

Sustainable Pest And Disease Management In Strawberry

A Grower's Perspective Of Sustainable Management Of Various Arthropod Pests And Diseases

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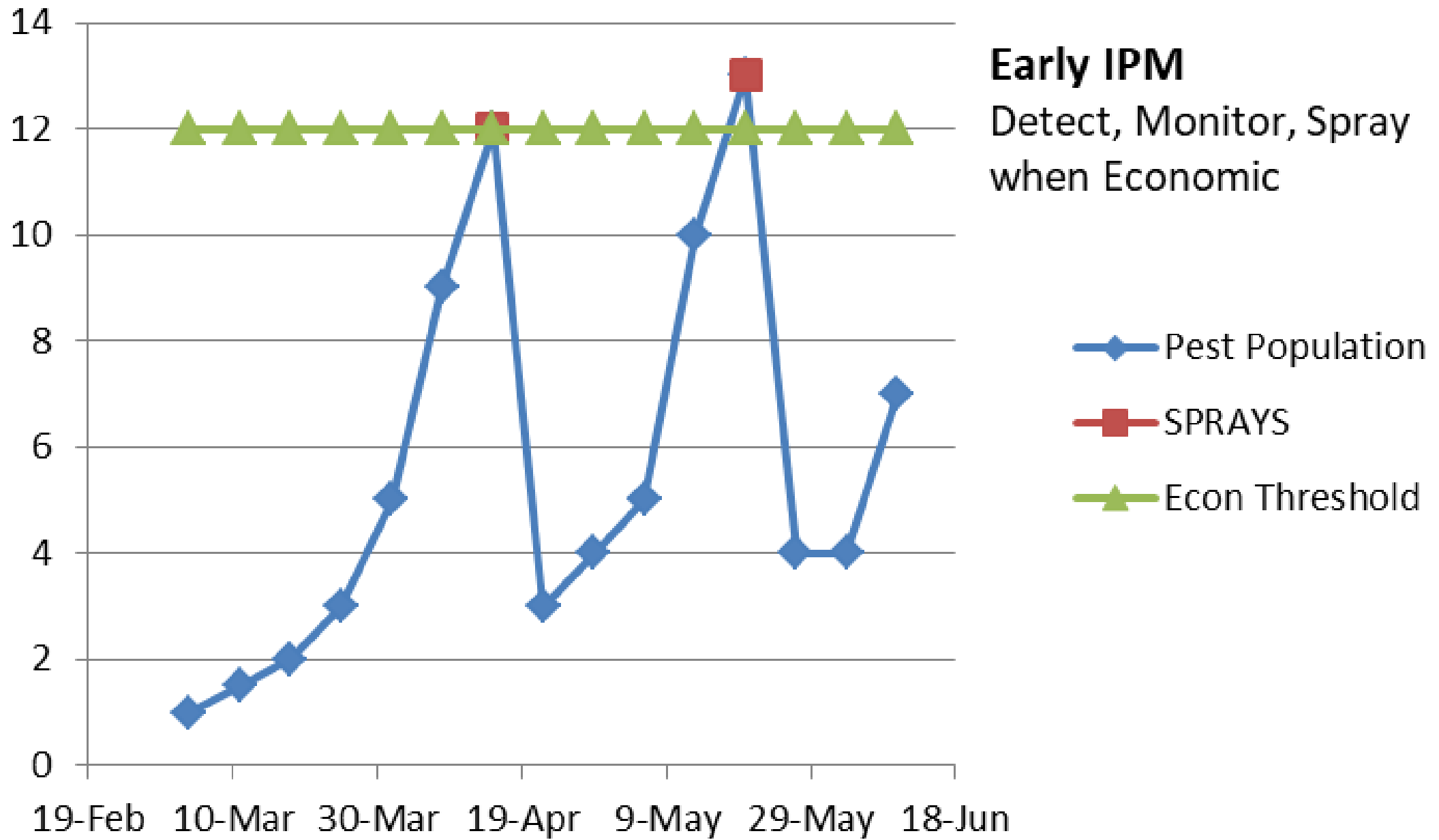


EARLY INTEGRATED PEST MANAGEMENT SYSTEMS

- A. Inspect crops regularly
- B. Monitor pest and beneficial populations
- C. Treat with appropriate chemicals or biologicals ahead of at or before economic thresholds.

Early IPM

Detect, Monitor, Spray
when Economic



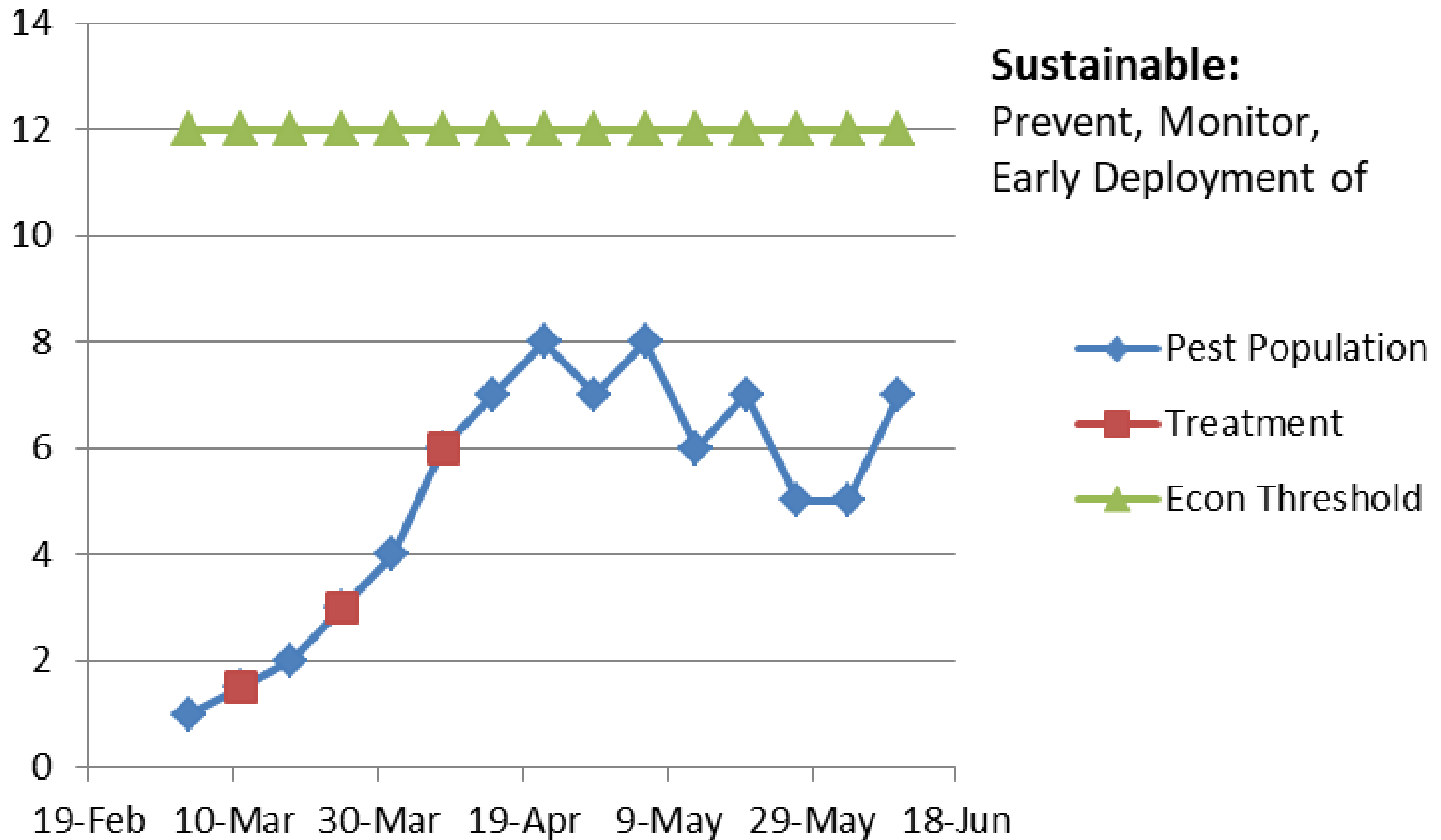
Sustainable IPM calls for a much more intense and innovative management strategy for pest damage mitigation measures.

Much softer chemistries, biological agents and alternative cultural practices are deployed far in advance of anticipated pest pressures, sometimes even before pest detection.

But each practice must be measured for both IPM efficacy in the field and for economic fit



Sustainable:
Prevent, Monitor,
Early Deployment of



Predict Pest Threats, Nutrient Needs And Other Issues

Looking forward requires knowledge of crop/field history

Pay attention to pest trends in your area even if you haven't experienced these pests yet. You probably will.

Know the other potential threats that effect your crop such as weather, pests in nearby crops, your varietal susceptibilities

Plan Ahead, Deploy Prevention Measures Early

Good soil preparation is critical to preventing soil borne diseases

Amend the soil to provide optimum nutrition and microorganism support, ie. Carbon sources

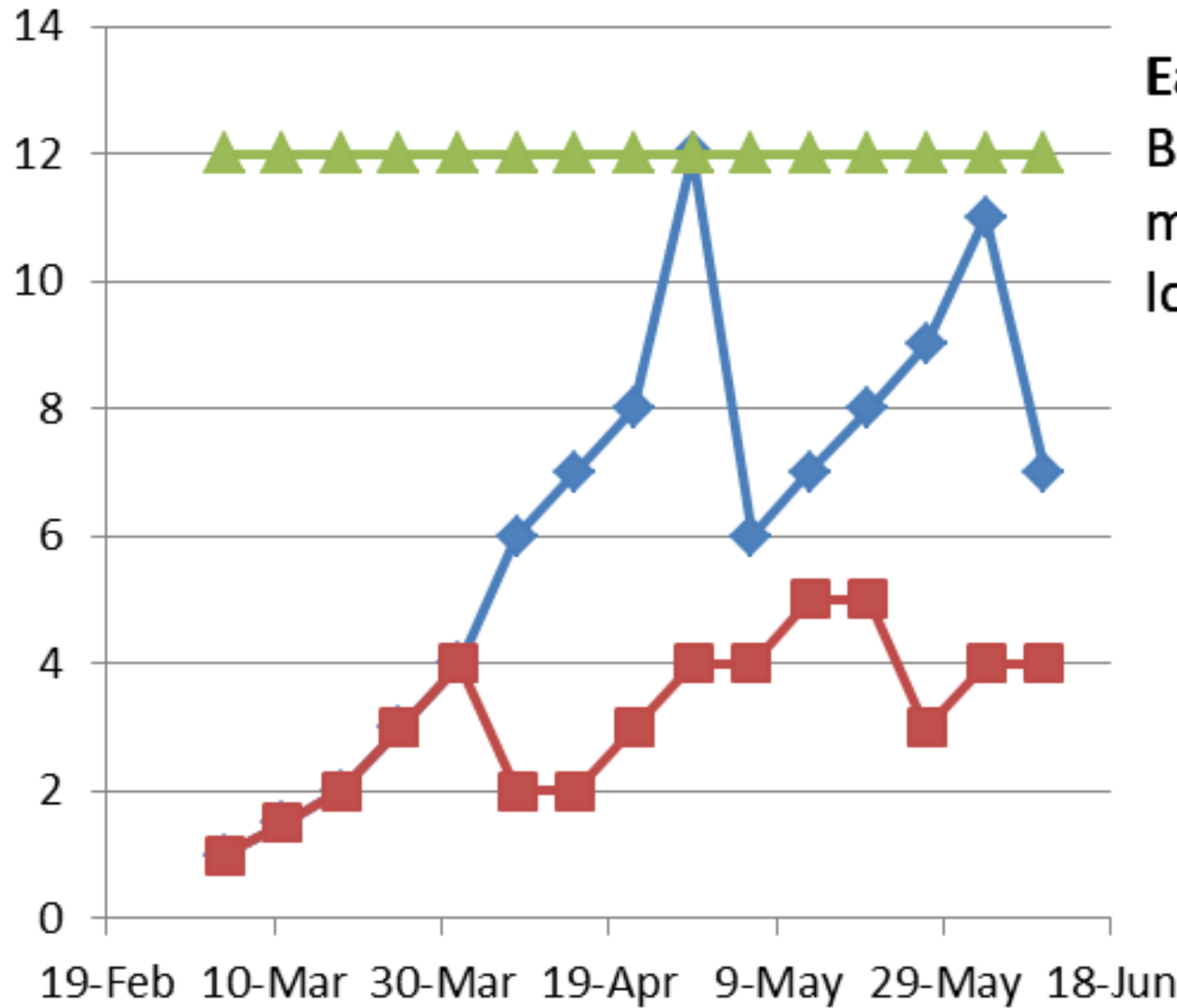
Inoculate your root zones before planting, then make regular maintenance applications during the season

Begin Monitoring And Mitigation Immediately

Know your enemy organisms. Where and when to expect them, but don't let them surprise you.

Beneficial organisms take time to build populations like pests, deploy or inoculate early to give them time to work.

Deploy soft chemistries and biologicals early when pest populations are low. Reducing a small population early avoids a huge population later.



Early vs Late Treat:
Beneficial insects are more effective at lower pest populations

- ◆— Pest Population 1
- Pest Population 2
- ▲— Econ Threshold

Know When To Deploy More Drastic Measures

Population monitoring and prediction skill is critical to identifying approaching train wrecks

Escalate mitigation measures well in advance of pest population explosions. Do not wait for spikes in pests to trigger mitigation



Thoughts for a broader sustainable agriculture

We grow enough food right now to feed the coming 10 Billion people expected by 2050

We lose 30-60% of crop production to pests, poor storage management and inefficient distribution systems and waste.

As much as 30% of food losses happen after harvest, but roughly 5% of research worldwide is focused on reducing supply chain food losses.