

**PMA 4570/6228 Field Techniques in Integrated Pest Management**

**Laboratory 3: Economic Decision Levels for Pest Management**

**DUE: Thurs. July 16 by 9:30am**

Economic decision levels are key components in pest management programs (think about your definition of IPM). Failure to consider economics can result in poor timing of management actions and overuse of insecticides. You should become familiar with the economic concepts related to pest management (EIL, ET, injury, damage, etc.).

1. Beet armyworm (*Spodoptera exigua* (Hübner)) is a key pest of tomatoes in the Southeastern USA. An experiment was conducted to determine an EIL for this pest.

a) Seven insecticide applications, each costing \$30.00 per acre, were applied to control the beet armyworm. Calculate C from this information.

b) Despite these applications, 16% of the yield was lost. What is K?

c) Use the table obtained from [www.nass.usda.gov](http://www.nass.usda.gov) to determine V in \$ / lb (note: 1 cwt = 100 lb).

d) The yield loss (in lb) per pest per acre was calculated to be 1.67 for an early season infestation and 0.757 for a late season infestation. Calculate the EIL in insects / plant for early and late season infestations. (Note: A tomato plant is ~ 0.000105 acres). How do they differ and what does this mean?

e) Calculate the gain threshold for this example.

f) How would the value of the EIL change if a less expensive insecticide were used? How would it change if the value of the crop increased?

2. Draw three graphs showing three pest situations:

a) non-pest

b) occasional pest

c) primary pest