



## **IPM Threshold Guide**

### **Agronomic Field Crops**

**ECONOMIC THRESHOLD –**  
 Level of pest activity when control action is suggested to prevent economic injury

### **ALFALFA INSECTS**

#### **ALFALFA WEEVIL**

Begin sampling when feeding damage is noticed

Record # of larvae/30 stem sample

Determine average plant height in inches (based on \$100/ton hay value & \$10.00 spray cost/A)

**12-18"** - > **60** larvae/ **30** stems.

**18-24"** - > **75** larvae/ **30** stems.

**> 24"** - > **80** larvae/ **30** stems or **cut**.

#### **POTATO LEAFHOPPER**

Sample with 15" sweep net, measure stem height:

**< 3"**stem ht. – **20** per**100** sweeps or **0.2** per sweep

**4-6"**stem ht. – **50** per**100** sweeps or **0.5** per sweep

**7-10"**stem ht. – **100** per**100** sweeps or **1.0** per sweep

**10-14"**stem ht. – **200** per**100** sweeps or **2.0** per sweep

#### **PEA APHID**

**50** aphids per sweep or **5-10** per plant

### **SOYBEAN INSECTS**

#### **DEFOLIATION & STAND**

##### **REDUCTION**

Seedlings - **30%** defoliation or **25%** stand Reduction

Vegetative stages - **30%** reduction

Bloom through pod fill - **15%** defoliation

Full green bean to **50%** leaf drop - **35%** defoliation

#### **EARLY SEASON DEFLOIATORS – BEETLES**

Defoliation threshold & > **5** larvae per ft. of row

#### **LATE SEASON DEFOLIATORS -- WORMS & BEETLES**

Defoliation threshold & **5** larvae per ft. of row

#### **SPIDER MITES**

> **50%** of plants with stippling on **1/3** of leaves and **50** mites per leaflet

**THRIPS** - drought stressed - **8** per leaflet

#### **POTATO LEAFHOPPER**

Drought stressed - **4** per sweep

Non-stressed - **8** per sweep

#### **CORN EARWORM**

Drop cloth or Sweep net

Narrow rows - **1** per ft. of row or **3** per **25** sweeps

Wide rows - **2** per ft. of row or **5** per **25** sweeps

### **CORN INSECTS**

#### **CUTWORM**

1-2 leaf - **10%** damaged plants

3-4 leaf - **5%** damaged & 4 larvae per 100 plants

#### **WHITE GRUB**

Heavy soils - **2** per sq. ft.

Sandy soils - **1** per sq. ft.

**WIREWORM** - **1** per bait station

**SLUG** - spike to 3 leaf - **5** per plant

#### **STALKBORER**

**4%, 6%** or **10%** damaged at the 2, 3 or 4 leaf stage

#### **ARMYWORM**

**35%** of plants > **50%** defoliated & larvae < **3/4"**

#### **EUROPEAN CORN BORER**

Not irrigated - **80%** infested with live larvae

Irrigated - **50%** infested with live larvae

#### **CORN ROOTWORM**

**1** Western or **2** Northern per plant

## SMALL GRAIN INSECTS

### CERIAL LEAF BEETLE

Wheat - 1 larvae per flag leaf

Oats - 2 larvae per flag leaf

### GRAIN APHID

Tillering - **150** aphids/row ft. & < **1** predator/**50** aphids

Heading - **25** aphids/head & < **1** predator/**50** aphids

### GRASS SAWFLY

**0.4** larvae/ linear row ft. & larvae >  $\frac{3}{4}$  inches

### TRUE ARMYWORM

Wheat - **2-3**/linear row ft. & larvae <  $\frac{3}{4}$  inches

Barley - **1**/linear row ft. & larvae <  $\frac{3}{4}$  inches

## WEEDS OF FIELD

### CROPS

#### ANNUAL WEEDS

# per **25 sq. ft.** to cause **10% loss:**

|   | <u>Drilled</u> | <u>Row</u> |
|---|----------------|------------|
| Cocklebur                                 | <b>1</b>       | <b>3</b>   |
| Jimsonweed or Velvetleaf                  | <b>1.5</b>     | <b>3</b>   |
| Pigweed, Lambsquarters<br>or Morningglory | <b>3</b>       | <b>5</b>   |
| Annual grasses                            | <b>5</b>       | <b>20</b>  |

#### PERENNIAL WEEDS

% of field infested:

|          |              |        |              |
|----------|--------------|--------|--------------|
| Light    | < <b>5%</b>  | Heavy  | < <b>30%</b> |
| Moderate | < <b>10%</b> | Severe | > <b>30%</b> |

#### NOXIOUS WEEDS

No threshold, eliminate all

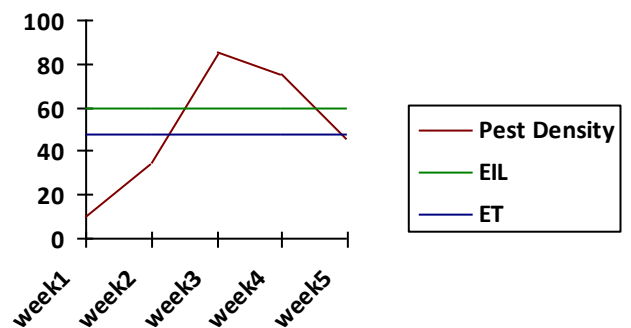
## IPM DEFINITIONS

### Economic Injury Level - EIL

“The lowest pest population density that will cause economic damage. At the EIL the Cost of Control = Benefit of Control.”

### Economic Threshold (Action or Treatment Threshold) - ET

“The density of a pest at which control measures should be implemented to prevent an increasing pest population from reaching the EIL -- ET is generally 80% of the EIL.”



### EIL=Pest Density (P)

$$P = \frac{C}{V \times D}$$

**C = Cost of Control**

**V = Value of Crop**

**D = Damage**

**Note: At EIL Benefit = Cost; B=C**

Compiled R. D. Myers 2000; Updated 2009

Compilation and layout assistance by Carol Jelich, Master Gardener, Anne Arundel County

This reference was adapted from the University of Maryland and Delaware Cooperative Extension Filed Crop and Vegetable IPM Pest Management Manuals

Reviewed by Galen Dively, Terrance Patton, and Sandra Sardenelli  
University of Maryland, College Park

The University of Maryland Cooperative Extension's programs are open to all regardless of race, color, religion, age, national origin, sex, or disability.