

2007 FFA
Key-----State Crops Contest-----Key
Crop production, management test

Name: _____

Chapter: _____

Contestant No. _____

Note: Mark the correct answer on the answer sheet. One answer per question.

CORN

1. Corn is a member of which plant family?
 - a. Euphorbiaceae
 - b. Graminaceae
 - c. Malvaceae
 - d. Polygonaceae

2. The plant nutrient which is typically applied at about one (1) pound per expected bushel yield per acre is:
 - a. Calcium
 - b. Nitrogen
 - c. Phosphorus
 - d. Potassium

3. The life cycle of corn is:
 - a. Biennial
 - b. Perennial
 - c. Spring annual
 - d. Winter annual

4. In Minnesota, before yield, the most important factor in selecting a corn hybrid to plant is:
 - a. Lodging resistance
 - b. Relative maturity rating
 - c. Test weight
 - d. Roundup Ready

5. The official standard test weight for a bushel of corn for grain marketing is:
 - a. 32
 - b. 48
 - c. 56
 - d. 60

6. The highest corn yields in Minnesota are typically obtained from plantings made:
 - a. April 20-May 1
 - b. May 1-May 20
 - c. May 20-June 6
 - d. June 6-June 20

7. Establishing a uniform stand of corn is enhanced when high quality seed is planted at the optimum date and at a depth of:
 - a. 3/4 to 1 inches
 - b. 1 to 2 inches
 - Ⓒ 1 1/2 to 2 1/2 inches
 - d. 2 1/2 to 3 1/2 inches
8. Seeding rate for corn for grain varies across the state being highest in the southeast and lowest in the west central region. A good average for central Minnesota would be:
 - a. 18,000-22,000
 - b. 22,000-26,000
 - Ⓒ 26,000-28,000
 - d. 28,000-34,000
9. Corn is rather tolerant of soil pH but the optimum level for top production is:
 - a. 4.5 - 5.5
 - b. 5.5 - 6.5
 - Ⓒ 6.5 - 7.5
 - d. 7.5 - 8.5
10. If the soil is acidic, the pH can be made more neutral by the addition of:
 - Ⓐ agricultural lime
 - b. barnyard manure
 - c. green manure
 - d. flowers of sulfur
11. The feed value of corn silage is primarily determined by:
 - a. the number of plants per acre
 - Ⓑ the grain content of the silage
 - c. the tonnage (yield) of silage per acre
 - d. the type of storage, i.e. pit, bunker, stave or glass lined
12. Corn for grain is safe from frost, i.e. no yield loss will occur when:
 - a. the corn is at the dent stage
 - b. the kernel is at 1/2 milk stage
 - c. the leaves are drying
 - Ⓓ the black layer has been formed
13. This nutrient is very important to improve stalk strength and lodging resistance in corn:
 - a. Boron
 - b. Nitrogen
 - c. Phosphorus
 - Ⓓ Potassium
14. Determining the amount of fertilizer to apply, especially P and K, is best based on:
 - a. crop rotation
 - b. seeding rate
 - Ⓒ soil test
 - d. soil texture

15. Which of the following is NOT required to make good corn silage?
- Ⓐ added energy such as ground ear corn
 - b. high degree of compaction to exclude oxygen
 - c. moisture content of about 65%
 - d. harvesting near physiological maturity
16. The optimum moisture content of the whole plant to make high quality corn silage is:
- a. 45%
 - b. 55%
 - Ⓒ 65%
 - d. 75%
17. The highest "safe" storage moisture for shelled corn in the fall is:
- a. 10%
 - b. 13.5%
 - Ⓒ 15%
 - d. 17.5%
18. Which 4-year rotation sequence with corn will have the highest cash returns per acre?
- a. Alfalfa, alfalfa, soybeans, corn
 - Ⓐ Corn, corn, corn, corn
 - c. Oats, alfalfa, alfalfa, corn
 - d. Wheat, canning peas, corn, corn
19. You are doing a yield check in a field. The average of 3 samples, 20 feet long and 30 inch rows is 12.4 lbs of ears unadjusted for moisture. Approximately how many pounds per acre is this field yielding?
- a. 900
 - b. 3600
 - Ⓒ 10800
 - d. 22320
20. If the field you were checking for yield was at 22% moisture and the yield was 196 bu, how many bushels would you have after drying to 15.5%?
- a. 152
 - b. 179
 - Ⓒ 182
 - d. 185
21. The base temperature for corn for growth and calculating growing degree days (GDD's) is:
- a. 40 F
 - Ⓐ 50 F
 - c. 60 F
 - d. 70
22. Corn seed is treated with ? to protect it when planted into cold and wet soils.
- Ⓐ fungicide
 - b. herbicide
 - c. insecticide
 - d. miticide

23. The first structure to emerge above the soil surface during germination is:
- a. coleoptile
 - b. cotyledon
 - c. hypocotyl
 - d. mesocotyl
24. The corn insect that can do damage to both silks and roots is:
- a. army cutworm
 - b. cutworm
 - c. corn borer
 - d. corn root worm
25. Yield losses due to weeds in corn increase rapidly when control is delayed beyond corn emergence:
- a. 2 weeks after emergence
 - b. 4 weeks after emergence
 - c. 6 weeks after emergence
 - d. 8 weeks after emergence

Barley

26. Barley belongs to a group of crop plants known as:
- a. cereals
 - b. dicots
 - c. oil crops
 - d. pulses
27. Barley is one of the major crops of the world because of its use in:
- a. tofu
 - b. feeds
 - c. bread
 - d. brewing (beer)
28. The market class of barley most important in Minnesota is:
- a. Barley
 - b. Six-rowed malting
 - c. Six-rowed blue malting
 - d. Two-rowed barley
29. The disease of barley which has caused great economic loss to Minnesota farmers during the last 15 years and produces a toxin called "vomitoxin" is:
- a. leaf rust
 - b. ergot
 - c. covered smut
 - d. scab
30. Barley pearling is done to make the grain ready for human consumption because unlike wheat the ___ are not removed in threshing.
- a. auricles
 - b. glumes
 - c. lemma and palea
 - d. lipids

31. When selecting a variety of barley to plant in Minnesota after malt type, yield and disease resistance you should select a variety that has:
- early maturity
 - high protein
 - resistance to cyst nematode
 - short straw
32. Barley typically can be planted when the soil temperature is greater than:
- 30° F
 - 40° F
 - 50° F
 - 60° F
33. When comparing barley seeded at 60 lbs. and 180 lbs. per acre it was observed that the number of heads per acre at harvest differed by only 10%. This is because of:
- higher germination at 60 lbs.
 - loss of plants at 180 lbs.
 - tillering capacity at 60 lbs
 - more seeds per pound in the 60 lbs. treatment
34. The root system of barley is best described as:
- branched
 - fibrous
 - shallow
 - tap
35. Seeding rates of barley in Minnesota vary, but the recommended rate is:
- 25 seeds per sq. foot
 - 35 seeds per sq foot
 - 45 seeds per sq. foot
 - 55 seeds per sq foot
36. The first structure to emerge from a germinating seeds is the:
- adventitious roots
 - coleoptile
 - pericarp
 - radical
37. Due to an herbicide carryover problem in the soil you have a spotty and reduced stand density. You planted with a goal of 1,300,000 plants per acre. Under which of the following conditions would you **not** replant or replant to another crop.
- The date is May 20 and you have a uniform but low stand of 700,000 plants per acre
 - The date is May 20 and you observe bare spots of 3-6 feet square and with about 800,000 plants per acre.
 - It is May 20, severe crusting occurred following planting and before emergence barley, This has compounded the herbicide damage in some areas and caused near zero stand were ponding occurred.
 - The date is May 5 and you have applied 75 pounds of N as anhydrous ammonia pre-plant. There does not seem to be any barley over the injector rows. The overall stand is spotty and averages 750,000 plants per acre.

38. Normal seeding depth of barley is:
- a. 3/4 inch
 - b. 1 1/2 inch
 - c. 2 1/2 inch
 - d. 3 1/2 inch
39. Delaying barley planting into mid-May to early June typically results in low grain yields due to:
- a. low tillering
 - b. reduced kernel number per head
 - c. reduced kernel weight
 - d. all of the above
40. After taking a soil test, the final decision on the amount of fertilizer to apply for barley will be determined by:
- a. crop use
 - b. previous crop
 - c. yield goal
 - d. all of the above
41. You have determined that 125 lbs. of nitrogen is needed for your crop. For maximum crop response and minimum environmental consequence (leaching) you should apply the fertilizer:
- a. 100% in the fall to permit early planting
 - b. 100% at planting time
 - c. 50% at planting and 50% at tillering stage
 - d. 50% at planting and 50% at early heading stage
42. Leaching of applied nitrogen is likely to be greatest on which soil:
- a. loamy clay
 - b. loamy sand
 - c. sandy loam
 - d. silt loam
43. A 20-foot grain drill equipped with double disk openers spaced 6" apart dropped 2 lbs. of seed in 50 feet. The calculated seeding rate per acre is:
- a. 40 lbs
 - b. 87 lbs
 - c. 100 lbs
 - d. 200 lbs
44. At the "boot" stage of development the plant is near:
- a. heading
 - b. maturity
 - c. spiking
 - d. tillering
45. Cool season grassy weeds, such as wild oats can best be controlled by non-chemical methods through:
- a. cultivation
 - b. delayed planting
 - c. early planting
 - d. increased seeding rate

46. Crop loss due to hail is most likely to be greatest if the storm occurs at which growth stage?
- a. emergence
 - b. tillering
 - c. joining
 - Ⓓ heading
47. Barley harvested by swathing (windrowing) can be harvested any time after ___?___ without suffering any yield loss.
- a. 3 weeks after heading
 - b. after hard dough
 - Ⓒ when the green color is out of the head
 - d. when the flag leaf is dried up
48. The weed species most difficult to control in spring barley are:
- Ⓐ annual grasses
 - b. winter annual grasses
 - c. annual broadleaf species
 - d. perennial broadleaf species
49. High quality barley for malting purposes should have:
- Ⓐ protein of 12% and test weight of 47
 - b. protein of 14% and test weight of 43
 - c. protein of 15% and test weight of 50
 - d. protein of 16% and test weight of 42
50. In marketing barley, "dockage" refers to:
- a. non-malt quality barley
 - b. price discount for high moisture
 - c. other grains such as wheat and rye
 - Ⓓ machine separable coarse and fine matter not barley