

# Black-headed Fireworm

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# Overview

- ▶ Lifecycle
- ▶ IPM
- ▶ Treatment options



# Lifecycle

# BH Fireworm Lifecycle

1<sup>st</sup> generation

Overwintering  
eggs



larvae



Adults  
(moths)

2<sup>nd</sup> generation

eggs



larvae



adults

3<sup>rd</sup> generation

eggs



overwinter

Temperature/conditions???

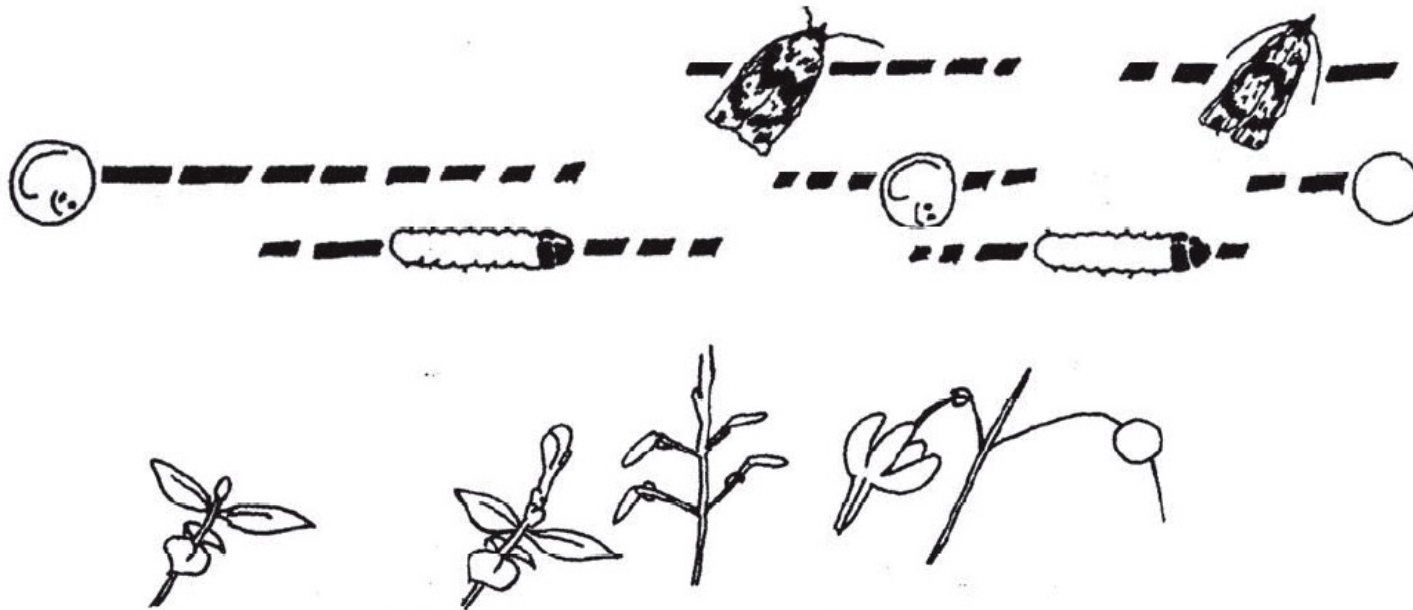
larvae



adults

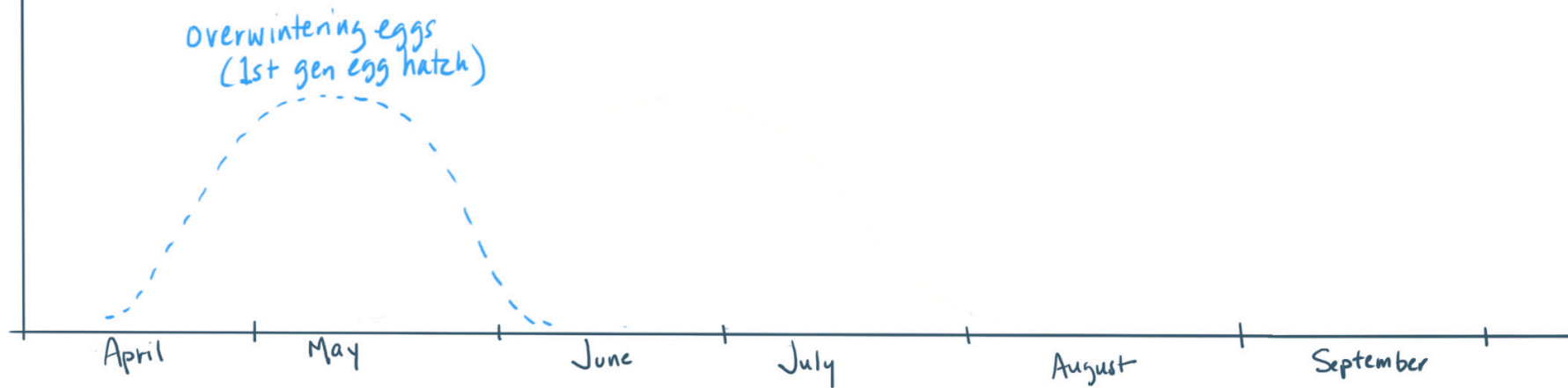
# Lifecycle

March      April      May      June      July      August      September



Extended  
2<sup>nd</sup> hatch  
or 3<sup>rd</sup>  
hatch  
may  
occur

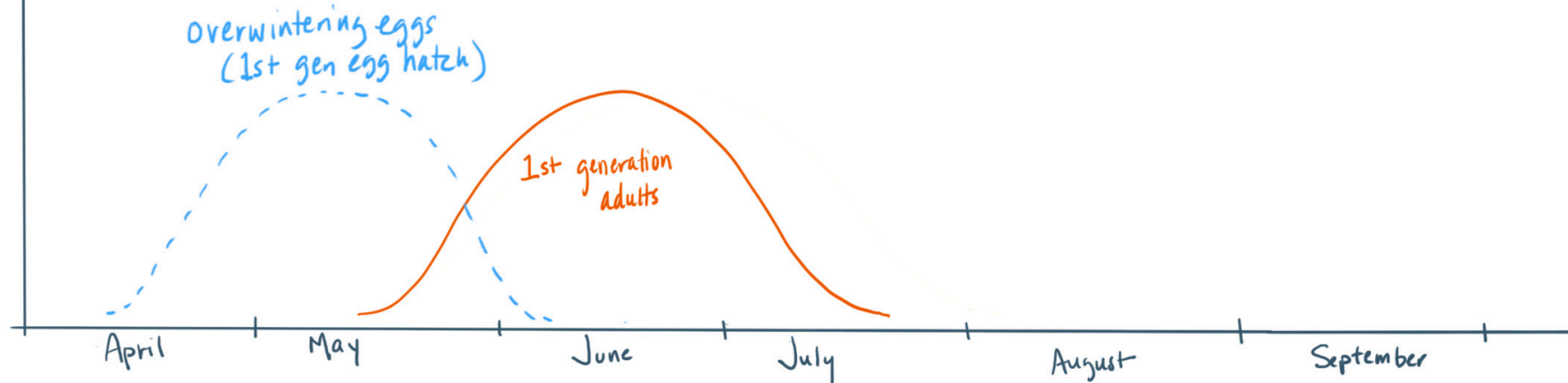
# BH Fireworm generations



*(There is nothing exact about these dates)*

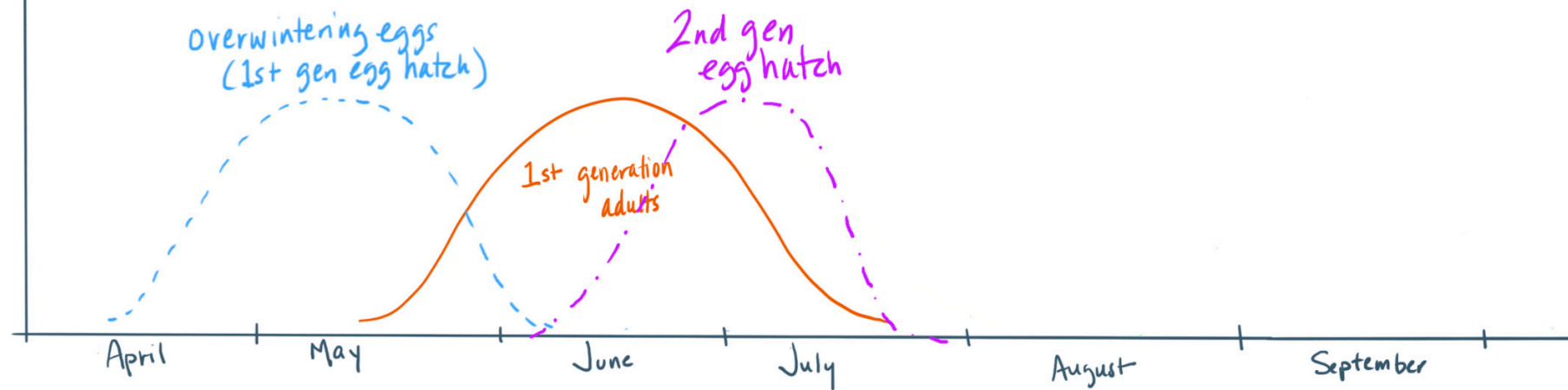


# BH Fireworm generations



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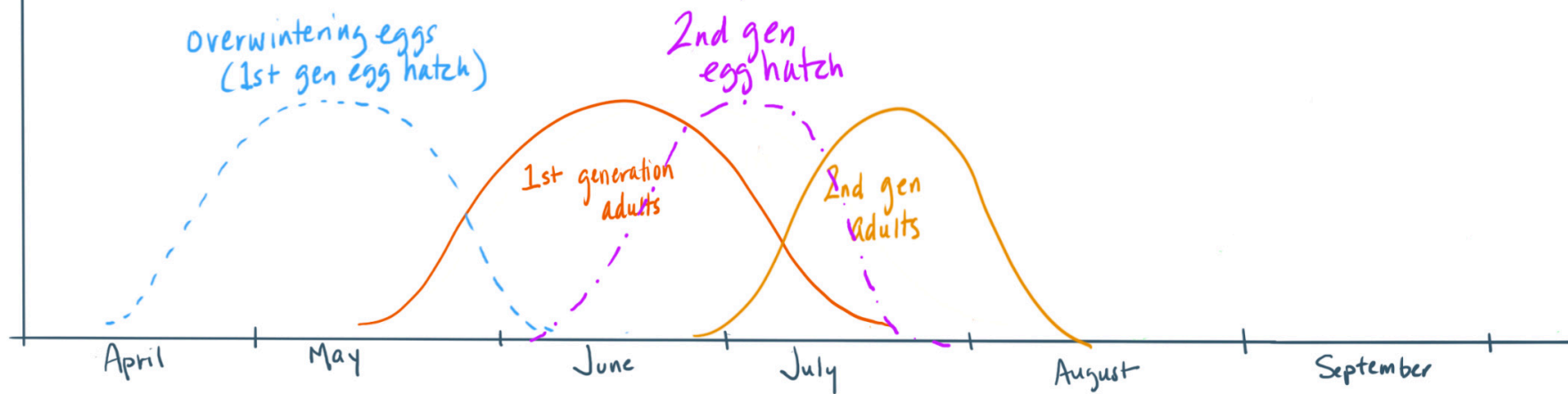
# BH Fireworm generations



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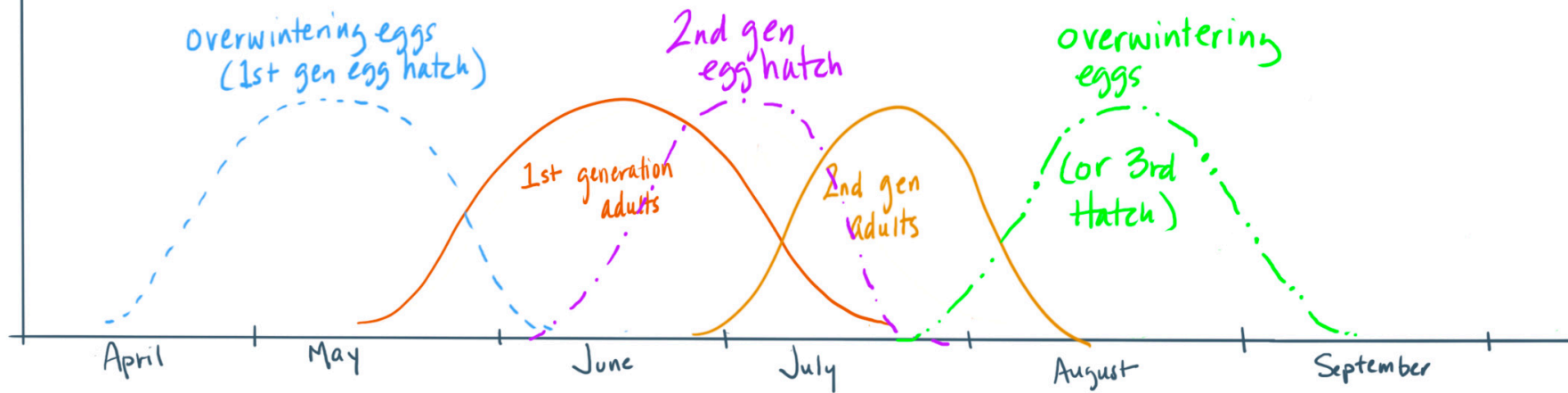


# BH Fireworm generations



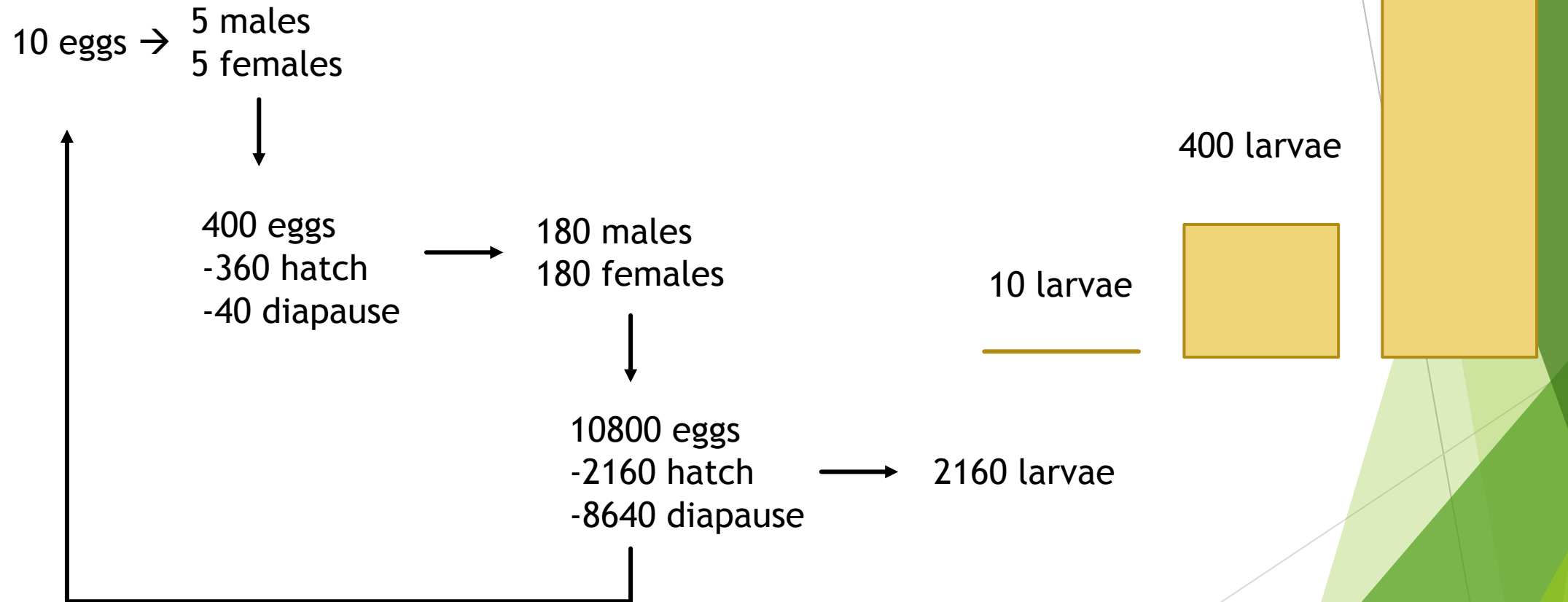
*(There is nothing exact about these dates)*

# BH Fireworm generations



*(There is nothing exact about these dates)*

# Potential generational increase if no mortality (example)



# Integrated Pest Management

- ▶ Pheremone traps
- ▶ Not for IF you should treat (no threshold)
- ▶ Why???
  - ▶ Trap counts in the 200-400s with no damage
  - ▶ Trap counts in the 10-20s with extensive damage
  - ▶ =not always reliable correlation to actual population size
- ▶ Use for WHEN to treat





# Integrated Pest Management

- ▶ Pheremone traps
  - ▶ Not for IF you should treat (no threshold)
  - ▶ Use for WHEN to treat
- ▶ Pesticide rotation
- ▶ Scouting
  - ▶ Sweep nets
  - ▶ Visual sampling (“sweeps”)



**Hot spots:** new growth, runner tips

**10 visual sweeps** per acre → 2 ft<sup>2</sup> area

**Threshold:** Treat if you're averaging 1 larvae per visual sweep



# Integrated Pest Management

- ▶ Pheremone traps
- ▶ Pesticide rotation
- ▶ Scouting
- ▶ Growers with just one well-timed 1<sup>st</sup> and 2<sup>nd</sup> generation spray of soft chemistry with no damage
- ▶ Growers with 4 OP sprays/year with extensive damage



# Basic monitoring

## Trapping



May



June



July



Sweeping for BHFWS @ hot spots  
Inspections of tips (TW, BHFWS, BVW)

Sweeping  
Inspections of tips

Visual inspection for damage



# Visual “Sweeps”





Tipworm



Fireworm



# Late season damage





# Tools

- ▶ Longer residual

- ▶ Altacor

- ▶ Intrepid

- ▶ Danitol



- ▶ Fanfare



- ▶ Shorter residual - less forgiving if you miss timing

- ▶ Diazinon



- ▶ Avaunt



- ▶ Orthene



- ▶ Entrust & Pyganic



- ▶ Sevin



- ▶ Delegate



# April to early/mid-May

- ▶ Scouting for newly hatched larvae
- ▶ Treat when visual "sweep" threshold met



- ▶ Products with good residual for longer coverage:
- ▶ Altacor
- ▶ Intrepid
- ▶ Danitol
- ▶ Fanfare

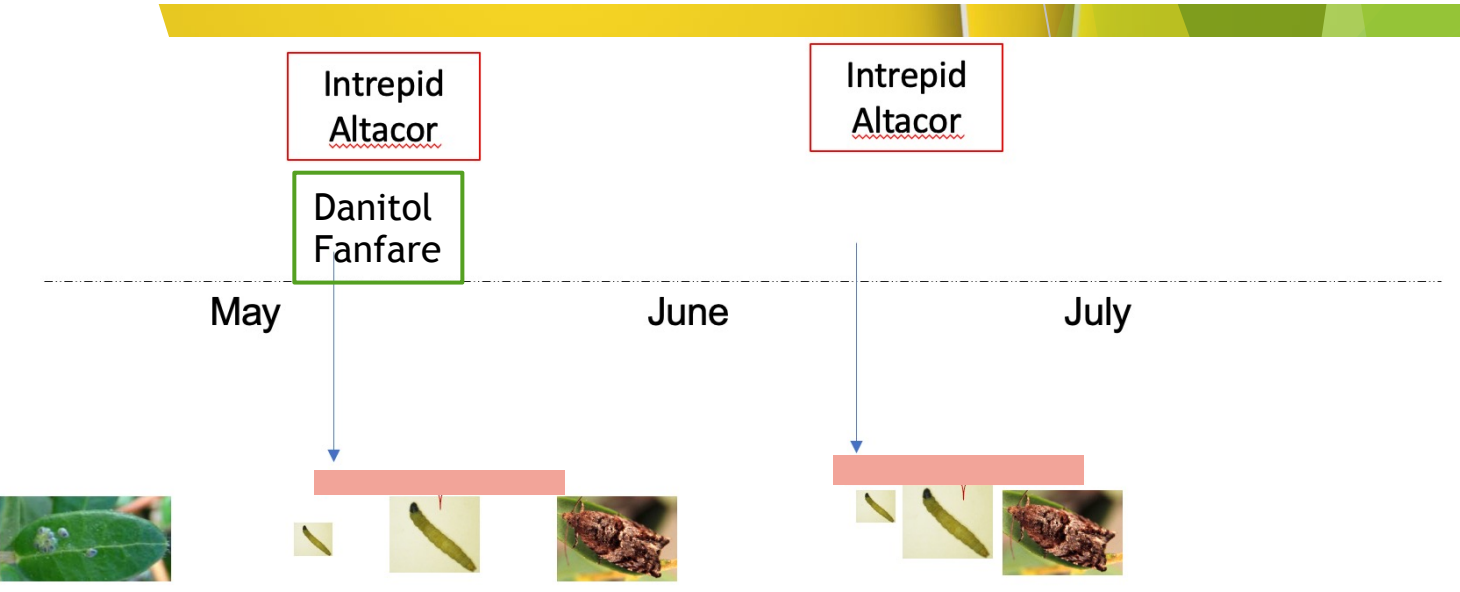
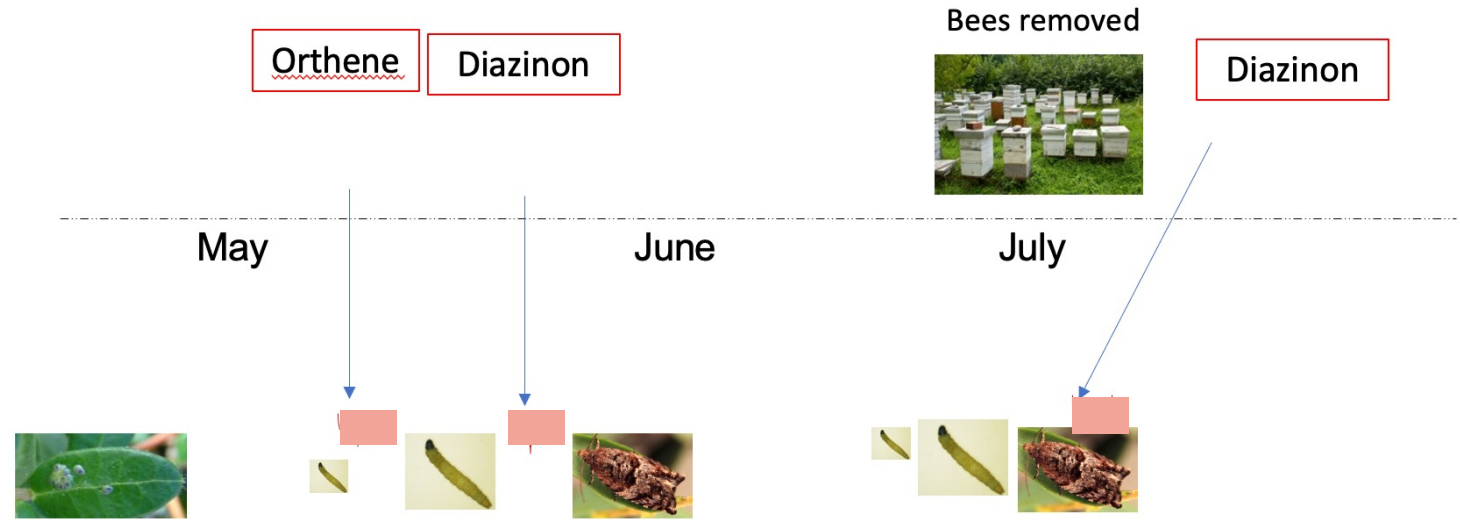
- ▶ Shorter residual products (still good, but monitor!)
- ▶ Diazinon
- ▶ Sevin
- ▶ Avaunt
- ▶ etc



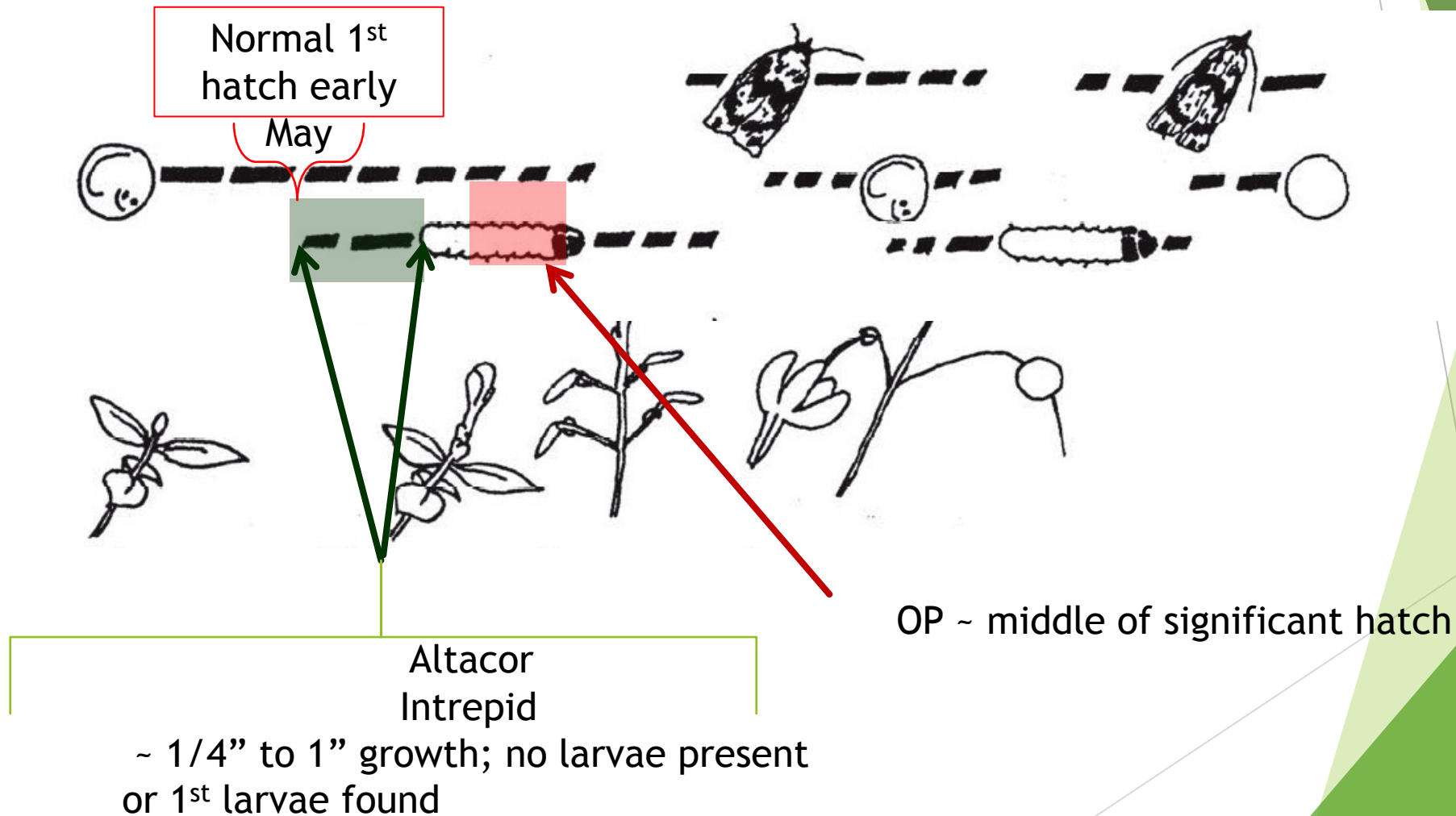
# Timing and chemistry choice

- ▶ Altacor and Intrepid
  - ▶ Targeting really small larvae
  - ▶ Not targeting adult moths
  - ▶ =apply earlier than you're used to
  
- ▶ Long residual = less likely to miss timing
  - ▶ Altacor
  - ▶ Intrepid
  - ▶ Danitol } Kill tipworm and
  - ▶ Fanfare } Weevil too

Traditional insecticides for 1<sup>st</sup> and 2<sup>nd</sup> generation BHFV control can be problematic if you miss your timing due to short residual



# 1<sup>st</sup> generation timing (soft vs traditional chemicals)



# Late-May → mid-June

- ▶ Mid-May (ish): first moths scouted or in trap
- ▶ Late-May/early-June: adult population building
- ▶ Bloom
  - ▶ Intrepid, Rimon → Insect Growth Regulators
  - or
  - ▶ Altacor
  - ▶ Target small larvae, mainly
  - ▶ Apply 2 weeks after first moth (biofix), then again 10 days later





# Late-June through July

- ▶ 2<sup>nd</sup> flight starting and building
- ▶ Scout and watch traps (if you have them)
- ▶ Post-bloom = your choice for treatment options
  - ▶ Watch PHI and handler restrictions
  - ▶ Rotate products
  - ▶ Remember:
    - ▶ Altacor and Intrepid target small larvae so you apply earlier



# August through Harvest

- ▶ Watch for:
  - ▶ Fliers
  - ▶ Fruit damage
  - ▶ Damaged tips
  - ▶ Concern: 3<sup>rd</sup> generation
- ▶ Treat as needed, but be careful of PHI



# Choosing a product

	<b>BHFW control</b>	<b>persistence (residual control)</b>	<b>Tipworm control</b>	<b>BVW control</b>
Diazinon	good	poor	poor	poor
Acephate	good	poor	poor	poor
Altacor	good	good	none	none
Intrepid	excellent	good	none	none
Danitol	excellent	excellent	good	Fair to good
Bifenthrin	excellent	excellent	good	Fair to good
Avaunt	good	moderate	none	Fair to good

# Questions?

- ▶ Pheremone trapping program 2023
- ▶ New Tipworm monitoring program 2023
- ▶ Paperwork in back - will be sent in mail too