

Name _____

Student ID # _____

CS 053, EXAM 3
November 2005
Landscape Weed Management

1. Which landscape bed type requires the most effort and attention to pre-plant weed management? (3 pts)
 - a. Woody tree & shrub bed
 - b. woody ground cover bed
 - c. herbaceous perennial bed
 - d. bedding plants if you don't know what this is – ask.

2. In which landscape bed type will you have to worry LEAST about pre-plant weed control? (3 pts)
 - a. Woody tree & shrub bed
 - b. woody ground cover bed
 - c. herbaceous perennial bed
 - d. bedding plants

3. There are no herbicides labeled for controlling dodder in a bed of petunias. Which of the following would be the best and most efficient strategy for controlling dodder in next summer's color bed planting? (3pts)
 - a. Solarize the bed in the spring before planting
 - b. Treat after planting with Pennant Magnum
 - c. Plant marigolds instead
 - d. Hand weed
 - e. All of the above

4. What weed control option do you have in bedding plants (or color beds) that you cannot use in an herbaceous perennial bed? (3 pts)

You can start over in annual bedding plants. Renovate, and control weeds then replant. Partial credit given to answers that suggested that you would be killing everything and starting over. Solarization was not an option.

5. The 3 main options for site preparation are Roundup, Fumigation, and Cultivation. Two options are rarely used. Which and Why? (6 pts)

Cultivation: time consuming – multiple cultivation, over the entire season or longer

Fumigation: toxic and expensive

6. Your landscape bed is infested with morningglory and nutsedge so you have hired Joe-Bob's Fine Landscape Installations to renovate the bed and re-plant. Joe-Bob himself supervised the job. He sprayed the whole bed with Roundup (glyphosate) in September; two weeks later he rototilled the bed and incorporated (clean and good quality) compost. Then he planted the new shrubs and mulched the bed with clean, good quality shredded bark mulch.

The following summer your new landscape bed was again filled with nutsedge and morningglory. Why did Joe-Bob's bed preparation not control these weeds? (5 pts)

Morningglory and nutsedge had already produced seeds and tubers, respectively. The treatment did nothing to control the seeds or tubers.

7. When doing site preparation – from a weed control perspective, what is the most important question you must ask yourself? (2 pts)

Can I control these weeds after planting

8. How much organic mulch should be placed on top of a geotextile fabric? (2 pts)
- a. 1 inch
 - b. 2 inches
 - c. 4 inches
 - d. 8 inches

9. How much organic mulch should be used for weed control without a geotextile? (2 pts)

- a. 1 inch
- b. 2 inches
- c. 4 inches
- d. 8 inches

10. How do mulches control weeds? (2 pts)

Exclude light

11. What commonly used landscape mulch is toxic to pansies? (2 pts)

- a. shredded hardwood bark
- b. pine nuggets
- c. wood chips
- d. pine straw
- e. all of the above

12. Describe methods and steps for proper installation of a geotextile fabric. (5 pts)

1. control perennial weeds beforehand
2. dig a trench
3. anchor edges of fabric in trench with soil
4. plant the pull fabric over the plants
5. Anchor other edges
6. Mulch

Since most students could not give all steps I gave 1 bonus point on this one. This bonus was added after your grades were totaled and do not show up on your papers

13. Why are geotextiles not often used in landscapes (at least 5 reasons). (5 pts)

- expensive
- time consuming to install
- do not control perennial weeds
- perennial weeds grow through
- mulch on top degrades providing a place for weed seeds to germinate
- mulch on top must be removed and replaced periodically (about every 4 to 5 years)
- may retain too much moisture
- mulch slips off on slopes

14. What is solarization and why does it not work well in NC? (5 pts)

What: cover soil with clear plastic and use solar energy to heat the soil, killing many weed seeds and other pest organisms

In NC we have too much humidity and cloud cover. In dry climates like California and Arizona it works better because of the higher solar radiation. "Does not get hot enough in NC" was not a correct answer.

15. Describe proper site and soil preparation for fumigation (at least 5 steps of characteristics of the site)? (BEFORE you actually fumigate) (5 pts)

- Cultivate to 8 inches
- Soil free of clods
- Soil free of plant debris
- Moist but not wet
- At least 55 F
- Amend before fumigation

16. If you want to steam pasteurize a planting bed, what soil temperature do you need to achieve and for how long? (3 pts)

180 for 30 min

I gave partial credit for values close to these that would work

17. Which is the best fumigant but is no longer available except for special exempted uses? (2 pts)
- a. Gallery
 - b. Basamid
 - c. **Methyl Bromide**
 - c. Ronstar.
 - d. Surflan
18. Metham sodium and Basamid are two chemical soil fumigants. What is the main difference between these two products? (2 pts)
- a. Metham is more toxic than Basamid
 - b. Metham is a Granular formulation and Basamid is a Liquid
 - c. **Basamid is a Granular and Metham is a Liquid**
 - c. Basamid controls nutsedge tubers but Metham does not.
 - d. You can plant the Metham treated areas sooner than you can if it is treated with Basamid.
 - e. None of the above.
19. We advise covering the soil with a plastic tarp to improve the effectiveness of Metham sodium or Basamid. However, if you could not, or do not wish to use a tarp with these fumigants, what must you do after the fumigant application to ensure maximum effectiveness. (4 pts)
- irrigate after treatment and maintain a moist soil surface (irrigate daily) for 7 days partial credit for explanations that indicated you understood that the soil must remain “sealed” for a period of time after fumigation.**
20. Which geotextile will control nutsedge? (3 pts)
- biobarrier**

21. Dinitroaniline herbicides are commonly used for preemergence weed control in landscape ornamentals. Which dinitroaniline herbicide has the greatest likelihood of controlling nicandra (a summer annual, broadleaf weed)? (3 pts)

Surflan

22. Which of the dinitroaniline herbicides is safest on ornamentals, including herbaceous ornamentals? (3 pts)

Treflan or Preen

23. Why is this herbicide (from question 22) not used more often in landscape plantings? (3 pts)

Weakest herbicide on broadleaf weed control

24. You have just scouted your woody landscape bed and found that it is infested with a new weed -- tasselflower. This weed is a summer annual broadleaf that was introduced on contaminated nursery plants that were installed last year. Of the preemergence herbicides that we discussed in class, which one would have the greatest likelihood of controlling this weed? (3 pts)

Gallery

And, When would you apply this herbicide? (3 pts)

Late winter. Partial credit for early spring.

No credit for "spring". Remember spring officially starts in late March. If you wait until then to apply preemergence herbicides you are too late.

25. Why is XL labeled for use on pansies but Surlan is not? (because one is safe and the other isn't, is not an adequate answer) (2 pts)

XL is a granular, granular herbicides are safer than spray formulations.

26. What Preemergence herbicide controls annual grasses AND yellow nutsedge? (3 pts)

Pennant Magnum

27. What is the main difference between Preen and Preen Pro? **Be specific. AND,** why is that difference important in landscape beds? (5 pts)

Preen pro contains gallery + treflan;

Preen contains only treflan

Preen is safe on most ornamentals; Preen pro will likely injure many herbaceous ornamentals

28. In the context of these lectures – describe what is meant by using the KISS strategy for weed management in landscape beds? (only stating what the abbreviation stands for is not adequate) (3 pts)

Keep It Simple S_____

Choose the safest preemergence herbicide – one that will not injure ornamentals. Recognizing that this will not control many weeds but will be safe on ornamentals. Supplement with mulch, hand weeding and spot spraying escaped weeds. Example: mulch + Treflan + hand weeding.

29. Use the following tables to answer this question.

You have a bed planted to azalea, holly and lirope with tulips planted between plants for spring color. This bed is infested with horseweed (winter annual), chickweed, crabgrass and morningglory.

What herbicide (or herbicides) would you use AND when would you make the application(s) in order to control these weeds next year? (8 pts) [Note: you will be graded on whether or not your answer would have provided adequate control of each weed species and would be safe to ornamentals (+2 pts for each weed controlled and -4 pts for each ornamental damaged).]

Pendulum in Late summer for Chickweed and horseweed

Surflan in late winter (and again in early summer) for crabgrass and morningglory

Partial credit for Pendulum in late winter or Surflan in late summer.

30. If you did not have Morningglory in the bed – might your choice(s) be different? Explain (be specific). (4 pts)

Yes. In the late winter application; product choices would be greater. Pendulum could have been used in late winter for crabgrass

If you answered Pendulum in question 29, and answered no here, you received full credit as long as you explained your answer.

Weed Species	Barricade	Gallery	Pendulum	Pennant	Surflan	Treflan	XL
Bittercress, hairy	f	G	g	P	F	p	f
Chickweed, common	G	G	G	f	G	G	G
Crabgrass	G	P	G	F	G	F	G
Evening primrose	p	f	G	f	g	p	f
Groundsel, common	f	G	p	F	f-g	p	F
Henbit	G	G	G	f	G	g	G
Horseweed (marestail)	f	G	G	p	f	p	f
Morningglory	F	F	F	P	F-G	p	f
Phyllanthus	P	P	P	P	f	P	f
Yellow Woodsorrel (Oxalis)	G	G	G	p	G	f	F
Nutsedge, yellow	p	p	p	G	P	p	P

G = good control, F = fair control, P = poor control. Lower case letters indicate information based on research and experience of the author. Upper case letters indicate information derived directly from the herbicide label.

Species	Barricade	Gallery	Pendulum	Pennant	Surflan	Treflan	XL
Azalea	R	R	R	R	R	R	R
Dahlia			R		R	R	
Cotoneaster	R	R	R	R	R	R	R
Euonymus alata compacta		I	R	R	R	R	
Holly	R	R	R	R	R	R	R
Lirope	R	R	R	R	R	R	R
Marigold			R*	I	R	R	R
Magnolia	R	R	R	R	R	R	R
Pansy	I	I	I	R	I	R	R
Tulip			R		R	R	

R = registered (this species is on the herbicide label)

R* = registered on some species

I = injury has been reported on this species