

# **European Pepper Moth: A New Invasive Pest**

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# Presentation Outline

- **First indication of a new invasive pest**
- **Regulatory response**
- **Technical Working Group**
- **Minimizing the impact**
- **Current knowledge**
- **Current research needs and results**

# **FIRST INDICATION OF A NEW INVASIVE PEST**

- **Contact from county Ag Commissioner**
- **CDFA and APHIS survey**
- **Serious impact on local growers**
- **Succulents, Kalanchoe and Begonia**
- **Approximately \$250,000 loss**
- **Restricted shipping**
- **Increased pesticide use (fogging)**

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# *Duponchelia fovealis* Zeller



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# REGULATORY RESPONSE

- Extensive survey using pheromone
- **Finds in 15 states**
- Formation of a Task Force and a  
Technical Working Group



100%



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# TECHNICAL WORKING GROUP

- Rob Ahern
- James Bethke
- Julieta Brambila
- Surendra Dara
- Dan Gilrein
- Amanda Hodges
- Galen Frantz
- Jan Hall
- James Hayden
- Graeme Murphy
- Lance Osborne
- Cristi Palmer
- David Riley
- **Lin Schmale**
- **Diane Schuble**
- Hugh Smith
- Stephanie Stocks
- Steve Tjosvold

# TECHNICAL WORKING GROUP

## Sub-groups

- **Survey and Diagnostics** – Jim H. and Julieta B.
- **Biology and Ecology** – Steve T. and Jim B.
- **Education** – Dan G. and Stephanie S.
- **Management** – Surendra D. and Hugh S.



A



B



C



D



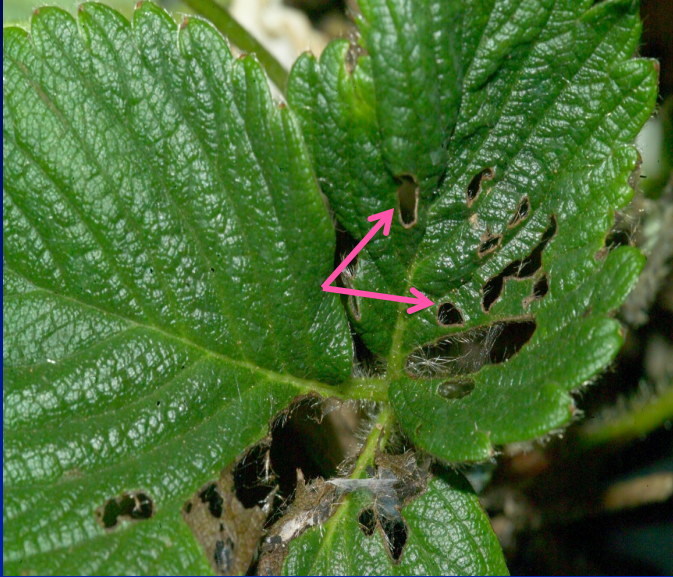


# CURRENT KNOWLEDGE





# CURRENT KNOWLEDGE



















# Research Priorities

## CONTROL

List of available pesticides

Search for effective pesticides and rotations

Economic Injury Levels

Mating disruption

Cultural controls

Effect of soil types

# Research Priorities

## LIFE HISTORY

Biology studies

Seasonal Phenology in local areas

Expected Distribution/Weather mapping

Degree Day Models/Phenology Control  
Models

Effect of detritus

Is there a Diapause?

# Research Priorities

## **DETECTION**

Effective Monitoring/Detection

Pheromone Trapping studies

Black Lighting

## **BIOLOGICAL CONTROL**

Biological Control Alternatives

## **HOST PREFERENCES**

# RECENT RESULTS

## Rearing

- Rose, Cow Pea, and Kalanchoe leaves
- Potting media
- Manduca Diet

## Biological Control

- *Atheata* readily eat first instar neonates



# RECENT RESULTS

## Host Plants in Rearing Cages

- *Kalanchoe blossfeldiana*, Tomato, Peppers, Verbena, Poinsettia

## Other plants

- Begonia, Echeveria, Gerbera, Chrysanthemum

# RECENT RESULTS

**Longevity** 10.2 d (N=70)

**Fecundity** 210.5 eggs/female (N=60)

**Efficacy (leaf dip assays 2<sup>nd</sup> instar EPM)**

Enstar 6%, Scimitar 57.5%, Duragard 72.9%,

Pedestal 32%, Ecotec 49%, Pyganic 24%,

Surfactants – Dyne-amic, BreakThru, Latron,

NoFoam B - approximately 20%,

Javelin 92%, Proclaim 5SG 4.8oz 100%, Orthene  
100%

# Control in Europe

France

10 years ago

20-30% losses to cyclamen and hibiscus

Initially *Steinernema carpocapsae* 500 000/m<sup>2</sup>  
by foliar spray then Bt every 15 days

Prophylaxis is very important



# Control in Europe

Denmark

Ornamental pest for more than 10 years

Claim Bt is the only effective solution

3 Bt sprays every ten days when  
populations build

10 water traps/1000 m<sup>2</sup>

# Conclusions

**Is already a serious pest of some  
ornamentals in CA**

**Monitoring/Detection is key, pheromones**

**Preventative applications of Bt to  
poinsettia**

**Cleanup applications using pulse foggers  
and Orthene+Pyrethroid tank mix**