

**PTS**

The following questions were submitted by students. In some cases I have modified for clarity or added to the question.

- 2 1. Alfalfa varieties should be selected based on the following four characteristics \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
- 3 2. Name three alfalfa insect pest commonly found in this area AND give the typical symptoms of the insect.
- 1 3. What is sod-seeding?
- 2 4. Define contractile growth AND why is contractile growth important for alfalfa?
- 2 5. How many plants/ft<sup>2</sup> will give near maximum alfalfa yield during the first harvest year if uniformly distributed \_\_\_\_\_? Recommended seeding rate for alfalfa is \_\_\_\_\_ lb/a, but assuming a normal emergence rate, a seeding rate of only \_\_\_\_\_ lb/a would give adequate plants.
- 1 6. The two most common alfalfa diseases found in North Dakota are \_\_\_\_\_ and \_\_\_\_\_ (some resistance exist for these diseases, but it is not complete).
- 1.5 7. Why are companion crops used to establish alfalfa or grass forages \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
- 1.5 8. Name three reasons to delay harvest beyond the optimum stage for harvest \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
- 1 9. (TRUE or FALSE) Bromegrass and crested wheatgrass transplanted at 1 plant/ft<sup>2</sup> produced less forage yield than higher plant densities in the second year of production.
- 1 10. The lower forage quality of a grass plant compared with alfalfa is due to this chemical component \_\_\_\_\_.
- 1 11. Oat is the most competitive companion crop for both light and soil water; yet, it is the most common companion crop used. Why?
- 1 12. What is "common" alfalfa seed?

- 1 13. (TRUE or FALSE) Forage quality of alfalfa increased with increasing plant density since the stems were finer.
- 1 14. The least competitive companion crop for both moisture and light is (a. Barley, b. Wheat, c. Flax, d. Oat)
- 3 15. Six diseases have been emphasized by alfalfa plant breeders and have been the primary distinguishing differences among most of the new varieties. These diseases are?
- 1 16. A fully productive field of alfalfa will have at least this many stems/ft<sup>2</sup> \_\_\_\_\_.
- 1 17. Why is a significant rainfall necessary following harvest on old alfalfa fields to get regrowth?
- 1 18. Why is a firm seedbed so important in establishing small-seeded legumes and grasses?
- 2 19. Why is plant maturity the most important characteristic affecting alfalfa quality?
- 1 20. Why are mid September seedings of alfalfa generally not successful?
- 5 21. List six advantages and four disadvantages of no-till establishment of alfalfa.
- 2 22. What is a crown AND how does the crown of an alfalfa plant differ from the crown of a wheat plant?
- 3 23. What factors must a producer pay attention to when trying to establish a forage crop?
- 1 24. To enhance the forage quality of alfalfa, breeders must affect this physiological characteristic (not chemical characteristic) \_\_\_\_\_.

- 1 25. When is rain damage the worst and when the least?
- 1.5 26. The two characteristics used to estimate forage quality by the PEAQ system are \_\_\_\_\_ and \_\_\_\_\_. Using the PEAQ system, at what RFV should harvest begin \_\_\_\_\_?
- 2 27. Why is the recommend harvest maturity for the second and third harvest of alfalfa at more advanced maturity stages than the first?
- 1 28. Most grasses can overwinter adequately if they reach this leaf growth stage \_\_\_\_\_.
- 1 29. (TRUE or FALSE) The protein content of the weathered portion of a bale decreases due to leaching.
- 1 30. Flemish alfalfas were the source of what desirable characteristic in alfalfa today?
- 1 31. Alfalfa cultivars rated as highly resistant for a particular disease has (a. 25, b. 50, c. 75, d. >90) % of the plants resistant.
- 2.5 32. Name five factors that affect the recommended planting rate.

The following questions you can blame me for!

- 1 33. The alfalfa disease characterized by tap roots that have been cut off and generally is found on poorly drained soils with good rainfall is \_\_\_\_\_.
- 1 34. I use to recommend selecting an alfalfa variety based on certified seed. Why has this changed?
- 2 35. A pasture alfalfa like Alfagraze has been selected for persistence under grazing. What plant characteristics are associated with tolerance to grazing?
- 1 36. Two excellent sources of written information on alfalfa varieties are \_\_\_\_\_ and \_\_\_\_\_.
- 3 37. Why is it difficult for me to recommend a given alfalfa cultivar to a producer even though we presently are testing over 60 newly released cultivars (two reasons)?
- 1 38. What is an annual alfalfa in this area AND give an example of an annual alfalfa variety.

- 1 39. An insect pest that approached economic levels for the first time in 1999 in North Dakota characterized early by a very small shot-hole appearance, then by a comma-shaped white symptom on the leaf, and then by leaf tips to whole leaflets drying back is \_\_\_\_\_.
- 2 40. The best weed control of annual grass and broadleaf weeds in seedling alfalfa can be obtained with this herbicide if ALS resistant kochia or black nightshade is not present \_\_\_\_\_. If using this herbicide, what adjuvant is recommended \_\_\_\_\_ and it should be applied at this growth stage \_\_\_\_\_? If ALS resistant kochia is present, then what is the best weed control program for clear-seeded alfalfa ?
- 1 41. The best herbicide for broadleaf weed control in CRP seedings that use the wildlife mixture is \_\_\_\_\_.
- 1 41. (TRUE or FALSE) Excellent stands of alfalfa can be established under a warm-season species like sudangrass as long as the sudangrass is harvested timely.
- 1 42. (TRUE or FALSE) The target species in weed control programs should be the grass species because many broadleaf weeds have as good or better forage quality as alfalfa in early growth stages.
- 1 43. (TRUE or FALSE) It is important to increase the seeding rate of alfalfa to 10 to 12 lb/a when establishing alfalfa with a companion crop since the companion crop is competitive with the alfalfa.
- 1 44. (TRUE or FALSE) Dormant seeding of alfalfa is an excellent method to establish alfalfa whereas dormant seeding of grasses is discouraged due to potential winter kill of the seedlings.
- 1 45. Many grass seeding rates are calculated by NRCS based on how many seeds/ft<sup>2</sup> \_\_\_\_\_?
- 1 46. (TRUE or FALSE) Dr. Dave Franzen, extension soil specialist, has recently found that even here in North Dakota where soils are considered high in soil pH that liming may be necessary for maximum production of alfalfa.

BONUS - 2 pts

If soybean oil meal sells for \$200/ton, what is the value of alfalfa hay used as a replacement for this protein supplement? Give all assumptions made to calculate the alfalfa hay value.

**Upon my honor, I have neither given or received aid in writing this exam.** \_\_\_\_\_