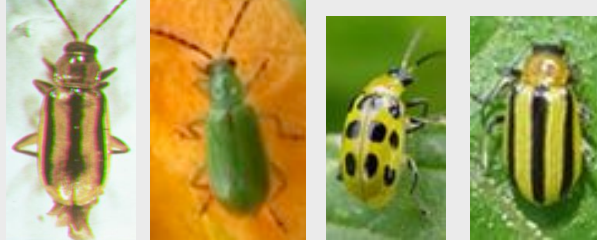


Cucumber beetle management by mass trapping



Celeste Welty
January 2008

Cucumber Beetle Kairomone Trap



- Developed by Trécé Inc.
- **Poison bait:** cucurbitacin + carbaryl (inside trap)
- **Volatile lure:** mimic squash flowers
- Most effective before flowers form



Early Season Trap-Out Trial

- Preliminary trial May/June 2003
- Compare:
 - Trap alone
 - Plant alone
 - Combo: Trap + plant
- 2 commercial farms
- Target the Memorial Day surge
- Results: **combo best**
- No evaluation of crop

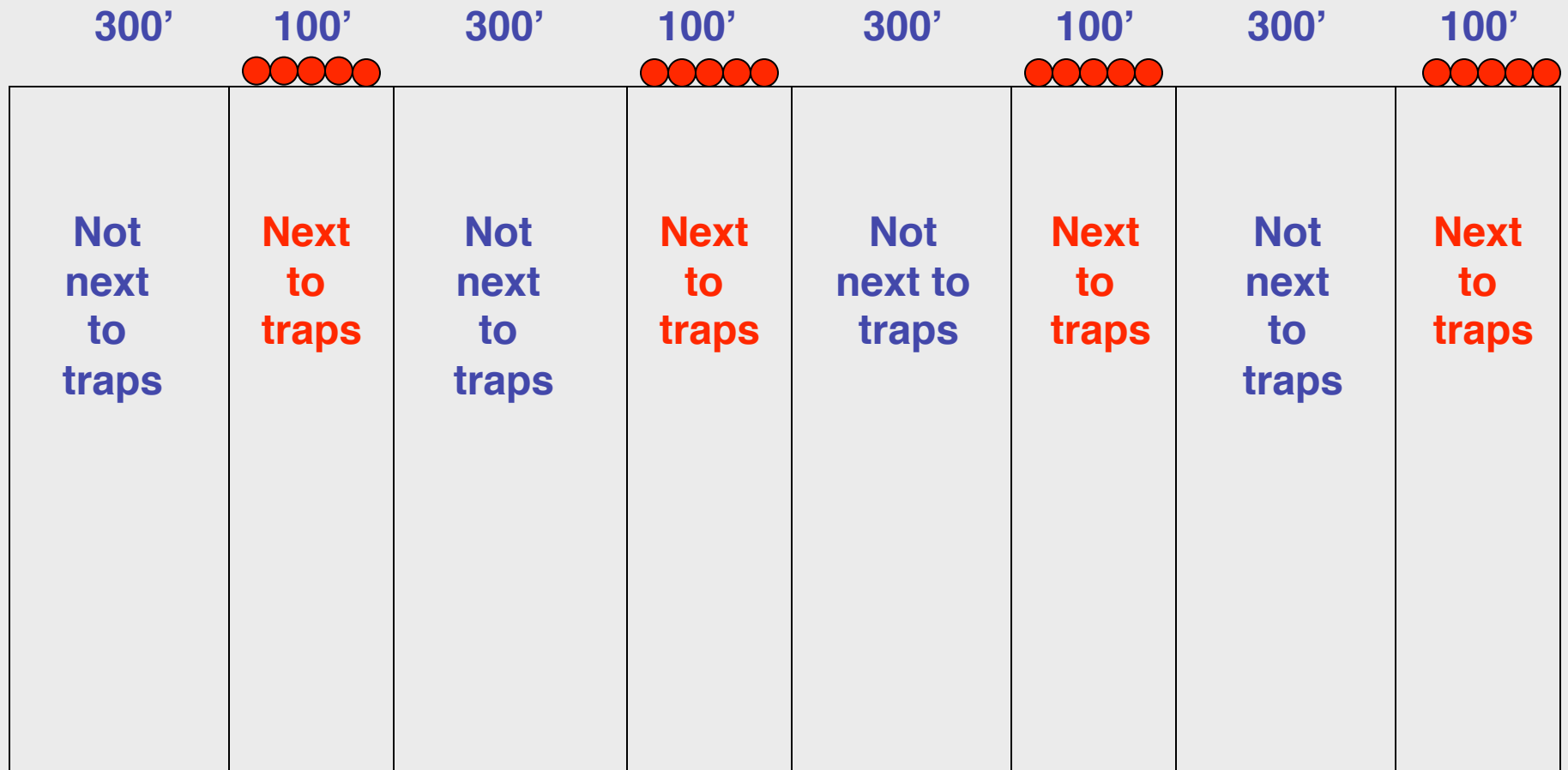


Early Season Trap-Out Trial 2007

- Place traps out before seeding the crop
- Count beetles killed in traps
- Evaluate damage to crop
- Goal: trap & kill most beetles before the crop emerges



Cucumber beetle trap-out trial
40-acre pickle field
2 treatments each with 4 replicates



**One
trapping
station =
one trap &
one box of
3 potted
plants
treated
with
Admire**



Potted squash plants treated with soil drench of Admire



5 traps at the edge of 1 plot

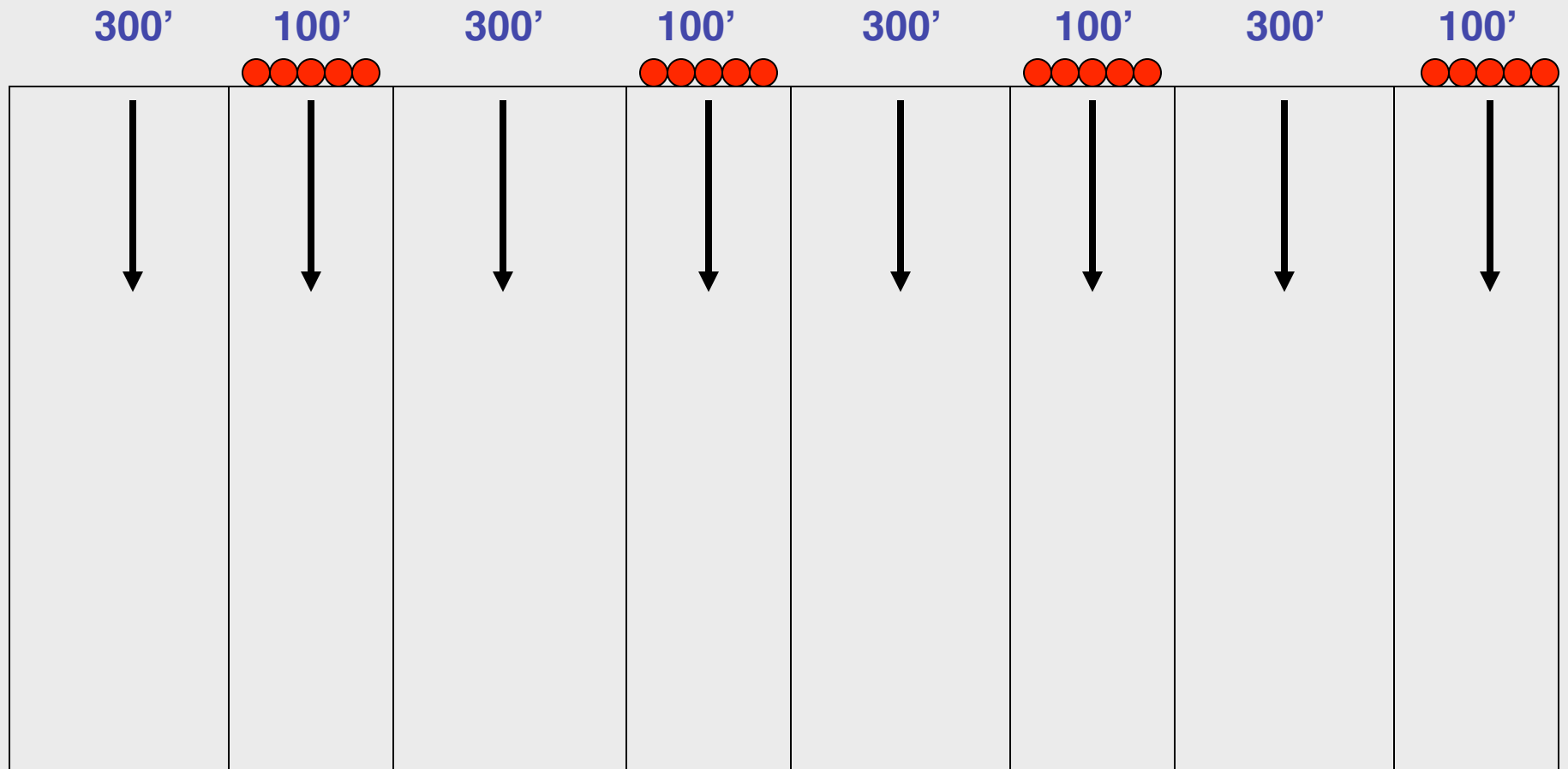
traps 20 ft apart

Last year's pickle field



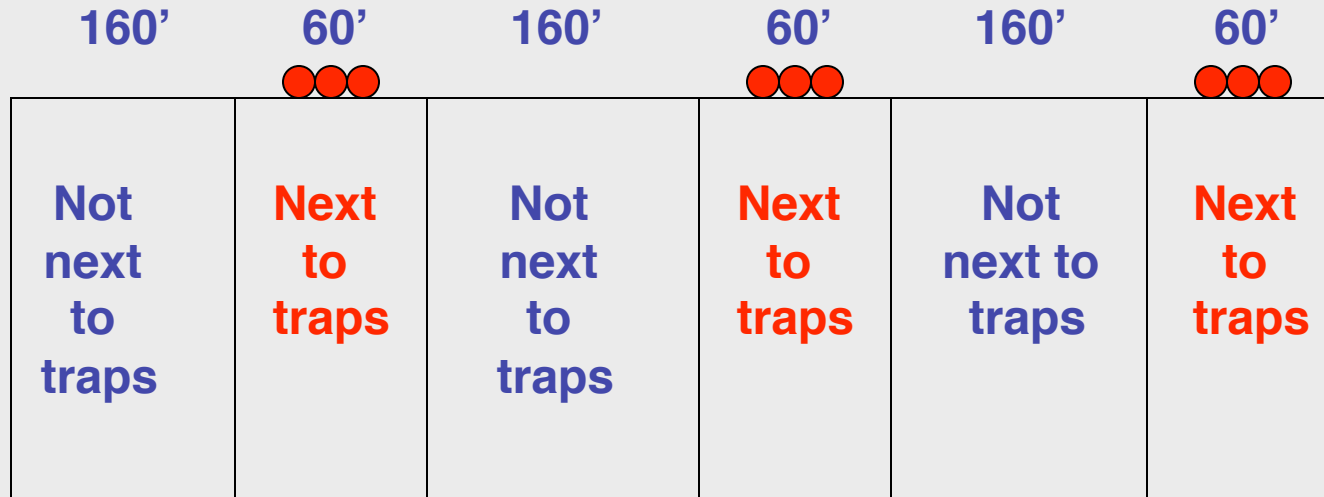
Cucumber beetle trap-out trial
40-acre pickle field

Scout 50 plants in each plot

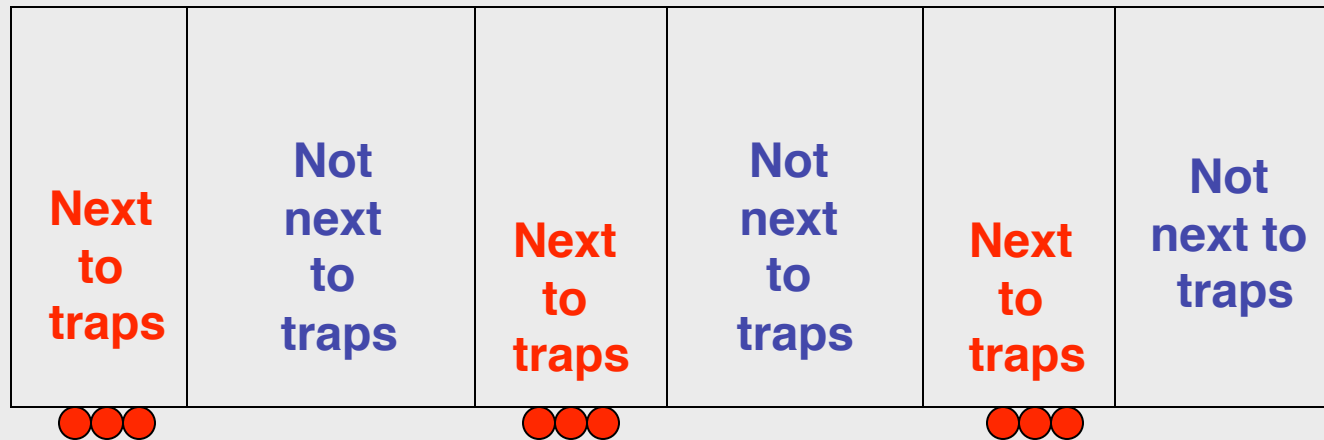


Cucumber beetle trap-out trial

Two 1-acre pumpkin fields



**With
insecticide,
seeded
5/31**



**No
insecticide,
seeded
5/23**

Timing

<i>Site</i>	<i>Date traps set</i>	<i>Date crop seeded</i>
Pickle field (Circleville)	May 3	May 5
Pumpkin field, no insecticides (Columbus)	May 15	May 23
Pumpkin field, with insecticides (Columbus)	May 15	May 31

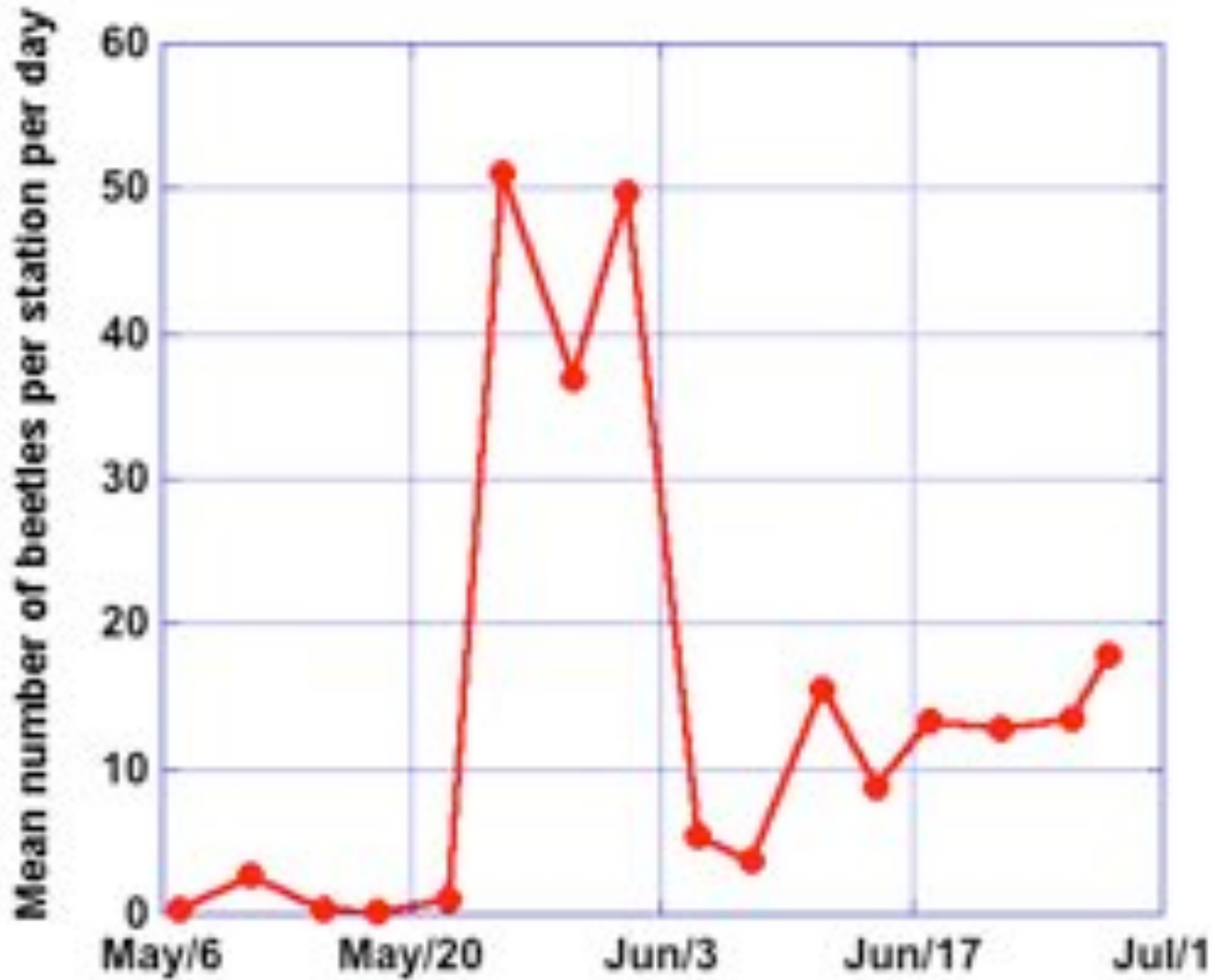
Early Season Trap-Out Trial 2007

- **Trapping stations checked twice per week for 6 weeks**
 - **Beetles dead in traps**
 - **Beetles dead at base of potted plants**
 - **Data recorded by species**
- **Field plants scouted once per week for 6 weeks**

Results: Beetles trapped in 2 months

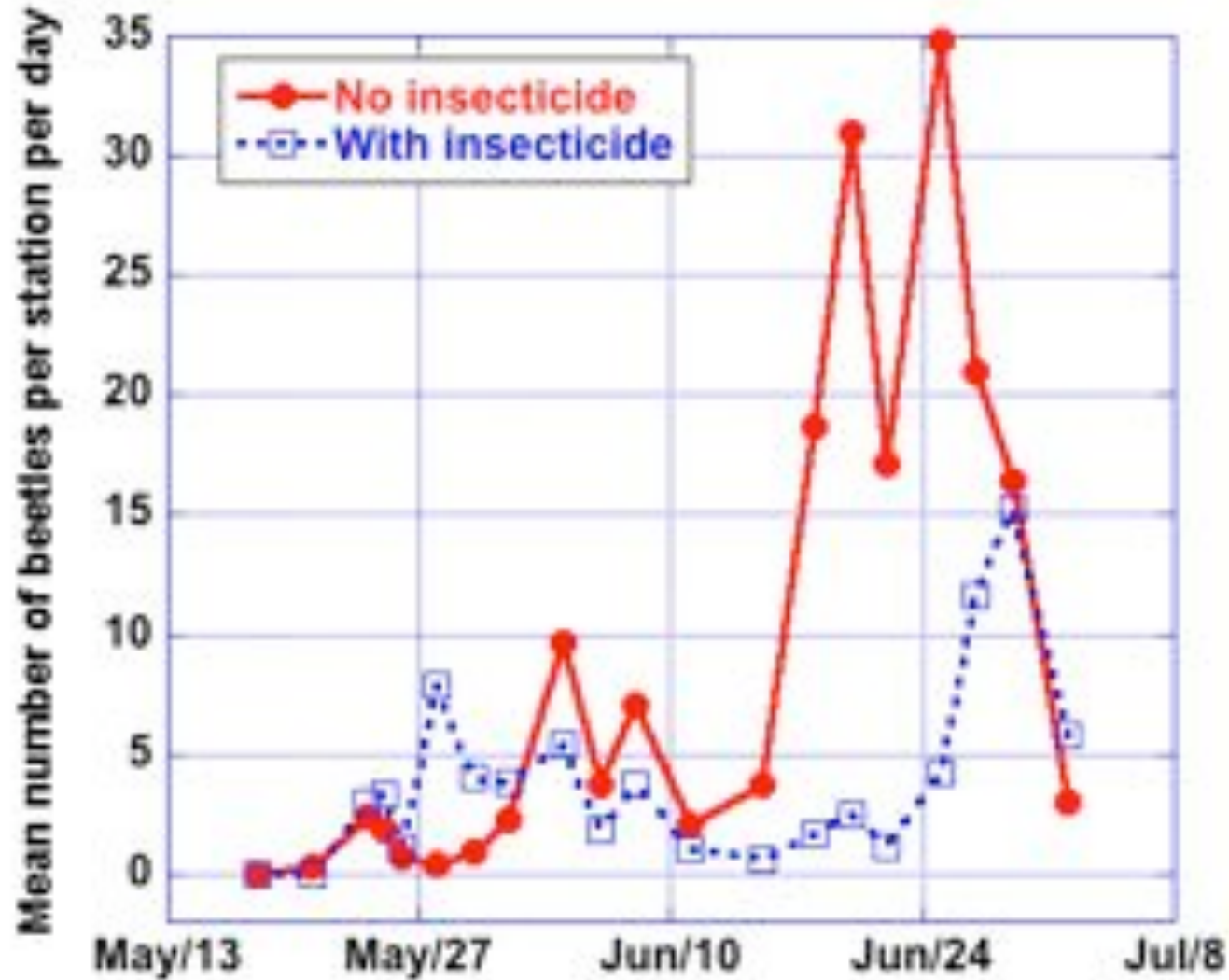
<i>Site</i>	<i>Number of trapping stations</i>	<i>Total number of beetles</i>	<i>Max beetles/station/day</i>
Pickle field (Circleville)	20	15,099	51
Pumpkin field, no insecticides (Columbus)	9	3,864	35
Pumpkin field, with insecticides (Columbus)	9	1,560	15

Cucumber beetles trapped at edge of pickle field 2007



Peak from 5/25 to 6/1

Cucumber beetles trapped at edge of 2 pumpkin fields 2007



Peaks on **6/4 & 6/25** & **5/28 & 6/29**

Trends in beetle catch

- **Striped cucumber beetle**
 - More on potted plants
 - Fewer in traps
 - Usually 2x difference (but some >8x)
- **Spotted cucumber beetle**
 - More in traps
 - Fewer on potted plants
 - Usually 2x difference



Cucumber beetle feeding damage: rated on scale 0 to 3



1 = light



2 = moderate



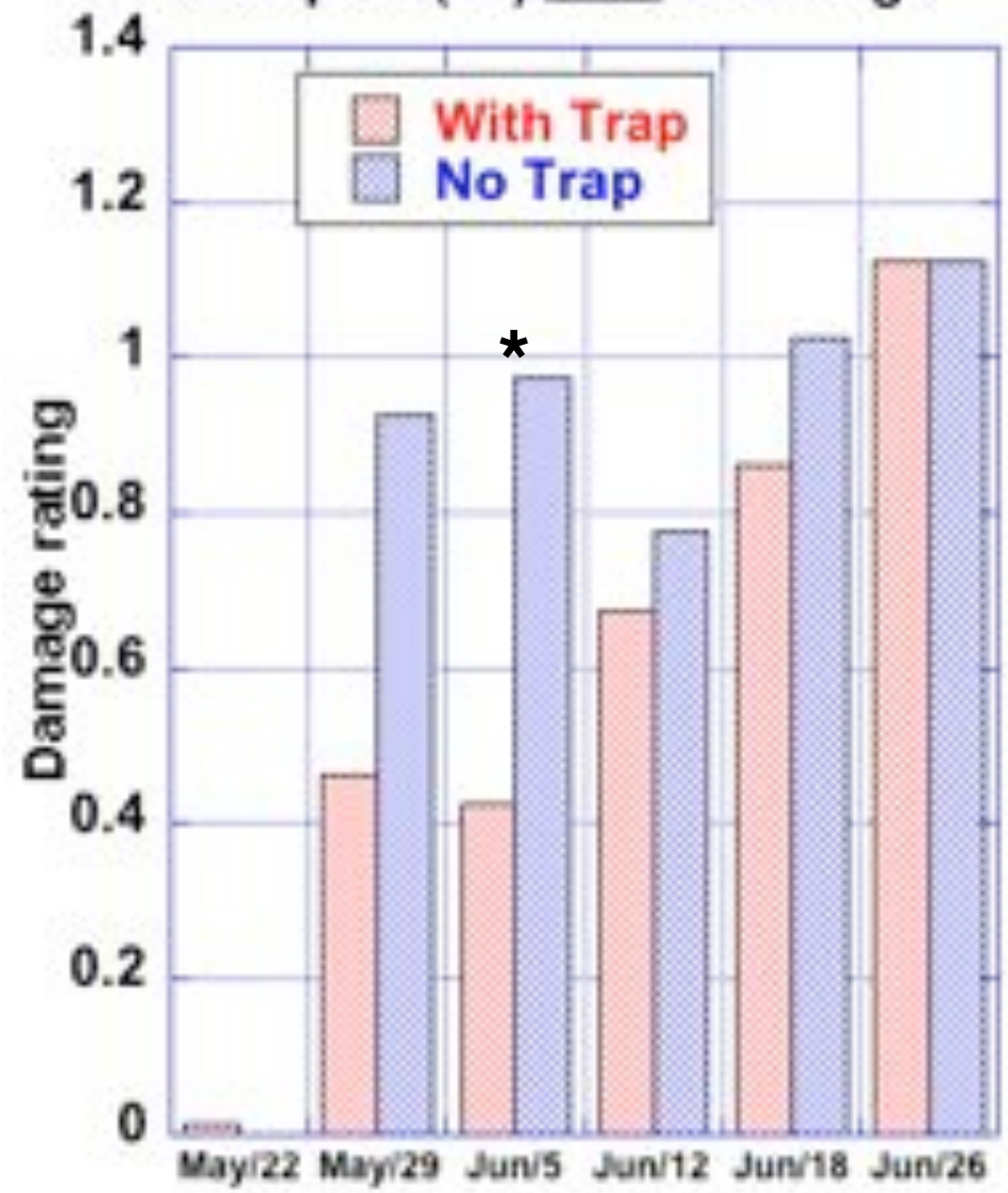
3 = heavy

Pickle scouting, Circleville, 2007
All 50 samples per plot



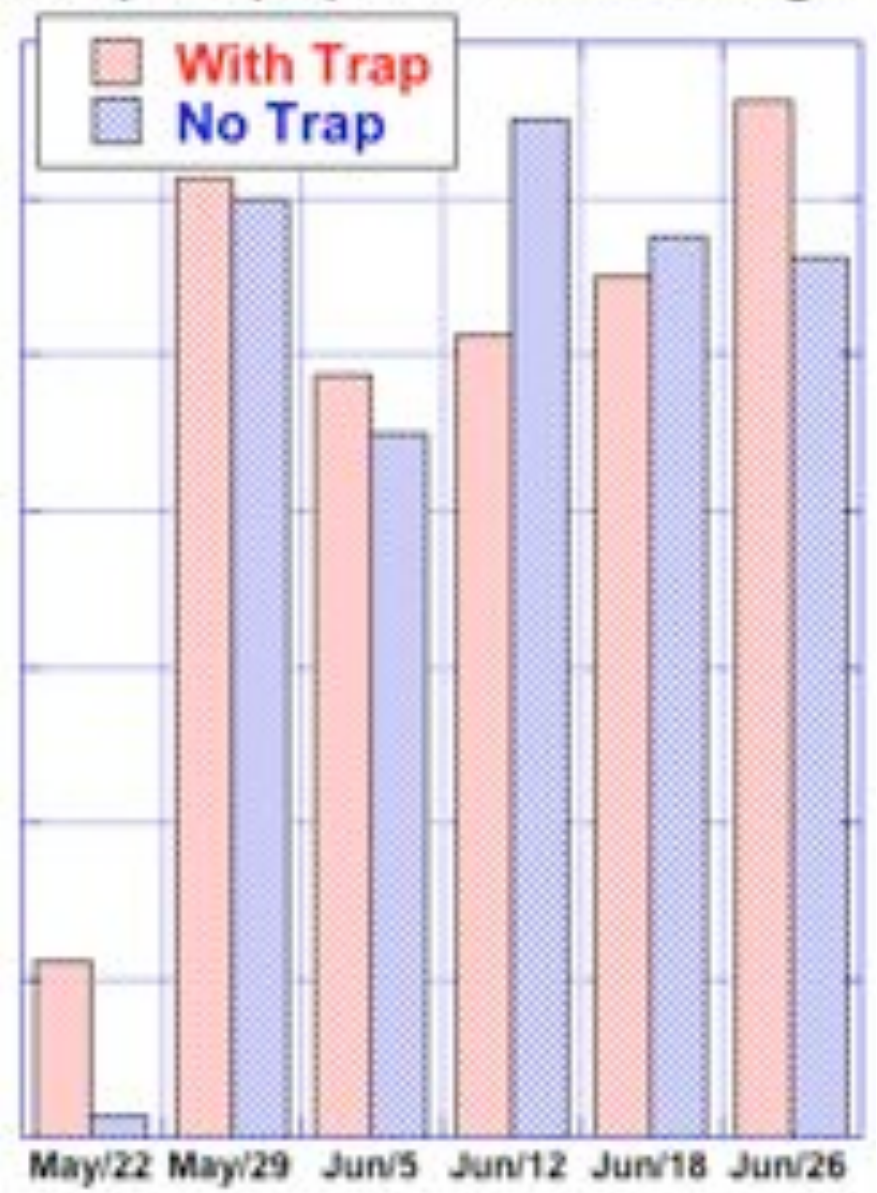
Pickle scouting
Circleville, 2007

Samples (20) near field edge



Pickle scouting
Circleville, 2007

Samples (20) far from field edge



Early Season Trap-Out Trial 2007

- **Similar results for pumpkin sites**
- **Conclusions:**
 - **Many beetles removed by trapping stations**
 - **Trapping had little effect on reducing damage**
 - **Most beetles trapped after crop up, not before**
- **Future:**
 - **Could try traps on all sides of field**
 - **Need to test substitute for carbaryl in bait**