - None of the above
28. A species of turfgrass that is highly salt tolerant and expanding rapidly in use in Florida golf courses:
- bermudagrass, *Cynodon* spp.
 - bahiagrass, *Paspalum notatum*
 - centipedegrass, *Eremochloa ophiuroides*
 - seashore paspalum, *Paspalum vaginatum*
 - St. Augustinegrass, *Stenotaphrum secundatum*
29. The Systeme Internationale is the official system for measurement in ALL the countries of the earth except not:
- The United States, most of Latin America, and parts of Africa
 - China, Japan, the U.S. and parts of Africa
 - The former English colonies (the U.S., Australia, Canada, etc.)
 - English speaking countries
 - Liberia, Myanmar, and the United States
30. Most calculation errors occur:
- because of not using a calculator
 - because of incorrect units conversion
 - because of not using the metric system
 - because of rounding errors in calculations
 - because of setting up the problem incorrectly
31. A component of fertilizer that can help lower soil pH (make more acid) and therefore make some micronutrients more available:
- chelate
 - calcium
 - ammonium
 - sulfate
 - sodium

32. In terms of soil texture, clay is composed of:
- a soil amendment applied to the skinned area of a baseball or softball field
 - particles smaller than 0.002 mm in diameter
 - particles larger than 0.05 mm in diameter
 - a mineral primarily of hydrated silicates of aluminum that is plastic when wet and hardens when heated
 - all of the above
33. In golf and sports turf calculations, the main advantage of using the English system, compared with the metric system is:
- Calculations are easy
 - It was developed by the British
 - Most people use it in the U.S.
 - A cubic perch per fortnight is 3.3 pecks per minute
 - It was not designed by the French
34. The basic unit of the grass inflorescence is?
- glume
 - spikelet
 - peduncle
 - lodicule
 - root hair

Essay - Bonus

(20 pts.)

35. Choose one of the 42 "Essentials of Golf and Sports Turf Management and write a 1-1.5 page essay on it.

