

I. Single-Answer Multiple Choice (2 points each): Circle the **one** solution that answers each question or completes each sentence.

1. One of the taste tests we did in the past three weeks was
 - a. a two-way test comparing organically and conventionally produced milk.
 - b. a three-way test comparing organically and conventionally produced tortilla chips.
 - c. a three-way test comparing organically and conventionally produced tofu.
 - d. a two-way test comparing organically and conventionally produced cashews.

2. The WSU Compost Facility
 - a. manages much of the university's organic waste stream.
 - b. began operations in 1980.
 - c. composts its organic materials on an asphalt surface.
 - d. all of the above.
 - e. both a and c.

3. The dominant organic material added to the standard mixture at the WSU Compost Facility is
 - a. coal ash.
 - b. yard waste.
 - c. food waste.
 - d. animal manure and bedding.
 - e. shredded wood waste.

4. The food taste tests or sensory evaluations that we do in class are not truly scientific because we have not ensured that the foods we are testing
 - a. were grown in similar soil types.
 - b. were of the same variety and, if necessary, grown on the same rootstock.
 - c. were grown under similar environmental conditions yet different farm management systems.
 - d. all of the above.
 - e. both a and b.

5. The bedding compost mixture at the WSU Composting Facility needs to heat to temperatures in excess of _____, effectively pasteurizing the bedding and reducing pathogens.
 - a. 100°F.
 - b. 130°F
 - c. 140°F
 - d. 165°F

6. Green manure crops provide organic material to the soil which in turn
 - a. provides a slow-release store of plant nutrients.
 - b. improves plant root development.
 - c. decreases water holding capacity of the soil.
 - d. all of the above.
 - e. both a and b.

7. Under the National Organic Program, some synthetic materials are allowed which include
- dormant oil.
 - sulfur.
 - pheromones.
 - all of the above.
 - both b and c.
8. The WSDA Organic Food Program
- can certify producers outside Washington State.
 - is accredited by the National Organic Program.
 - has no general fund money and makes its revenue from grower application fees.
 - all of the above.
 - both b and c.
9. The National Organic Program
- has recordkeeping requirements for organic farmers.
 - prohibits irradiation of food.
 - permits the use of sewage sludge.
 - all of the above.
 - both a and b.
10. Labeling categories under the National Organic Program include
- 100% Organic.
 - Organic (95-100% Organic).
 - Made With Organic Ingredients (at least 80%).
 - all of the above.
 - both a and b.
11. Concerning the sale of organic food,
- it has grown at about 5% a year since 1991.
 - organic food sales represent about 2% of all food sales in the U.S.
 - natural food stores and natural grocery chains account for 80% of organic food sales.
 - all of the above.
 - both a and c.
12. One characteristic of an effective biocontrol agent is
- low reproductive rate relative to the prey.
 - tolerance of environmental conditions
 - a high degree of prey specificity.
 - all of the above.
 - both b and c.

13. There are three types of biocontrol which include

- a. classical.
- b. augmentative.
- c. conservation.
- d. all of the above.
- e. both a and c

14. An advantage of “soft” pesticides is that they

- a. are more pest specific.
- b. can be a ticket off the “pesticide treadmill”.
- c. kill pests but leave beneficial bugs.
- d. all of the above.
- e. both a and b.

15. Nitrogen mineralization in soil

- a. is highly temperature-dependent
- b. can be both a good thing and a bad thing
- c. is required for nitrogen release from organic matter
- d. all of the above
- e. both a and c

16. Organic weed control options include

- a. mechanical methods such as cultivation.
- b. biological methods.
- c. input substitution such as chemical methods.
- d. All of the above.
- e. Both a and b.

II. Multiple-Answer Multiple Choice (1 point for each answer): Each problem set below consists of one problem with four possible answers. At least one answer listed is correct but two, three, or four of the answers may be correct. Mark “T” (for true) for each answer that solves the problem correctly and “F” (for false) for each answer that is incorrect.

15-18. Concerning WSU Compost Facility,

___ 15. any water trying to run off the facility is diverted by dikes and collected in retention ponds.

___ 16. run-on water to the facility is permitted.

___ 17. materials are composted in rows for about 10 to 14 weeks.

___ 18. Compost is cured in static piles for 4 to 5 weeks after it has been composted in rows.

19-22. Concerning weed control management,

___ 19. it’s best to mechanically control weeds when they are large.

___ 20. it’s smart to know that weed seed emergence can occur at different depths for different weeds.

___ 21. It’s best if one does not let weeds come in on equipment.

___ 22. it’s best if one avoids letting weeds go to seed.

23-26. Subsurface drip irrigation

- 23. reduces water use compared to sprinkler or furrow irrigation.
- 24. Weed cover is greater with subsurface drip irrigation than with sprinkler irrigation.
- 25. has system costs to install that are similar to sprinkler system costs.
- 26. can have problems with the emitters clogging when water quality is low.

27-30. The WSU Organic Farm

- 27. sits on Tukey Horticultural Orchard.
- 28. is a Community Supported Agriculture (CSA) enterprise.
- 29. grows mostly fruit and some vegetables.
- 30. is in its second year of organic transition.

31-34. Home composting

- 31. can be made with layers of “greens” and “blues”
- 32. will degrade the herbicides approved for use on lawns
- 33. often involves shredding arthropods
- 34. benefits from a bin or enclosure that provides insulation

35-38. The WSU Compost Facility

- 35. sells compost directly to anybody in the Pullman-Moscow communities.
- 36. accepts organic wastes, such as lawn clippings and leaves, from the Pullman-Moscow communities.
- 37. tests different batches of its finished compost regularly.
- 38. produces a standard compost mixture with a finished 30-40:1, C:N ratio.

39-42. Finished WSU compost is

- 39. used on nearby agricultural land.
- 40. used as animal bedding.
- 41. sold wholesale to local nurseries.
- 42. a good soil amendment but not a good short-term fertilizer.

43-46. Proper hot composting relies on

- 43. primarily micro-organisms including bacteria and fungi
- 44. pH of at least 9.0
- 45. a small volume of material that can maintain airflow
- 46. both an active stage and curing

47-50. In the orange juice taste test in class,

- 47. we compared three different brands of orange juice.
- 48. more students voted the organic juice to have the best overall flavor.
- 49. the two conventional orange juices were generally less sweet than the organic orange juice.
- 50. one student noticed that the organic orange juice was not as fresh and affected the taste test.

51-54. Predators have different characteristics than parasitoids. Predators

- 51. eat many prey.
- 52. are larger than their prey.
- 53. live within their victim.
- 54. are deposited in their prey by their mothers.

55-58. Use of broad-spectrum insecticides

- 55. is not allowed in organic agriculture.
- 56. kills beneficial insects as well as pest insects.
- 57. creates conditions of a "pesticide treadmill".
- 58. is increasing due to "scouting" by conventional growers.

59-62. Concerning organic certification,

- 59. the WSDA Organic Food Program was around before the USDA National Organic Program.
- 60. the number of certified farmers is higher in western compared to central Washington State.
- 61. the NOP allows natural materials unless prohibited.
- 62. the WSU Center for Sustaining Agriculture and Natural Resources certifies organic food.

63-66. Legume crops commonly grown as green manure

- 63. include clovers
- 64. break disease cycles
- 65. can reduce the water supply for cash crops
- 66. keep providing nutrients for 2-3 years

67-70. Crops that were planted in the fall at the Tukey organic garden include

- 67. broccoli.
- 68. garlic.
- 69. carrots.
- 70. shallots.

71-74. "Remay" fabric row cover is used to

- 71. keep mice out of young plantings
- 72. hold moisture next to germinating seeds
- 73. inhibit weed growth
- 74. protect plants from frost

III. Fill-Ins (2 points for each space): Fill-in each space below with the correct word or words.

75. Incoming organic material to a compost facility is called _____. feedstocks
76. A strip of plants that serves as a home for beneficial beetles is called a _____. beetle bank
77. The use of living organisms (animals, plants, microorganisms) or their products to reduce or prevent growth and reproduction of weeds is called _____. biological weed control.
78. _____ eat a single prey species, whereas _____ tend to eat whatever prey they can catch. Specialists or parasitoids; generalists or predators
79. If a grower decides to organically certify her conventional farm, the transition period to become fully certified organic in the United States is ____ years. 3
80. Organic herbicides include brassicae seedmeals, corn gluten meal, _____, and _____. Acetic acid; essential oils; matran; clove oil; red thyme, cinnamon, or summer savory oil.
81. Incorporating organic matter with a high C:N ratio of 100:1 will cause net _____. immobilization
82. A planned sequence of various crops growing in a regularly recurring succession on one field is called _____. crop rotation
83. _____ is a cultural method of pest control in which the farmer intermixes a number of different crops in a small area instead of devoting the entire area to a single crop. Intercropping
84. Grazing animals, such as sheep, goats, _____, and _____, are often used to control weeds in organic farming systems. Chickens, geese, rabbits
85. _____ and _____ were planted at the Tukey organic farm for use as a cover crop. Ryegrass, vetch
86. _____ (sulfur, lime, dormant oil) was being sprayed at the Tukey organic farm for organic insect control.