

Integrated Pest Management Key Items to Study

1) General Knowledge

- a) Understand and able to describe how resistance to pesticides develops and how it impacts crop protection.
- b) Understand how host plant resistance works, and give examples for wheat and cotton.
- c) Understand, be able to describe and give specific examples of the following IPM tactics:
 - i) Biological
 - ii) Cultural
 - iii) Mechanical
 - iv) Regulatory
 - v) Chemical
- d) Understand how GMO's are used in pest management
- e) Understand the difference between an Economic Threshold (ET) and Economic Injury Level (EIL)
- f) Describe standard scouting procedures for major pest in different crops

Insect Management Key Items to Study (FACT SHEET ## for Reference)

- 1) Know the different insect lifecycles and life stages
- 2) Recognize damage symptoms caused by mouthpart type
- 3) Know how cropping practices (tillage, planting date, crop rotation and plant variety) affect insects (PSS-2132)
- 4) Identify the following pests, recognize the injury symptoms they cause and know their lifecycles
 - a) Wheat: (EPP-7176 and CR-7194)
 - i) Aphids (bird cherry oat, greenbug and Russian wheat aphid)
 - ii) Armyworm
 - iii) Army cutworm
 - iv) Fall armyworm
 - v) Hessian fly (EPP-7086)
 - vi) Mites (brown wheat, wheat curl and winter grain mite)
 - vii) Describe Glance 'n Go sampling for greenbugs (CR-7191)
 - b) Canola (CR-7667)
 - i) Aphids (cabbage, green peach and turnip aphids)
 - ii) Army cutworm
 - iii) Cabbage looper
 - iv) Diamondback moth
 - v) False chinch bug
 - c) Alfalfa (EPP-7150, EPP-7159)
 - i) Alfalfa Weevil (PSS-2097, CR-7177)
 - ii) Aphids: (Pea, blue alfalfa, and spotted alfalfa aphids) (EPP-7184)
 - iii) Army cutworm
 - iv) Blister beetle (PSS-2072)
 - v) Grasshoppers (EPP-7196)
 - vi) Leafhoppers and Lygus bugs
 - vii) Leaf-feeding caterpillars (EPP-7159)
 - d) Soybean (EPP-7167, EPP-7156)
 - i) Green cloverworm
 - ii) Spidermites
 - iii) Grasshoppers (EPP-7196)
 - iv) Three cornered alfalfa hopper
 - v) Garden webworm
 - e) Cotton (EPP-7161, EPP-7163, E-832)
 - i) Bollworm/Budworm
 - ii) Boll weevil

iii) Cotton fleahopper

iv) Lygus bug

f) Identify common natural enemies (EPP-7307)

i) Lady beetles (adult, larva, pupa, egg)

ii) Lysiphlebus wasp (adult, mummy)

iii) Lacewings (Adult, larva, pupa, egg)

iv) Syrphid flies (adult, larva)

v) Ground beetles (adults)

vi) Minute pirate bug (adult)