Cranberry Station Extension meetings

Cranberry Station Outreach and Public Service Activities

2005

Research Update Meeting 2005 Insects

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Insects
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CRANBERRY MANAGEMENT UPDATE

The return of blackheaded fireworm

Life Cycle of the Blackheaded Fireworm

- 2 to 3 generations per year
- eggs overwinter

Figure: Sheila Fitzpatrick

Fireworm is not a cranberry/blueberry specialist

Host plants include:
- blueberry
- evergreen blueberry
- cowberry
- apple
- cherry
- ornamentals

- 1159 **holly tortrix** *Rhopobota naevana* (Hübner, [1817])
- aka **blackheaded fireworm**

FIREWORM MANAGEMENT IS STRAIGHTFORWARD

Recommendations

- TARGET young larvae
- Start in early spring
- Combine sweeping with visual observations
- Use pheromone trapping data
- Remember there are 2 generations

Even full grown, larva is only 1/3"

DIFFERS FROM SOME OTHER PEST PROBLEMS

• Short window of opportunity--larval stage is quick (few wks)

• Discovery of few larvae may indicate there is a problem

EARLY SIGNS OF FIREWORM DAMAGE

MAY, just as vines exit
dormancy eggs hatch

Some larvae may
 mine last year's
 leaves

Prefer new growth

THE WEBBED TIP

Classic
evidence
of early
infestation

EARLY MAY
HATCH TIME CAN BE EXTREMELY VARIABLE!!
SCOUT FOR HATCH

- Use visual inspections of vines; keep an eye on 'hot spots'

- where chemigation coverage was poor last year

- warm edges

- rank vines, heavy trash areas

SCOUTING FOLLOWING HATCH

TO TARGET SMALL LARVAE
COMBINE SWEEPS
WITH VISUAL INSPECTIONS
Small larvae are not picked up in net

SWEEP RECOMMENDATIONS

- 1 sweep set/acre (reduce for larger beds)

- Do not avoid hot spots

- Very small fireworm cling to top of net

- Average of 1-2 larvae per sweep set triggers treatment

NET INSPECTION

•BELIEVE you will find a larva -- keep looking

•Dingy, small creature mixed with trash

VISUAL INSPECTIONS

- Visually scan a 2x2 ft area for webbed leaves, damage (30 -60 secs)

- Wisconsin IPM: Four scans/bed
- BC IPM: 10 scans/acre

- Average of 1 larva/scan = consider treatment

LARGE LARVAE ARE
   readily picked up in net
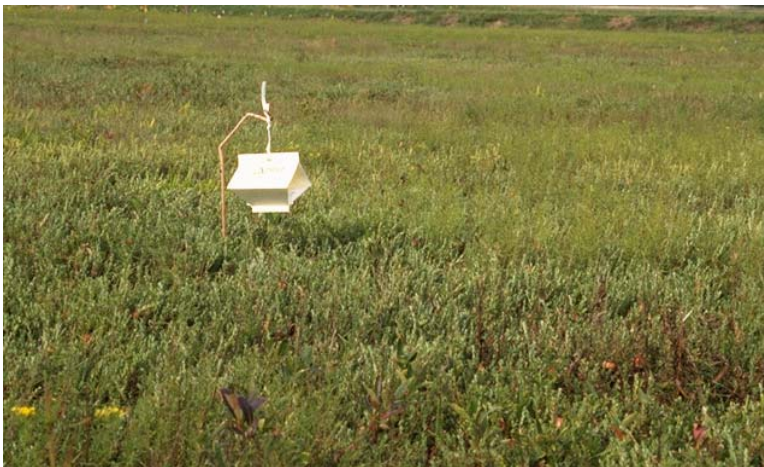   numbers reflect infestation
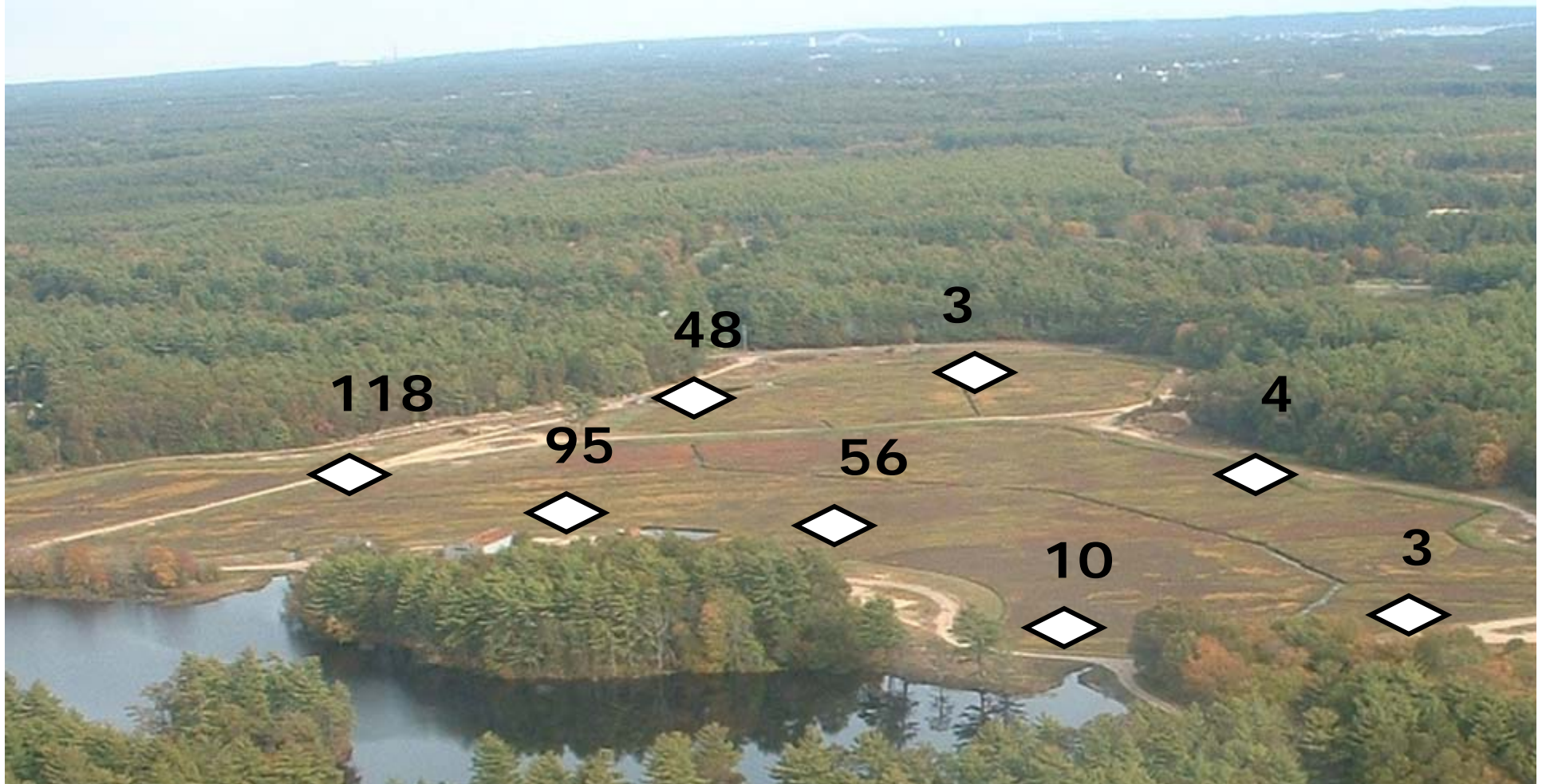   harder to control

JUNE ---
MONITOR
ADULTS WITH
TRAPS

TRAPPING RECOMMENDATIONS
   --Up by end of MAY
   --Inspect each week
   --At least 1 trap/10 acres

Traps captures may not be evenly distributed

RULES OF THUMB

- Control: peak = 0-30 males
  - In WI IPM program, 60% of farms <5

- Fair control, probably poor coverage in some areas: peak around 100

- Out of control, missed spray timing = peak 100's of males

SPRING

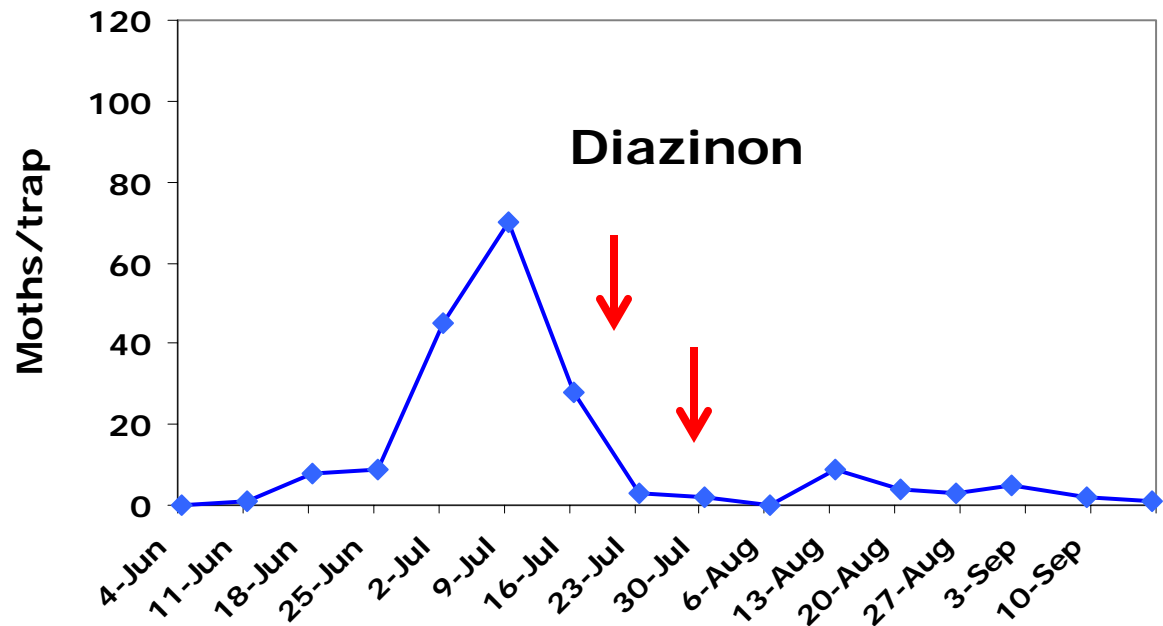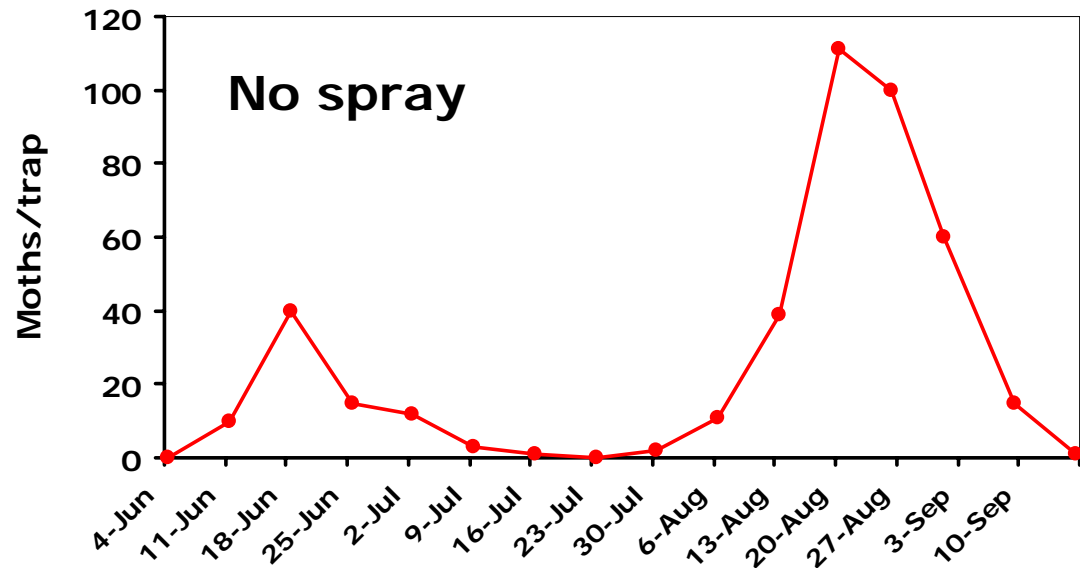Moths monitored
with
pheromone traps
June > July

SUMMER

FALL

Moth population trends in a sprayed and unsprayed bed

SPRING

???

Does probability of collecting 1st gen larvae predict 2nd gen moth flight?
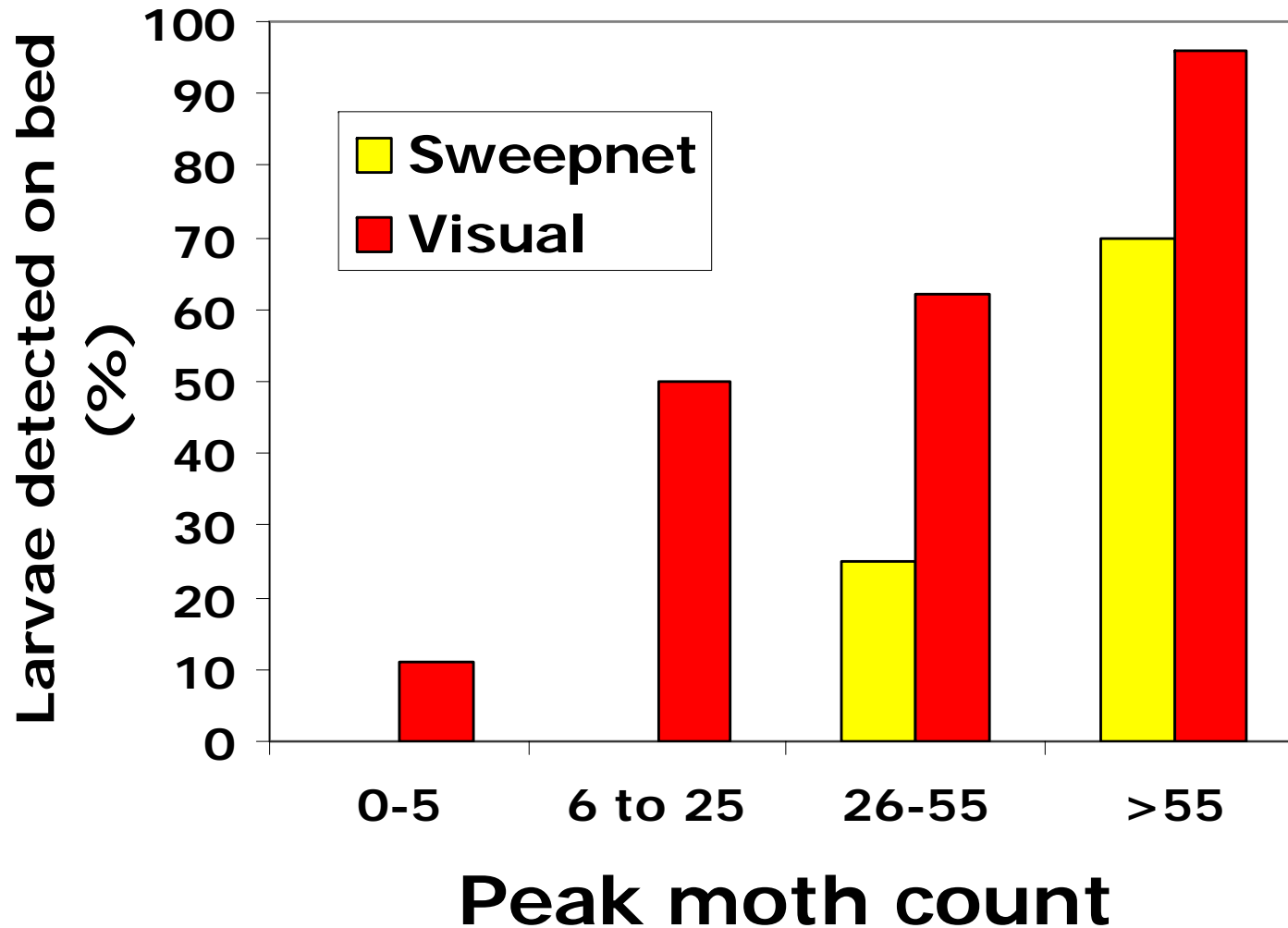
SUMMER

FALL

Detection of spring larvae and subsequent moth flight

From Katchadoorian and Mahr 1991

SPRING

Can 1st gen flight predict
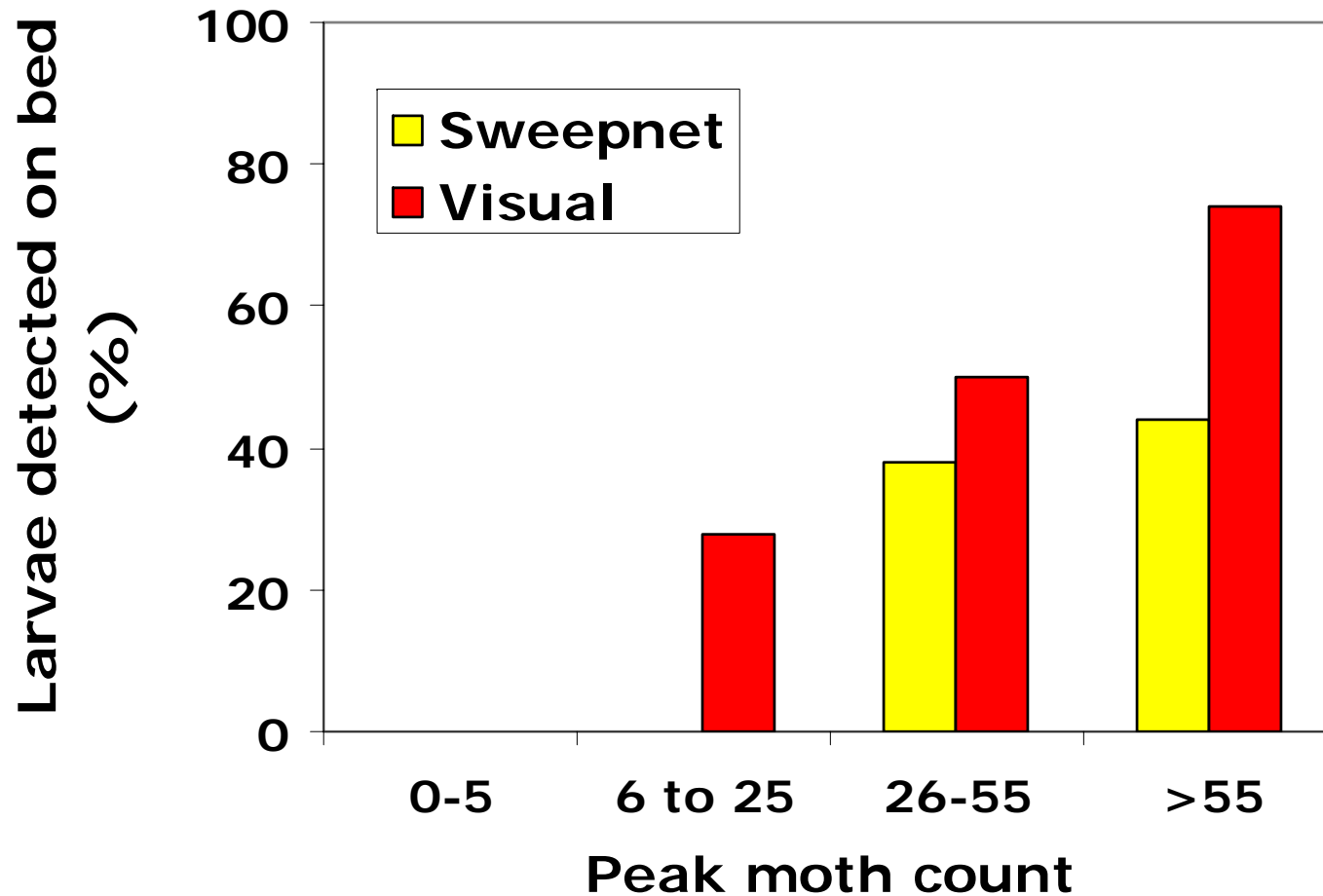probability of detecting
2nd gen infestation?

SUMMER

FALL

Trap counts predict probability of detecting summer larvae

from Katchadoorian and Mahr 1991

SPRING

NOT
monitored
with
pheromone traps
in August

SUMMER

SPRING

FALL

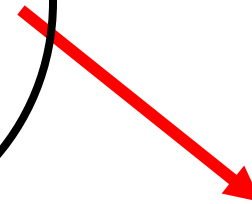
WINTER

SPRING

SUMMER

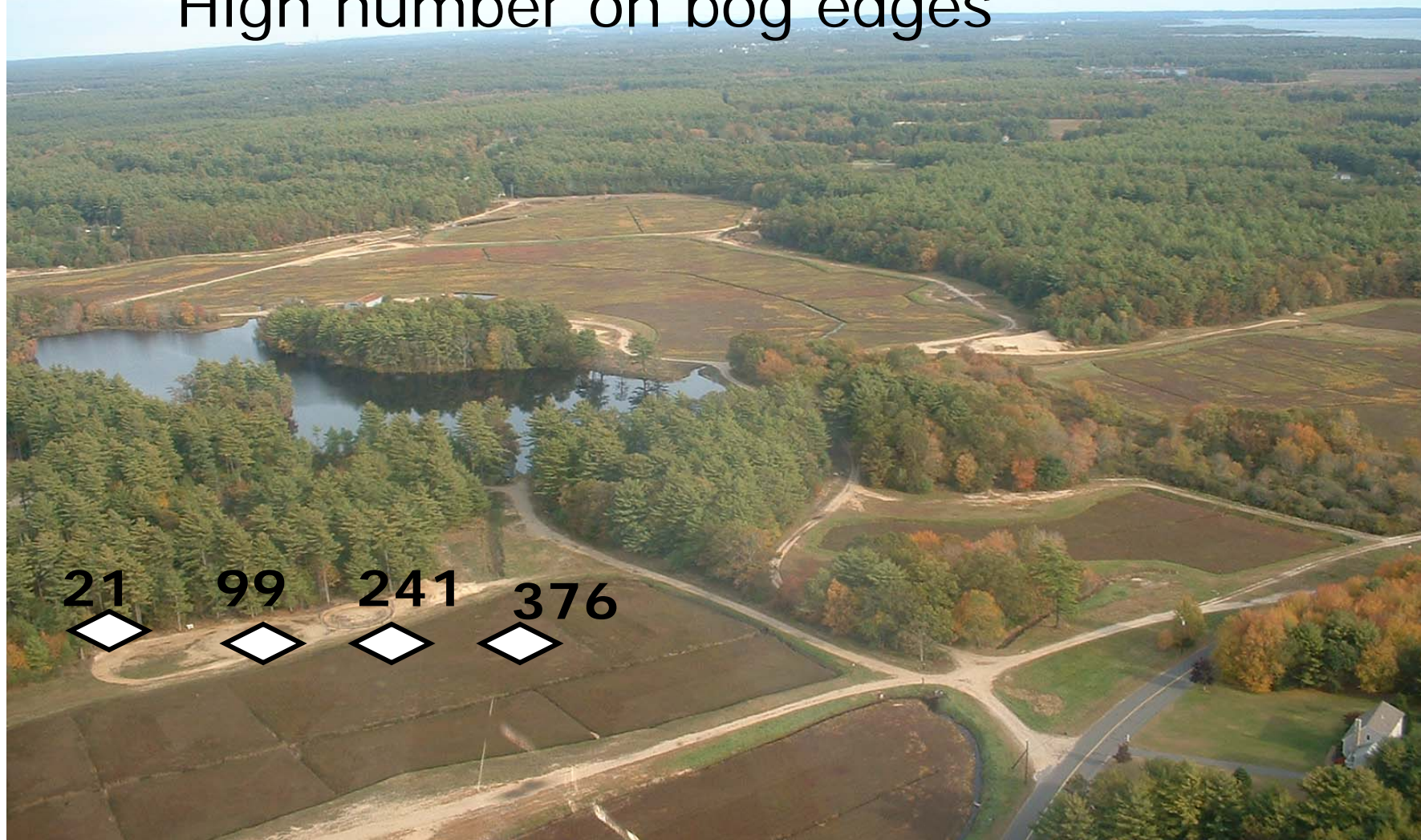2nd gen flight predicts probability of detecting next year's infestation

FALL

WINTER

SPRING

Moth catches inside and outside bog show:
    Lower off-bog populations
    High number on bog edges

21   99   241   376

from Shanks et al. 1990

RECOMMENDATION

- Use pheromone traps at bog edge to monitor summer moth flight in August

- High numbers
  - indicate poor control of spring gen
  - indicate potential problem next year

SPRAY OPTIONS

Reported to be effective

- Diazinon

- Intrepid

- Orthene (first generation)

- Confirm (good systems)

- SpinTor

- Imidan
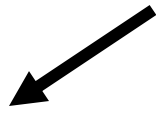
CONFIRM and INTREPID

- Intrepid more active

- Intrepid has Zone II restrictions

SPRAY TIMINGS

- In spring, when larvae detected by sweep/scan

- In summer, when larvae detected --OR
- In summer, based on trap captures
  - Confirm and Intrepid
    - 3 weeks after onset of flight, 10 days later
  - Diazinon, Imidan, SpinTor
    - 10-14 days after peak moth flight

MAY

Detect an average
of 1-2 larvae; ASAP

JULY
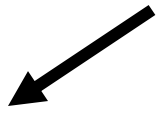

SEPTEMBER

MAY

10-14 days after peak flight -- OPs
3 wks after onset of flight -- IGRs

JULY

FALL

???

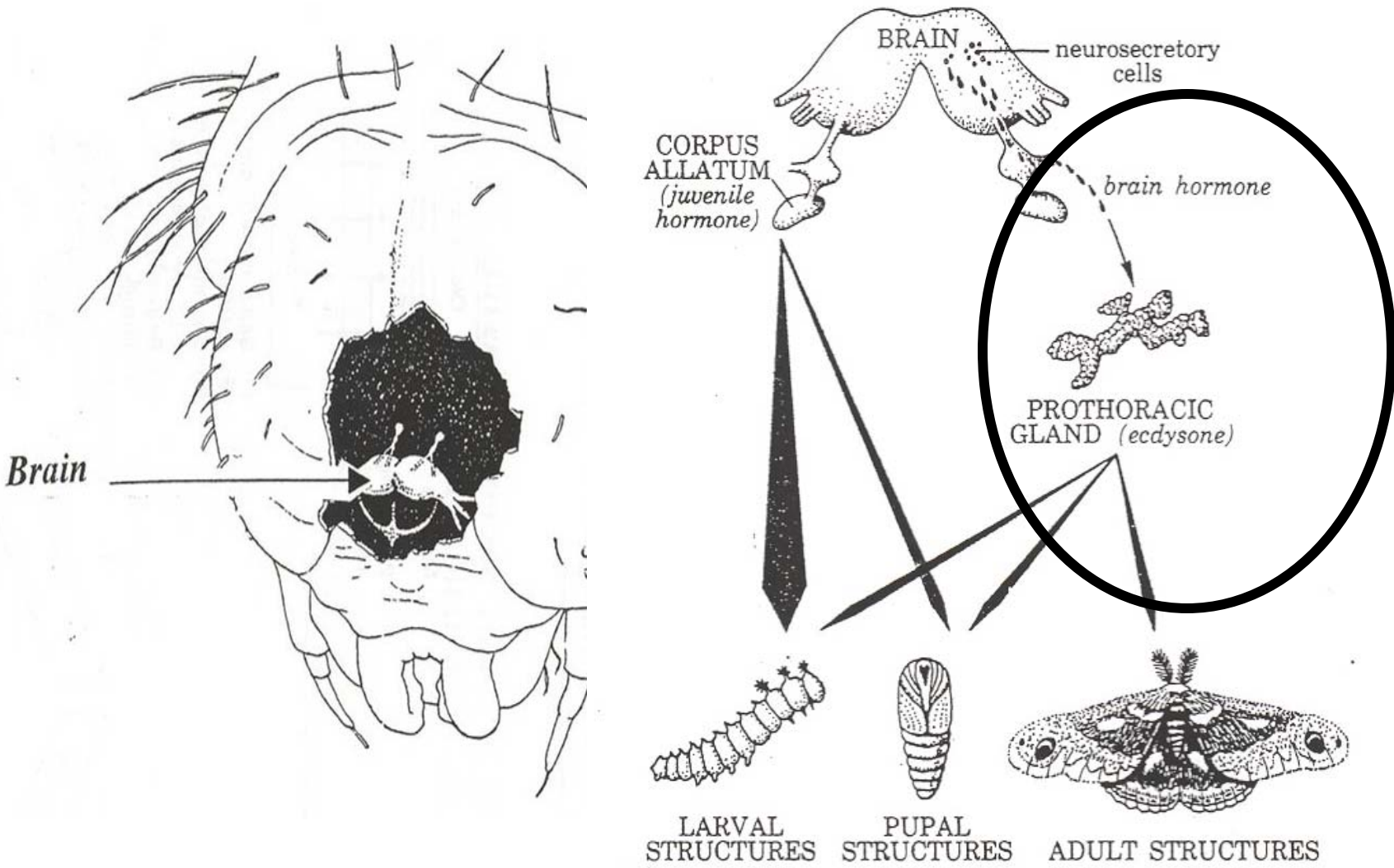**KEEP AN EYE OUT FOR THIRD
GENERATION OF LARVAE**

2nd GEN SPRAY
OCCURS AT BLOOM

Explosion and burnout can
appear with week(s)

Choose Intrepid or
Confirm to avoid
messing with pollinators
bee kill

CONFIRM and INTREPID

CONFIRM and INTREPID

- Must be eaten by larva
- Coverage! Aerial or short rinse
- Spreader/binder recommended
- Drying time (6 h)

- Multiple apps required for high pressure BHF

Keep up to date
Winter moth is around—
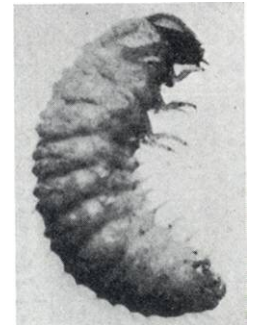# larvae may balloon in??

Admire 2F

- ## SOIL INSECTS
  - Striped colaspis
  - Oriental beetle
  - *Hoplia*??
  - Flea beetle?? if app late enough

Could be one of many

- Scarab beetles
  - Cranberry white grub
  - Cranberry root grub
  - Oriental beetle
  - *Hoplia equina*

- Black vine weevil

- Cranberry girdler

- Striped colaspis

Management differs
---based on ID

ADMIRE FOR GRUBS

- Must target small larvae, just before hatch is besst

- But bee toxicity high