

FIELD CROP PEST CONTROL

Study Questions to help you prepare for the TDA EXAM

INSTRUCTIONS: Have a highlighter and a colored pen handy. As you study through the text, look for the answers to the following questions and mark them in the book or on the sheet provided. Also, as you study through the text, ask yourself, "If I know this information will I be a better applicator?" If you answer "YES" that information would also be a good question for the test. Make a note of it! In addition to these study questions complete the practice questions in the manual on pages 16-17, 28-29, and 59-60. In order to allow for quick grading, most questions on the TDA Exam are in the form of Multiple Choice or True and False; but this is not necessarily so.

COTTON INSECTS

1. List six (6) major factor to consider when planning an insect control program. **Pg. 1**
2. List the three (3) most common early season pests which attack cotton at various times from the seedling stage through the appearance of the first 1/3 grown square stage. **Pg. 1**
3. Describe how thrips cause damage to cotton tissue. **Pg. 2**
4. When is cotton most vulnerable to thrips damage? **Pg. 2**
5. Describe the cotton fleahopper adult - color, spots, etc. **Pg. 2**
6. Give the most critical time for fleahopper damage on cotton. **Pg. 2**
7. Explain how to sample a field for cotton flea-hoppers - numbers of plants, part of plant examined, locations in the field, etc. **Pg. 2**
8. When should insecticides be applied if it is determined that an overwintered boll weevil application is needed in a cotton field? **Pg. 2**
9. List three (3) key insect pests that may damage cotton during the mid and late season. **Pg. 3**
10. What percent of punctured squares due to boll weevil in a cotton field during the first 6 weeks of fruiting requires treatment to be performed to prevent economic damage of the crop. **Pg. 3**
11. Where does the cotton bollworm usually lay its eggs? **Pg. 3**
12. Name eight (8) beneficial insects that play an important role in reducing bollworm eggs and

larvae on cotton. **Pg. 4**

13. What happens to the economic threshold treatment level after initiation of insecticide applications for cotton bollworm control? **Pg. 4**
14. When does chemical control of bollworms (and tobacco budworms) in cotton lose its effectiveness? **Pg. 4**
15. Describe how to inspect the field for bollworm BEFORE the cotton plant blooms. **Pg. 4**
16. Describe how to inspect the field for bollworm AFTER the cotton plant blooms. **Pg. 4**

GRAIN SORGHUM INSECTS

17. List two (2) key insect pests of sorghum. List (6) occasional insect pests in sorghum? **Pg. 4**
18. When does adult sorghum midge move from Johnsongrass and other wild hosts into grain sorghum as a pest? **Pg. 4**
19. Describe the adult midge - color, size, type, etc. **Pg. 4**
20. When is grain sorghum susceptible to sorghum midge damage? **Pg. 4**
21. What part of the plant do hatching larvae of midge feed on? What is the appearance of the damaged plants? **Pg. 5**
22. Name the insect stage when insecticide applications to control midge are most effective. **Pg. 5**
23. When does grain sorghum become safe from midge damage? **Pg. 5**
24. The manual says that the greenbug is not a true bug, what is it? **Pg. 5**
25. The greenbug and the corn leaf aphid are very similar in appearance, explain how to tell the two apart. **Pg. 5**
26. Where do greenbugs feed and what effect does their feeding have on the sorghum leaf. **Pg. 5**

27. Do greenbug populations develop resistance to insecticides? If they do where is this most common? **Pg. 5**
28. When should grain sorghum plants less than 6 inches in height be treated for greenbugs? **Pg. 5**
29. Explain how to tell when insecticide applications for greenbug control should be made during the boot to hard-dough stage in grain sorghum. **Pg. 6**
30. Name beneficial insects that play a major role in reducing greenbug populations in sorghum. **Pg. 6**
31. Give the name used for aphids parasitized by a wasp. **Pg. 6**
32. Is there any difference in the economic threshold for greenbug resistant sorghum varieties and susceptible sorghums? **Pg. 6**
33. What part of the sorghum plant does the sorghum webworm attack? **Pg. 6**
34. Describe the method used to inspect for the presence of sorghum webworm during the bloom to hard-dough stage. **Pg. 6**

SMALL GRAIN INSECTS

35. Name four (4) crops included in the small grain group. **Pg. 7**
36. List three (3) insect pests that attack small grains. **Pg. 7**
37. List the population level required for greenbugs to cause damage to small grain plants when:
Pg. 7
 - 3 to 6 inches tall
 - 4 to 8 inches tall
 - 6 to 16 inches tall
38. When would you expect winter grain mite damage on small grains to be most severe? **Pg. 7**
39. Give the time that the winter grain mite feeds. Where are they at other times? **Pg. 7**
40. Describe the damage caused on small grain crops by the winter grain mite. **Pg. 7**

41. List two extremely destructive foliage feeders of small grains. **Pg. 7**
42. Explain how you would recognize fall armyworm damage on small grain crops. **Pg. 8**
43. Tell how the armyworm damages small grain plants. **Pg. 8**

FIELD CORN INSECTS

44. List items that should be included in an effective integrated pest management control program in corn. **Pg. 8**
45. Describe the eggs of the Southwestern corn borer when first laid and before hatching. **Pg. 8**
46. Explain how the southwestern corn borer damages corn. **Pg. 8**
47. When is chemical control of the Southwestern corn borer usually required? **Pg. 8**
48. What percentage of the stalks are infested with eggs and small larvae of Southwestern corn borer when insecticide applications for control are recommended? **Pg. 8**
49. Where are the eggs of Banks grass mites infesting corn laid? **Pg. 9**
50. When does the Banks grass mite populations in corn generally increase? **Pg. 9**
51. Where do infestations of mites on a corn plant start? **Pg. 9**
52. What type of weather favors a rapid buildup of Banks grass mite in corn? **Pg. 9**

RICE INSECTS

53. List four (4) key insect pests of rice. **Pg. 9**

54. Name the most common and the most destructive pest of rice. **Pg. 9**
55. When does the majority of rice water weevil egg laying takes place? **Pg. 9**
56. Explain how the rice water weevil causes its greatest economic damage. **Pg. 9**
57. When should you expect to find peak root maggot populations in rice? **Pg. 9**
58. When should the application of a labeled granular insecticides for control of rice water weevil be made? **Pg. 10**
59. Name an important insect pest that lowers quality rather than actually reducing yield. **Pg. 10**
60. Explain how the rice stink bug damages rice? **Pg. 10**
61. Explain what is meant by “pecky rice”, what insect causes it , and how is it caused? **Pg. 10**

FORAGE CROP INSECTS - (legumes and grasses)

62. Describe the pea aphid - color, size, etc. - and tell how they may stunt or kill a plant. **Pg. 11**
63. What population of spotted alfalfa aphids would indicate a need for insecticide treatment of:
Pg. 12
A. seedling alfalfa
B. established alfalfa
64. Explain how to sample alfalfa for Lygus bugs and give the threshold numbers at green-bud, bloom, and soft-dough stages. **Pg. 12**
65. Describe color changes in the newly hatched, older, and mature alfalfa weevil larvae. **Pg. 12**
66. How many generation(s) of the alfalfa weevil is/are produced per year in most parts of Texas.
Pg. 12
67. Name two key pests of native pastures and forage sorghum that can cause excessive foliage loss.

Pg. 13

68. When should grasshopper hatching areas be checked to determine if the economic threshold has been reached and to avoid damage to forage in native pastures, before the grasshoppers disperse into larger areas. **Pg. 13**

PEANUT INSECTS

69. List three (3) major insect pests of Texas peanuts. **Pg. 13-14**
70. When are dryland peanuts particularly susceptible to damage from the lesser cornstalk borer? **Pg. 13**
71. When do burrowing bugs migrate into peanut fields? **Pg. 13**
72. Explain how burrowing bugs damage peanuts. **Pg. 13**
73. How do peanut plants respond to foliage feeders? **Pg. 14**

SOYBEAN INSECTS

74. Give examples of insects that feed on soybean a) stems or stalks, b) foliage, and c) beans or pods - distinguish between major and minor pest species. **Pg. 14 - 15**
75. Describe the damage caused to soybeans by the three-cornered alfalfa hopper. **Pg. 14**
76. What part of the soybean plant does each of the insects listed below feed on? **Pg. 14 - 15**
(bean leaf beetle, three-cornered alfalfa hopper, green cloverworm, velvetbean caterpillar, and corn earworm)
77. Name an insect that does not damage the soybean but can be beneficial. **Pg. 15**

FCPC - DISEASE pg. 18***PEANUT DISEASES***

78. List four (4) vectors that cause field crop diseases. **Pg. 18**

79. Why are symptoms so important in recognizing diseases? **Pg. 18**
80. Name the most common disease of peanuts. **Pg. 18**
81. Name the kind of disease organism that causes peanut leaf spot, rust, and web blotch. **Pg. 18**
82. What effect does warm temperatures and high humidity have on foliar diseases development on peanuts? **Pg. 18**
83. Describe the symptoms caused by root lesion nematodes entering peanut pods. **Pg. 19**
84. Name the organism that causes speckling of pods in peanuts. Can damage be severe enough to cause a yield loss? **Pg. 19**
85. Describe the damage that may be caused by root knot nematodes. **Pg. 19**
86. What type of organism causes *southern corn leaf blight* (*southern blight*). **Pg. 20**

SOYBEAN DISEASES

87. Explain how using high quality seed is related to reducing soybean diseases. **Pg. 20**
88. Name a disease of soybeans that develops in hot dry weather or when plant growth is retarded by *unfavorable* weather conditions. **Pg. 20**
89. List three (3) control measures for charcoal rot or summer wilt on soybeans. **Pg. 20**

GRAIN SORGHUM DISEASES

90. Are diseases in grain sorghum easy to controlled chemically? **Pg. 23**
91. Name a soil-borne fungal disease that causes the grain sorghum plant to be sterile (as a result no heads are formed and consequently yields are totally lost on infected plants). **Pg. 23**
92. Name the insect that transmits the virus that causes maize dwarf mosaic on grain sorghum. **Pg. 24**

93. Describe the symptoms of maize dwarf mosaic (see three different paragraphs). **Pg. 24**
94. Describe the conditions that cause head mold to occur in sorghum after maturity. **Pg. 24**

COTTON DISEASES

95. Name the primary type of organism responsible for causing cotton seedling disease. **Pg. 25**
96. Explain how wet weather blight and Ascochyta blight on cotton are related. **Pg. 25**
97. Describe the symptoms of fusarium wilt - East Texas (and verticillium wilt - West Texas). **Pg. 25**
98. Cotton root rot is a fungus that affects cotton and how many other species of plants? **Pg. 25**
99. You would expect encounter cotton boll rot under what kind of field conditions? **Pg. 25**

RICE DISEASES

100. Explain the effect of high fertility levels and increased organic matter and intensive farming practices on the incidence and severity of rice diseases. **Pg. 25 - 26**
101. Name the *most prevalent* and *economically damaging* rice disease occurring in Texas. **Pg. 26**

FRUIT and VEGETABLE PEST CONTROL - INSECTS page 30 - 40 and **PLANT DISEASES** page 41 - 52 is covered on another Exam therefore is NOT covered in this study guide.

WEED CONTROL - CROPLAND

102. Explain how a soil-applied herbicide rate required for weed control may be related to the amount of rainfall in a particular area. **Pg. 53**

103. Herbicides can leach into the soil and break down more _____ in higher rainfall areas. **Pg. 53**
104. Explain the effect that high humidity may have on herbicide absorption after application to weed foliage. **Pg. 53**
105. Explain the effect a surfactant may have on the leaf absorption of certain herbicides. **Pg. 53**
106. Name soil type that is most likely to “tie up” a herbicide and prevent it moving through the soil profile? What other component of soil has many active sites able to tie up a herbicide. **Pg. 53**
107. List three (3) annual warm season weeds. **Pg. 54**
108. List one grassy perennial warm season weed. **Pg. 54**
109. Explain why rainfall or irrigation is required after the application of preemergence herbicides. **Pg. 55**
110. Name two (2) types of chemicals considered to be harvest aid chemicals. **Pg. 58**
(Note this is NOT the same as a harvest aid treatment mentioned on page 57)

WEED and BRUSH CONTROL - - GRASSLANDS pages 61 - 79 are covered on another Exam and these pages should have been removed.

GOOD LUCK on Your Exam