

Utah State FFA Agronomy CDE 2004

Name or Number: _____ FFA Chapter: _____

Team: _____ Score: _____

There are 223 points possible, two points for each question except for the judging, seed analysis, and insect identification. The break down follows:

10 general agronomy production (multiple choice) 5 general soils (multiple choice) 5 general pesticides (multiple choice) 10 Questions on Fertilizers (multiple choice and fill in the blank) 30 weed identification 15 crop identification 10 seed identification 2 soil samples(2 points each)
1 class of crop/seed judging (10 points)
2 samples for seed analysis (10 points)
5 insects for identification (25 points)

Tie breaker: The 30 weed identification and then if needed, the seed identification will be used as tie breakers for individuals and teams.

General Crops Questions (Circle the best answer)

1. In Utah, seed certification is done by what organization?

- A. Utah Crop Improvement Association
- B. USDA
- C. Environmental Protection Agency
- D. Utah State University Extension
- E. None of the above

2. The fiber content in plants is important because:

- A. Increasing percentages of fiber in feeds increases the probability of bloat in ruminant animals
- B. As the % of fiber increases the % of protein usually increases
- C. The percentage of fiber generally decreases as plants mature
- D. Fiber is rapidly digested by all animals
- E. None of the above

3. A symbiotic relationship between Alfalfa plants and the bacteria *Rhizobium* provides what advantage(s) to the plant?

- A. Deeper roots for drought tolerance
- B. Supplies phosphorous to the plant from the air
- C. Supplies nitrogen to the plant from the air
- D. B&C
- E. All of the above

4. Which of the following best describes the edible plant part that is called a potato?
- A. Tuber
 - B. Modified stem
 - C. Seed
 - D. A & B
 - E. None of the above
5. Which of the following bags of turf grass seed are most likely to give you the greatest number of normal grass plants?
- A. Bag 1 100 % pure seed, 94 % germination, 0 % weed seed
 - B. Bag 2 98 % pure seed, 90 % germination, 2 % weed seed
 - C. Bag 3 95 % pure seed, 95 % germination, 5 % weed seed
 - D. Bag 4 95 % pure seed, 100 % germination, 5 % weed seed
6. Which of the following might apply to a bag of wheat seed?
- A. Labeling listing the percent of hard seed
 - B. The seed has been scarified to increase germination
 - C. The seed cannot be used for food or feed because it has been treated with a fungicide
 - D. A&B
 - E. All of the above
7. Farmer Brown wants to apply 1 lb/1000ft² of available Nitrogen to his lawn. How many acres of lawn does he have if his lawn is 4400ft²?
- A. 1 acre
 - B. 0.44 acres
 - C. 0.23 acres
 - D. 0.1 acres
 - E. 0.83 acres
8. Which of the following are reasons to rotate an alfalfa field to other crops for one or more years before replanting alfalfa?
- A. Disease
 - B. Alfalfa autotoxicity
 - C. Nematodes
 - D. A & C
 - E. All of the above
9. Which of the following would preserve forage for winter feed?
- A. Leave standing in the field as a winter stockpile
 - B. Haymaking
 - C. Ensiling
 - D. Making haylage
 - E. All of the above

10. Which of the following describes seed dormancy?
- A. Failure of a live seed to germinate from lack of water
 - B. Failure of a live seed to germinate from lack of proper temperature
 - C. Failure of a live seed to germinate from lack of light
 - D. Failure of a live seed to germinate even in ideal growing conditions
 - E. All of the above

Soils

11. Which of the following would reduce or correct soil compaction?

- A. Grazing wet pastures
- B. Deep ripping
- C. Irrigation
- D. Liming
- E. All of the above

12. Soils in Utah are generally described as:

- A. Acidic
- B. Low in organic matter
- C. Non calcareous
- D. Having deep top soil horizons
- E. B&C

13. Soil pH:

- A. Is a measure of acidity or alkalinity
- B. Does not affect soil fertility or the ability of plants to get nutrients
- C. Is the positive logarithm of the hydrogen ion concentration in solution
- D. Is a rating scale of 0 to 14, 7 being acidic.
- E. All of the above

14. A soil test recommends adding potassium to a field. Which fertilizer(s) could you use?

- A. 34-0-0
- B. 0-0-60
- C. 0-45-0
- D. Manure
- E. B&D

15. Clay soils have which of the following characteristics?

- A. They hold less water than other soil types
- B. They have a poor ability to hold nutrients
- C. They are less prone to becoming compacted
- D. They are sticky to the feel.
- E. All of the above

Pesticides

16. What is considered personal protective equipment for pesticide use?

- A. Shoes plus socks
- B. Long-sleeved shirt and long pants
- C. Chemical resistant gloves
- D. Protective eyewear
- E. All of the above

17. What is chemigation?

- A. Application of a fertilizer to a crop through the irrigation system
- B. Application of a pesticide directly to the roots underground
- C. Measuring the irrigation efficiency with a chemical
- D. Application of a pesticide through the irrigation system
- E. All of the above

18. What is an active ingredient in a formulated pesticide?

- A. The ingredient in a formulated product that accomplishes the pesticidal effect
- B. Is also known as or abbreviated (ai)
- C. The ingredient in a formulated product that usually has the highest percentage of all ingredients
- D. A and B
- E. All of the above

19. The label on a pesticide product:

- A. Should be read and understood before use
- B. Contains legal jargon that only an attorney needs to read
- C. Should be read completely regardless if understood
- D. Is required by law only to have mixing instructions and a listing of active ingredients
- E. Does not need to be available during use

20. A restricted use pesticide:

- A. Can only be used in emergencies
- B. Can be used by someone without a license under direct supervision of someone with a license
- C. Can only be used by government agencies
- D. Can be purchased by anyone but only used by someone with a license.
- E. None of the above

Fertilizers

21. In Utah, which government agency checks fertilizer bags and tests fertilizer to determine if it is legal for sale?

- A. Utah Department of Agriculture and Food
- B. United State Department of Agriculture
- C. Sheriffs
- D. Utah Department of Agriculture and Food
- E. All of the above

22. Farmer Brown wants to apply 1 lb/1000ft² of available Nitrogen to his 4400ft² lawn. If he purchases a yard and garden fertilizer 28-10-4, how much total product will he need for his lawn?

- A. 15.7 lbs
- B. 44 lbs
- C. 11 lbs
- D. 4.4 lbs
- E. 157 lbs

23. Micronutrients have the prefix micro because:

- A. They are less important than other nutrients
- B. They are used in lower amounts than other nutrients
- C. Their chemical structure is smaller than macro nutrients
- D. They are not essential to normal plant growth
- E. All of above

24. Soil Testing should be done on a composite of several samples from a field because:

- A. There is a large amount of soil needed for testing
- B. Soils can vary greatly even in a small field
- C. Properly collected composite samples represent the field and save lab costs.
- D. B & C
- E. All of the above

25. Soil testing for Nitrogen is not always recommended because:

- A. Soil samples require special handling procedures
- B. Nitrogen does not move with in the soil and does not change much
- C. Nitrate tests are relatively expensive
- D. A & C
- E. All of the above

Questions 26-30

Farmer Brown plans on planting barley for grain this spring. He has a medium growing season and plans on a normal yield goal of 100 bushels. He did a soil test this fall and came to you with the results. He wants an interpretation and recommendations for how much fertilizer (if any) he should apply. Complete interpretations and recommendations for P and K. Fill in recommendations for Nitrogen based on yield goal (Note: He did not test for N).

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Insect, Plant disorders, Weeds, and Crop Identification

Directions

Answers are provided at the side, put the correct number of the item in the blank provided. If you cannot find the answer you may write it. Please note Weeds of the West will be consulted to validate all common names.

Insects (Choose one and write the number in the blank)

21. _____	1. grasshopper
22. _____	2. armyworm
23. _____	3. aphid
24. _____	4. ladybug(larvae)
25. _____	5. leafhopper
	6. weevil
	7. Mormon Cricket
	8. cutworm
	9. Minute Pirate Bug

Plant/Soil Disorders (Choose one and write the number in the blank)

26. _____	1. Frost
27. _____	2. Nutrient Deficiency
28. _____	3. Herbicide Damage
29. _____	4. Insect Damage
30. _____	5. Alkaline Soil
	6. Disease

Weed Identification

31. _____	1. Barnyardgrass	37. Puncturevine
32. _____	2. Bermudagrass	38. Quackgrass

33. _____	3. Bindweed, field	39. Ragweed, Perennial
34. _____	4. Brome, downy	40. Rye
35. _____	5. Burdock	41. Shepardspurse
36. _____	6. Cocklebur	42. Small seed false flax
37. _____	7. Dandelion, Common	43. Sowthistle
38. _____	8. Dock, curly	44. Spurge, Leafy
39. _____	9. Dodder	45. Mallow, Common
40. _____	10. Field Pennycress	46. Milkweed
41. _____	11. Flixweed	47. Mullen
42. _____	12. Foxtail, green	48. Nutsedge, Yellow
43. _____	13. Goatgrass, Jointed	49. Oats, Wild
44. _____	14. Halogeton	50. Pigweed, Prostrate
45. _____	15. Hemlock, Poison	51. Pigweed, Redroot
46. _____	16. Hemlock, Water	52. Plantain
47. _____	17. Houndstongue	53. Povertyweed
48. _____	18. Johnsongrass	54. Puncturevine
49. _____	19. Knapweed, Spotted	55. Quackgrass
50. _____	20. Knapweed, Russian	56. Ragweed, Perennial
51. _____	21. Knapweed, Squarrose	57. Rye
52. _____	22. Knotweed, Prostrate	58. Shepardspurse
53. _____	23. Kochia	59. Small seed false flax
54. _____	24. Lambsquarters	60. Sowthistle
55. _____	25. Lettuce, Blue	61. Spurge, Leafy
56. _____	26. Lettuce, Prickly	62. Starthistle, Yellow
57. _____	27. Locoweed	63. Storksbill
58. _____	28. Mallow, Common	64. Sunflower
59. _____	29. Milkweed	65. Teasel
60. _____	30. Mullen	66. Thistle, Bull
	31. Nutsedge, Yellow	67. Thistle, Canada
	32. Oats, Wild	68. Thistle, Musk
	33. Pigweed, Prostrate	69. Thistle, Russian
	34. Pigweed, Redroot	70. Thistle, Scotch
	35. Plantain	71. Whitetop(Hoary Cress)
	36. Povertyweed	72. Woad, Dyers

Crop Identification

61. _____	1. Alfalfa
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62. _____	2. Bean
63. _____	3. Barley (6 row)
64. _____	4. Barley (2 row)
65. _____	5. Barley (Hooded)
66. _____	6. Corn, pop
67. _____	7. Corn, field
68. _____	8. Corn, sweet
69. _____	9. Lentil
70. _____	10. Millet
71. _____	11. Oats
72. _____	12. Orchardgrass
73. _____	13. Pea
74. _____	14. Rye
75. _____	15. Sorghum
76. _____	16. Sorghum Sudan
77. _____	17. Soybean
78. _____	18. Sunflower
79. _____	19. Triticale
80. _____	20. Wheat

Seed Identification

81. _____	1. Alfalfa
82. _____	2. Clover, Sweet
83. _____	3. Oat
84. _____	4. Orchardgrass
85. _____	5. Ryegrass
86. _____	6. Pigweed
87. _____	7. Thistle, Canada
88. _____	8. Wheat, red
89. _____	9. Wheat, white
90. _____	10. Wheatgrass

Crop/Seed Judging

Seed Class

Identify the sample and rate for best seeding a barley (2 Point each)

91. _____	Rank _____	1. Clean seed good Quality
92. _____	Rank _____	2. Poor seed, weeds present
93. _____	Rank _____	3. Noxious weed present
94. _____	Rank _____	4. Naked oats
95. _____	Rank _____	5. Other crop seed present