

Using Integrated Pest Management

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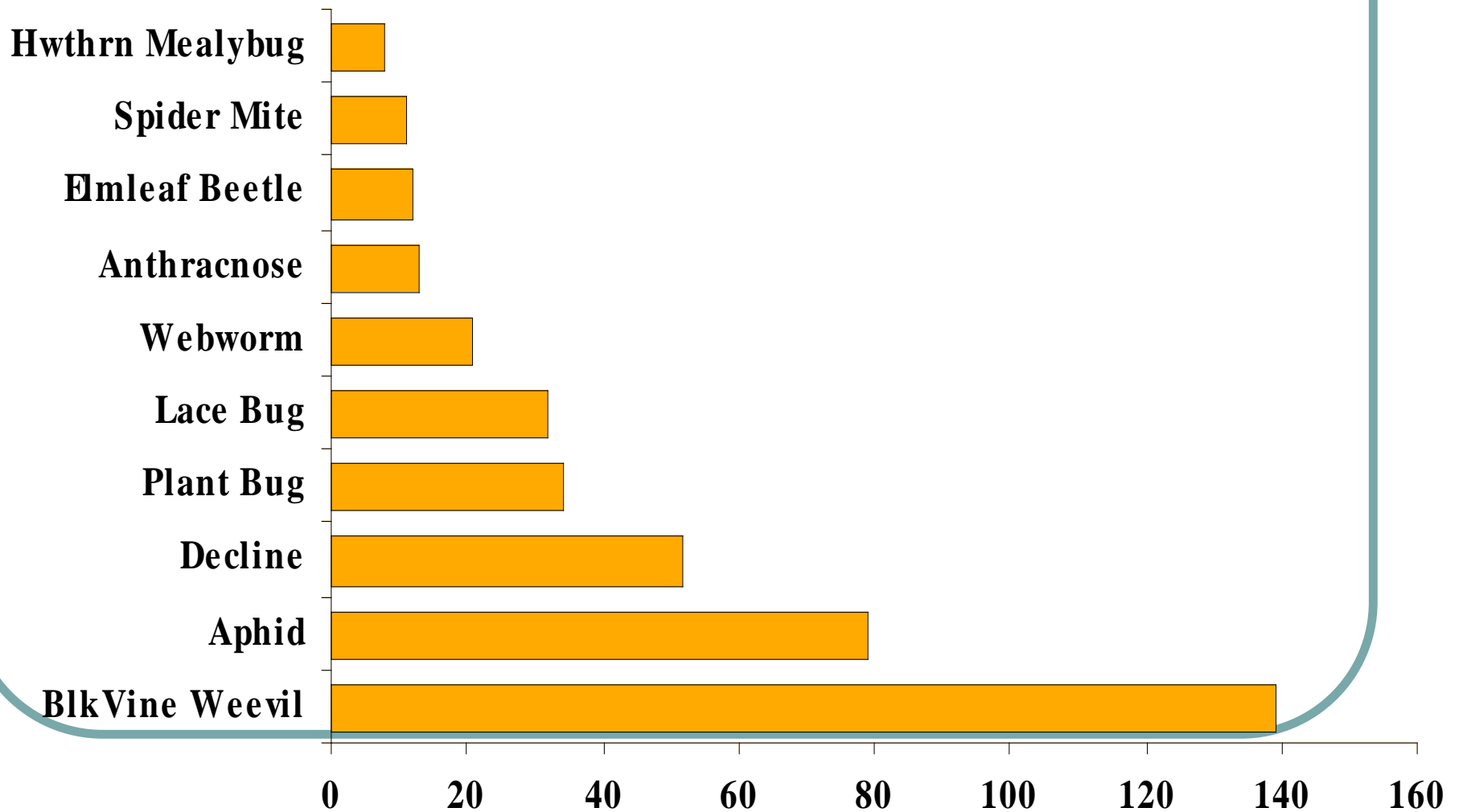
Use IPM (PHC) to track invasion

- Scouting
- Record Keeping
- Decision Making – Thresholds
- Tactic Selection
- Evaluation (during next visit)

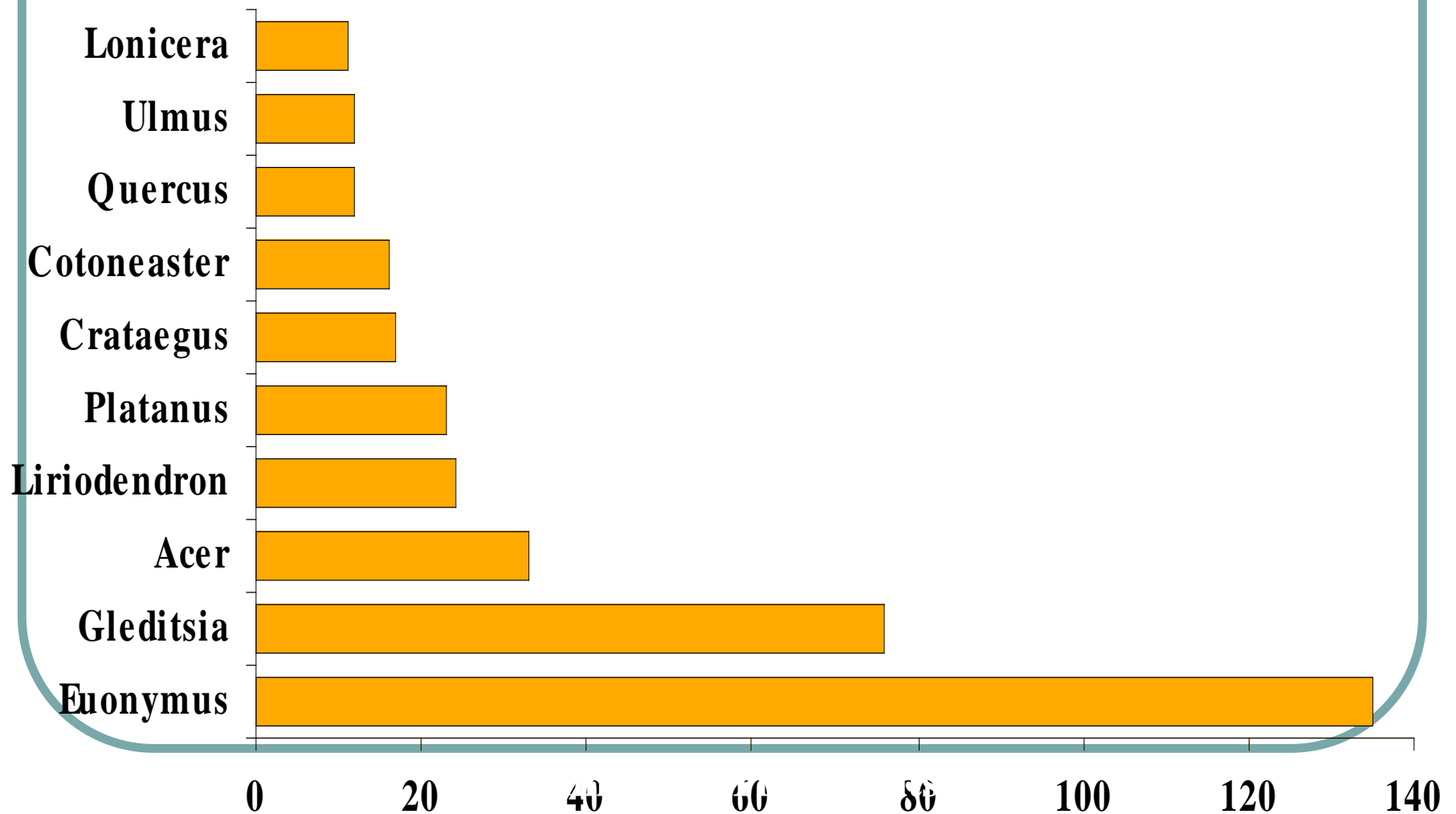
How to Summarize Records?

- Key pests - 10 most frequently observed
- Key plants - 10 most commonly with problems
- Key areas - Those with the most problems
- Seasonality - Frequency of key pests @ 2 week
 - Frequency of key plants @ 2 week

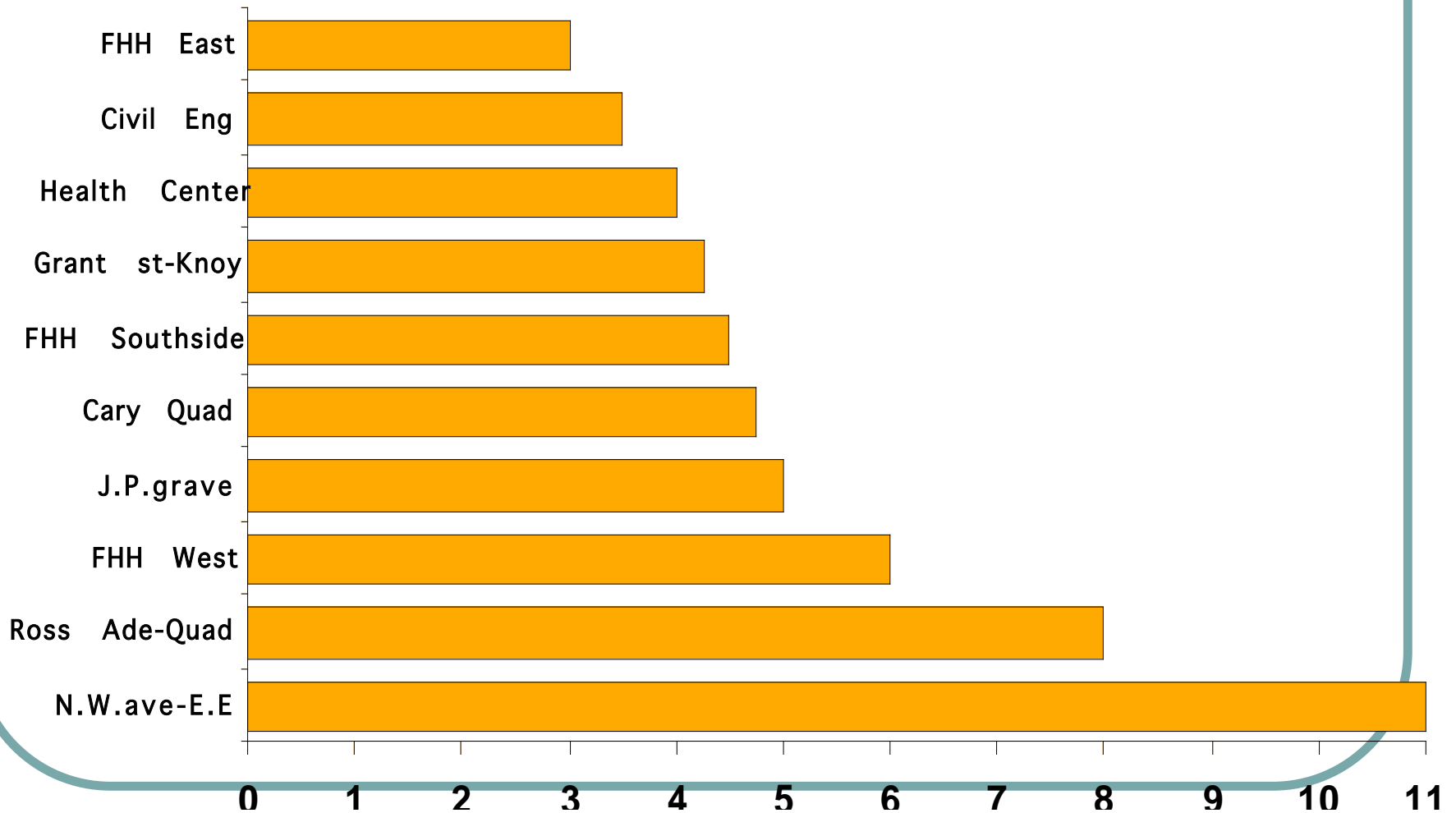
Use IPM to Identify Problem Pests



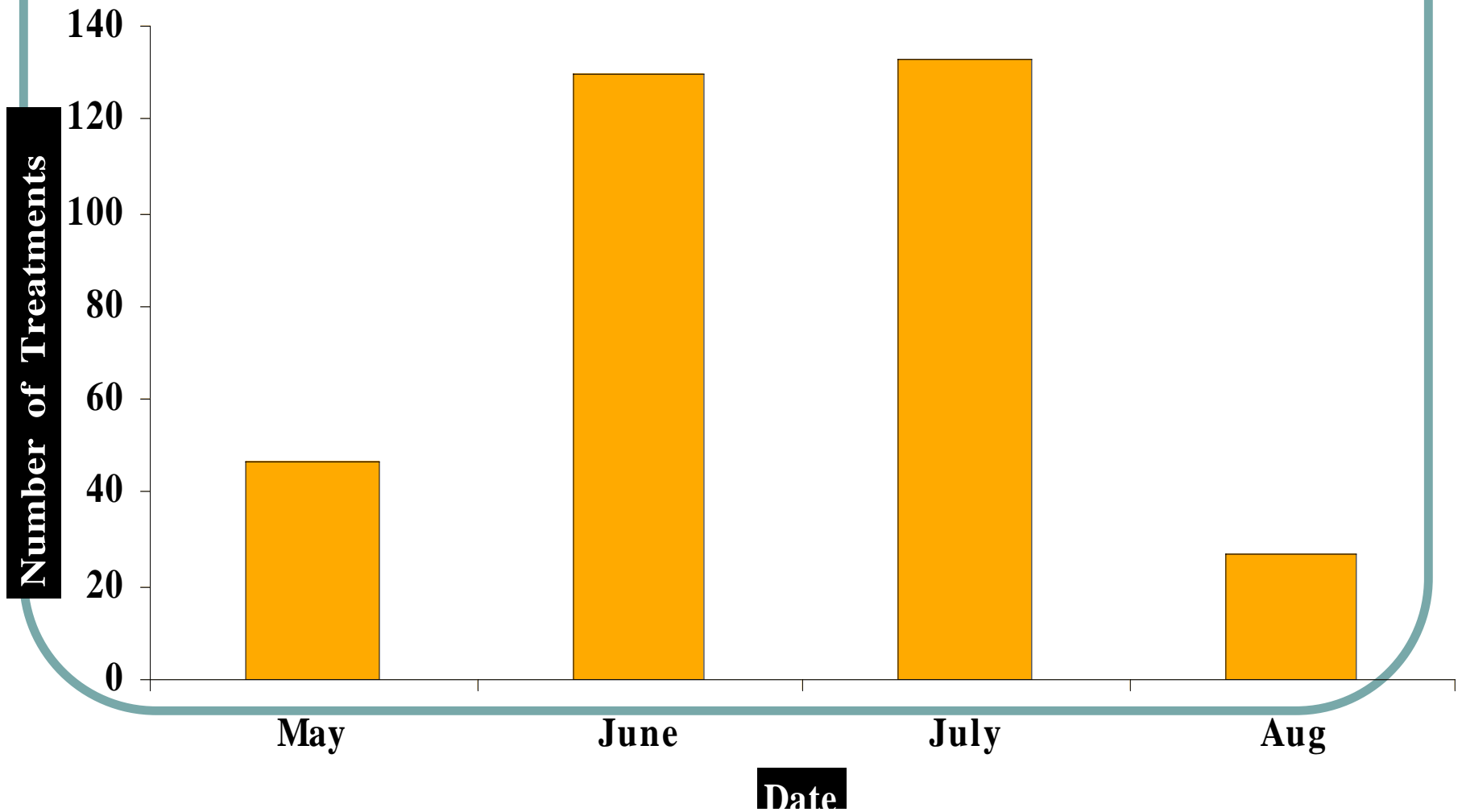
Use IPM to Identify Problematic Plants



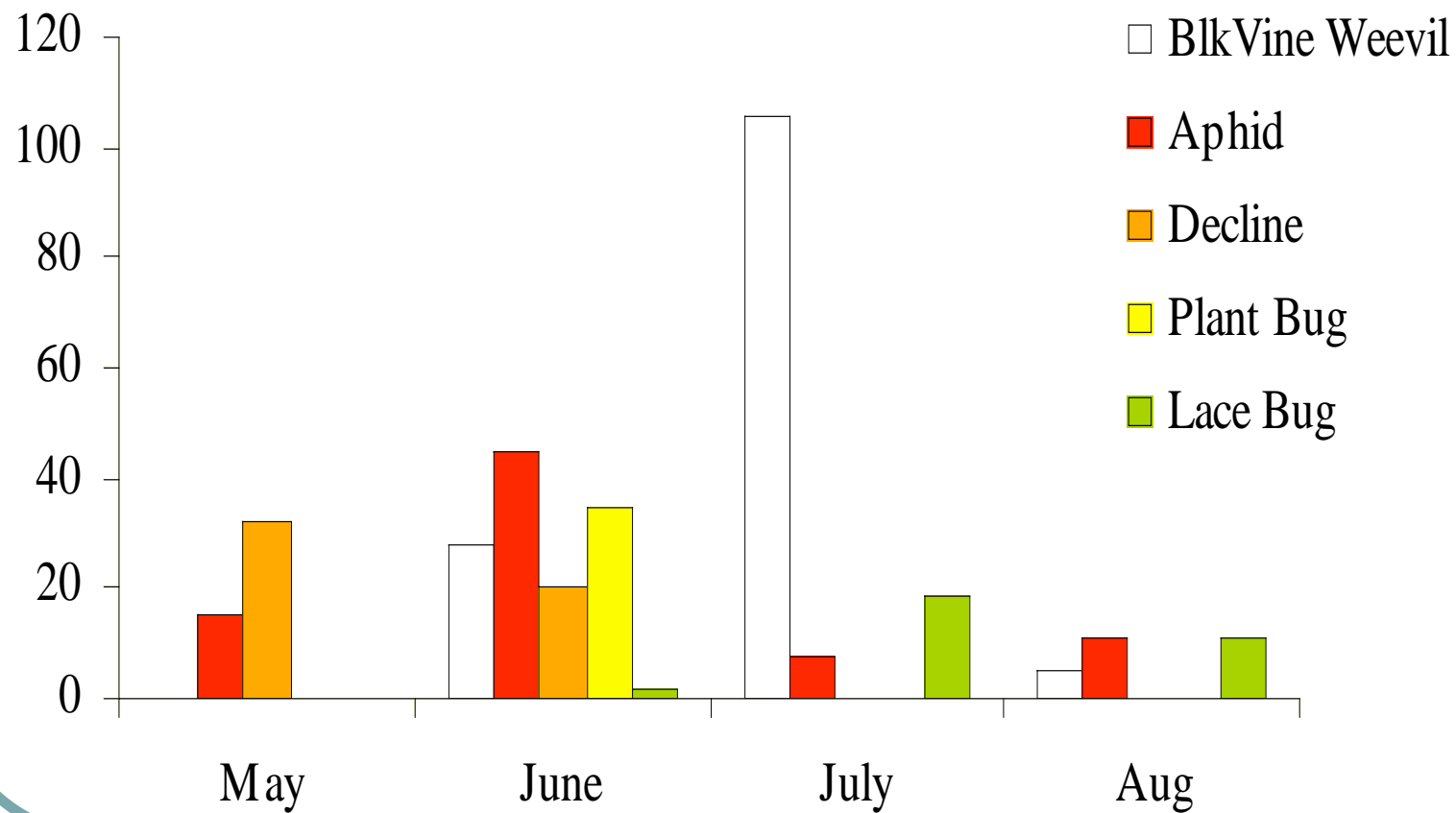
Use IPM to ID Properties or locations with most problems



Use IPM to identify busy times:



Use IPM to find out when specific pests are problems



Other ways to predict insect activity

- Historical calendar dates
- Temperature based systems (Degree days)

Degree day with a 50 F base

$$DD50 = \frac{(\text{Max } T - \text{Min } T) - 50}{2}$$

- Plant phenology indicators

<http://www.entomology.umn.edu/cues/Web/049DegreeDays.pdf>

Pest invasions and IPM

- Immigration
 - Know when pests are active
- Colonization
 - Determine where and which plants
- Rate of Spread
 - Knowing how fast and far pests move help you appropriate scale of control

IPM provides a framework for using practices compatible with NE's

Cultural Control

mulching, proper fertilization and watering

Mechanical Control

hand removal of pests, pruning

Short Residual, Selective Pesticides and Repellants

oil, soap, neem, BT, spinosad, IGR's

Biological Controls

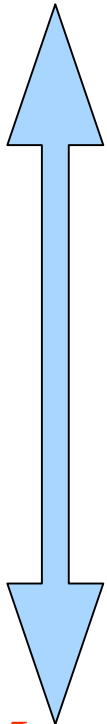
conservation

augmentation

(predators, parasites, diseases)

Range of pest management programs and compatibility with biological control

Least Compatible with BC



Cover Sprays (convenience driven)

Calendar Sprays (= semi-biology based)

See – and – Do (pest problem driven)

See, Do and Record (record treated problems)

Monitor, See, Do, and Record (=IPM or PHC)

Most Compatible with BC