

The Impact of Insecticides on NOW Populations and Damage

Bradley S. Higbee

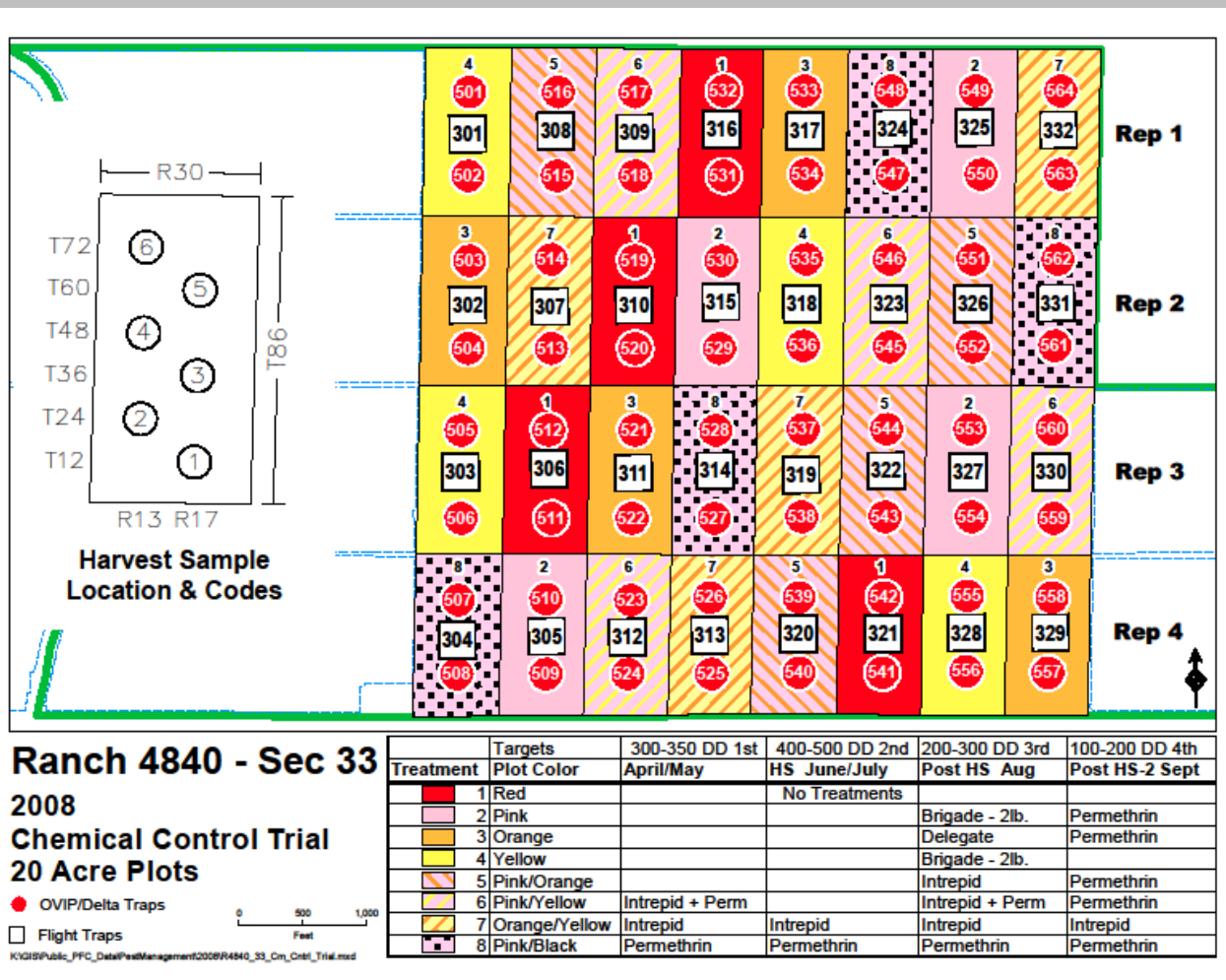
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Insecticide Trials in 20 ac Plots



Pistachio Insecticide Trials

Treatments – 2008

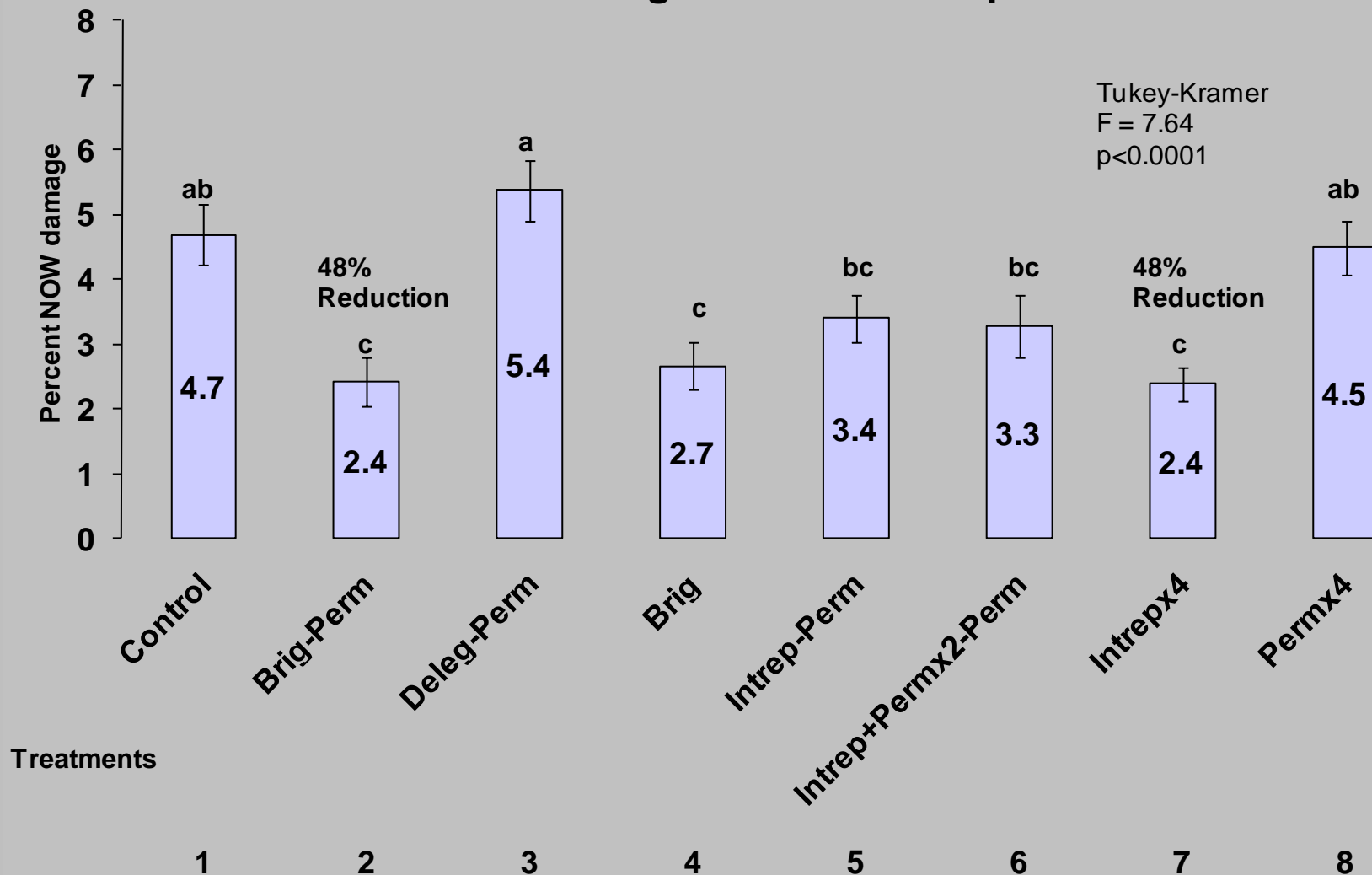
4 replicates

Single harvest on Sept 22

| Treatment | 5/2 (313 dd) | 6/28 (1313 dd) | 8/7 (2331 dd) | 9/3 (2991 dd) |
|-------------|-----------------------------|-----------------------------|-----------------------------|------------------------|
| 1 | Control | | | |
| 2 | | | Brigade | Permethrin |
| 3 | | | Delegate | Permethrin |
| 4 | | | Brigade | |
| 5 | | | Intrepid | Permethrin |
| 6 | Intrepid+Perm | | Intrepid+Perm | Permethrin |
| 7 | Intrepid | Intrepid | Intrepid | Intrepid |
| 8 | Permethrin | Permethrin | Permethrin | Permethrin |
| Biofix 3/15 | 1 st 3/15 – 6/17 | 2 nd 6/17 – 7/29 | 3 rd 7/29 – 9/10 | 4 th 9/10 – |

NOW Pistachio Insecticide Trials - 2008

NOW Damage at Harvest - Sept 22



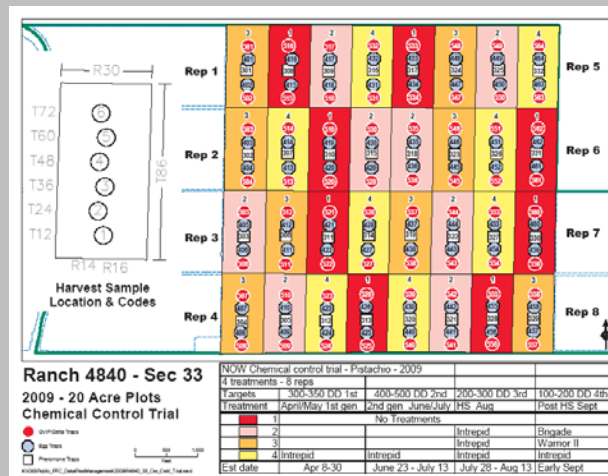
Pistachio Insecticide Trials

Treatments – 2009

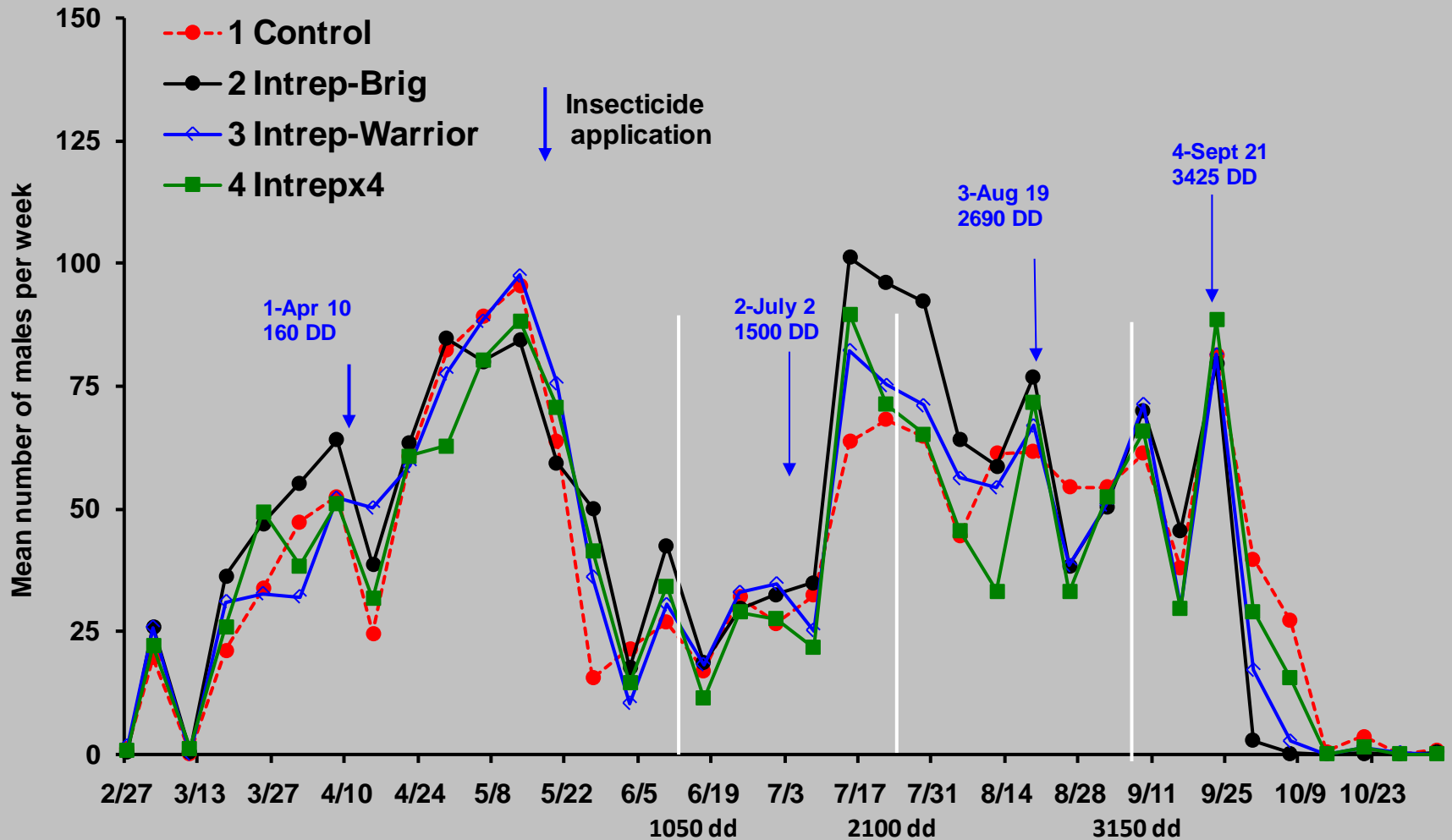
8 replicates

Harvest on Sept 19 and Oct 5

| Treatment | 4/10 (160 dd) | 7/2 (1500 dd) | 8/19 (2690 dd) | 9/21 (3425 dd) |
|-------------|-----------------------------|-----------------------------|----------------------------|-----------------------|
| 1 | Control | | | |
| 2 | | | Intrepid | Brigade |
| 3 | | | Intrepid | Warrior II |
| 4 | Intrepid | Intrepid | Intrepid | Intrepid |
| Biofix 3/15 | 1 st 3/15 – 6/11 | 2 nd 6/11 – 7/25 | 3 rd 7/25 – 9/7 | 4 th 9/7 – |

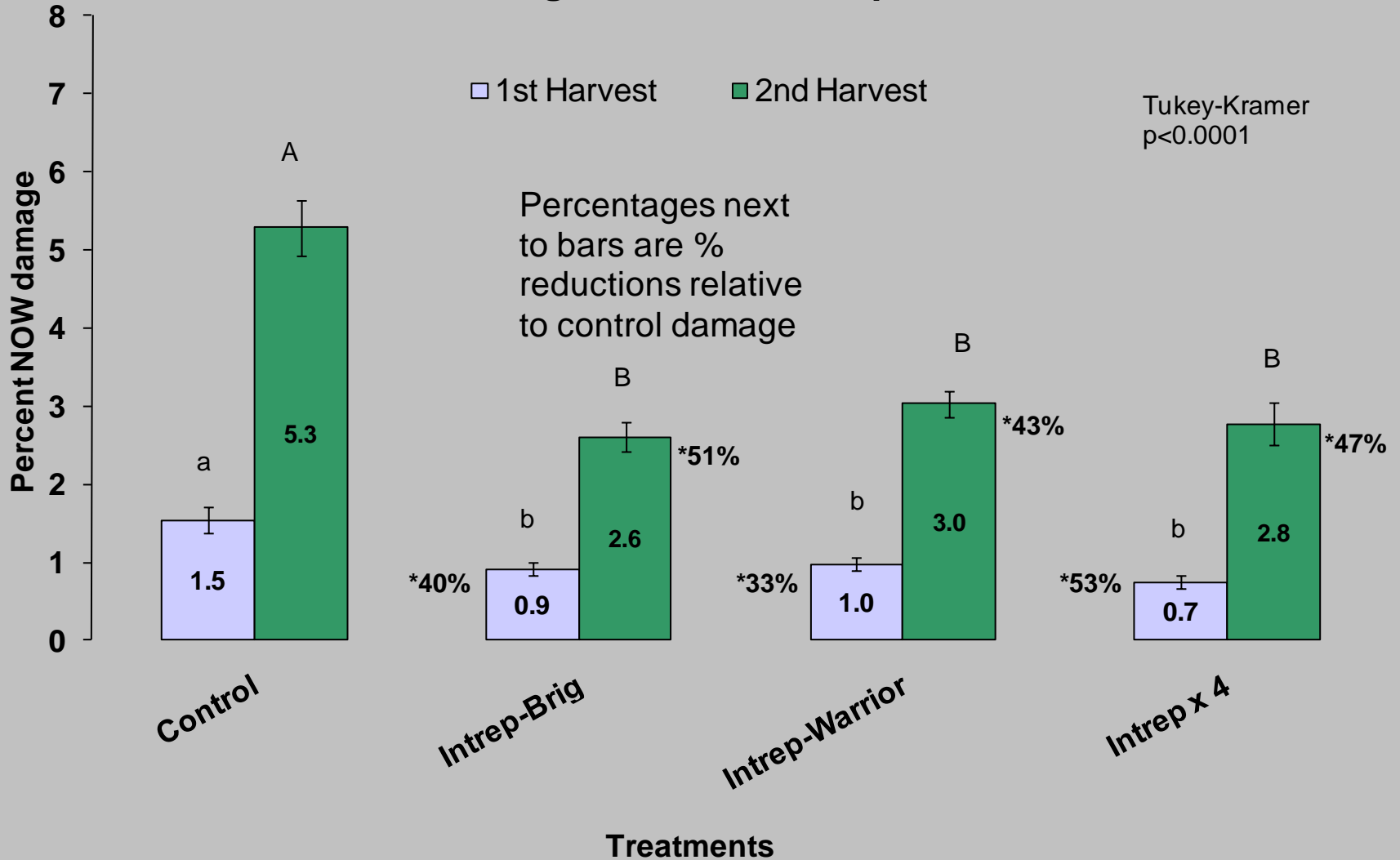


NOW Insecticide Trials - Pistachio Pheromone Traps - 2009



NOW Pistachio Insecticide Trials - 2009

NOW Damage at Harvest - Sept 19, Oct 5



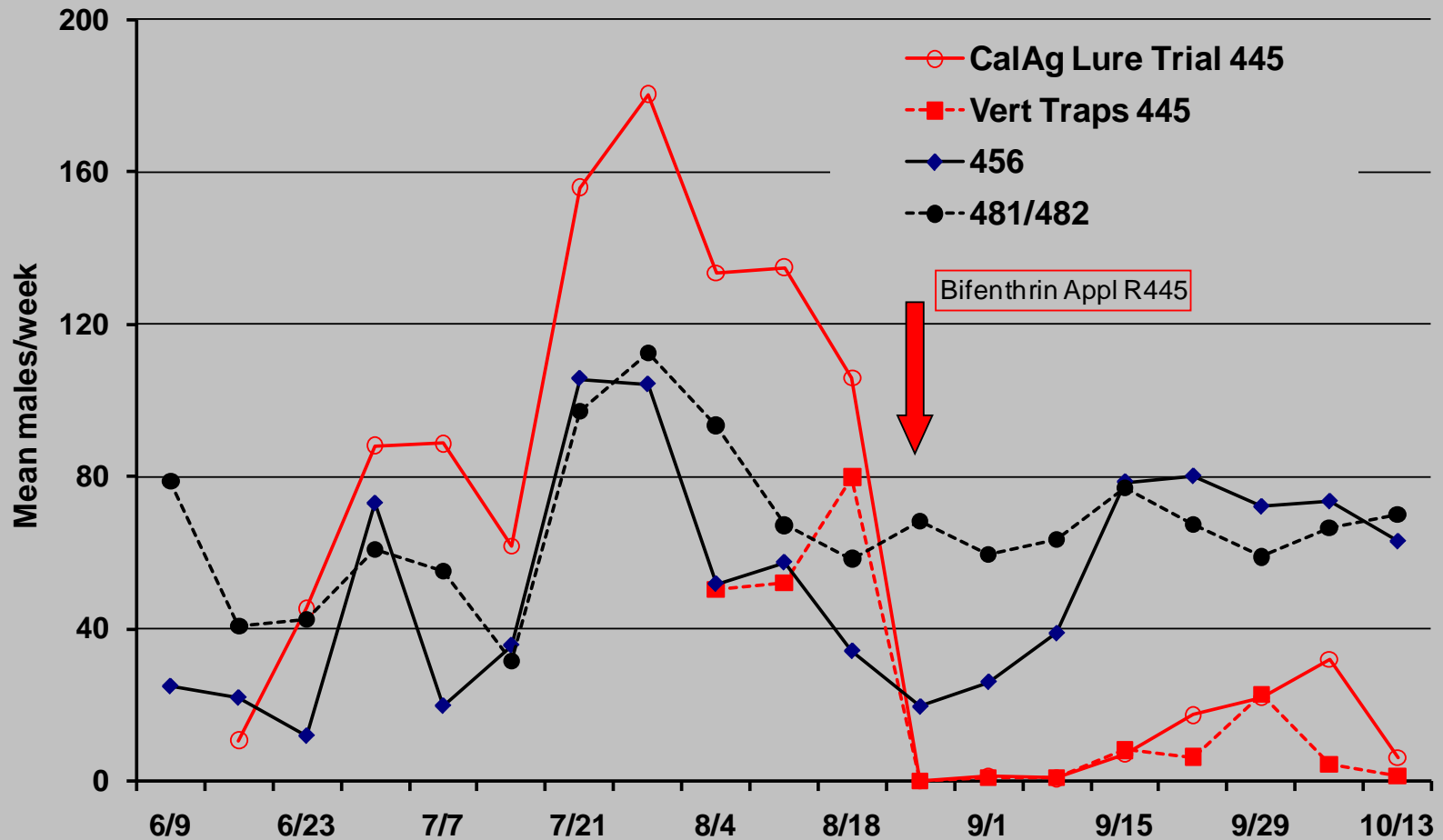
Insecticide Comparisons in Large Areas



Impact of Brigade on NOW in large areas

400-600 ac

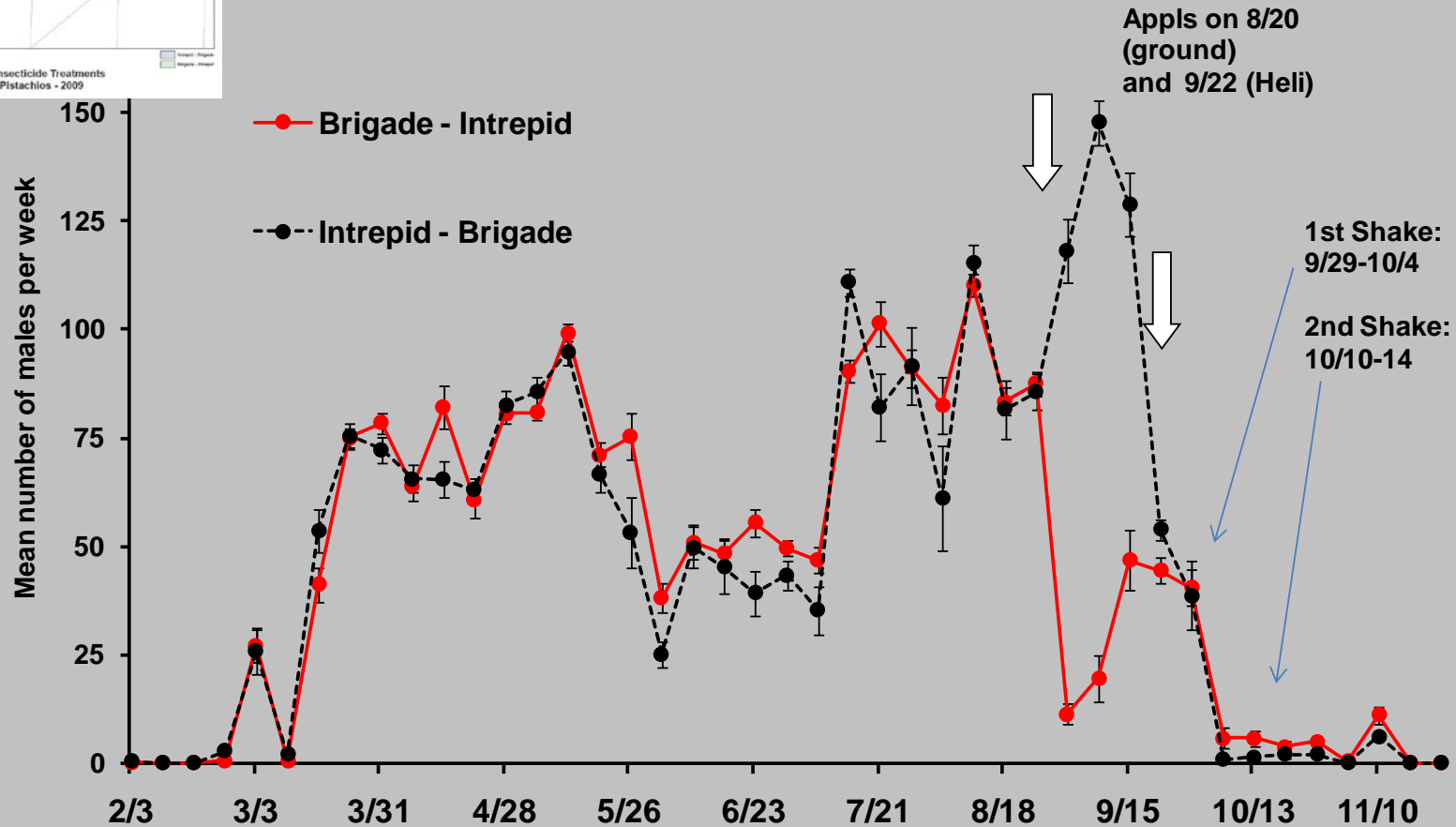
Pheromone traps - 2008



Insecticide Impact on NOW in large areas

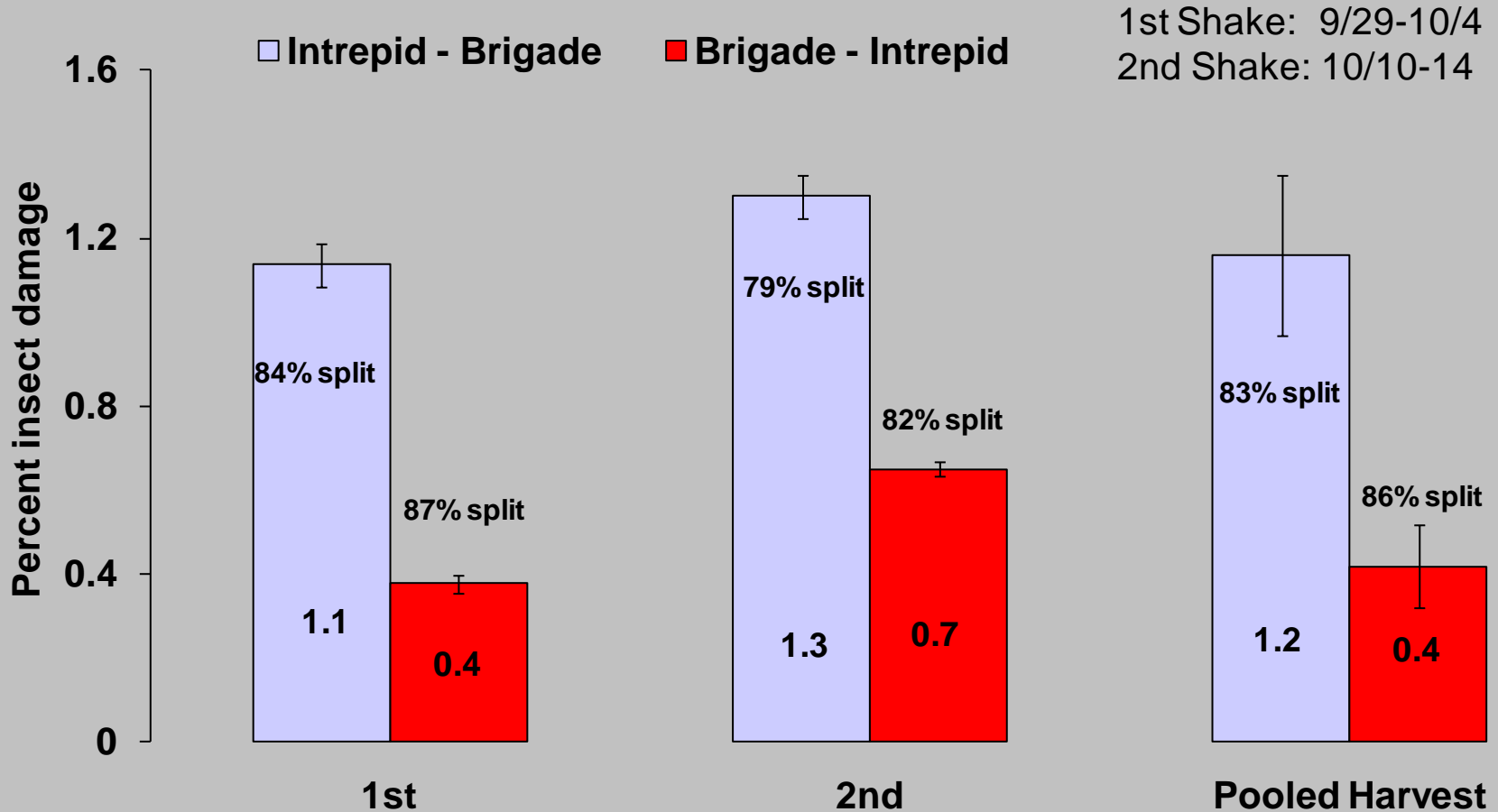
300-640 ac plots

Pheromone traps - 2009



Insecticide Impact on NOW in Pistachio

300-640 ac plots - 2009



NOW Insecticides in Pistachio

- Permethrin not very effective vs NOW...BUT likely targets same detox system as other pyrethroids
- Brigade and Warrior have tremendous impact on NOW pops and damage, particularly as the treated area increases in size
- The most effective application timing for these pyrethroids is at “HS” (late July-Aug), targeting the 3rd flight, in both 1 and 2 harvest programs

Permethrin

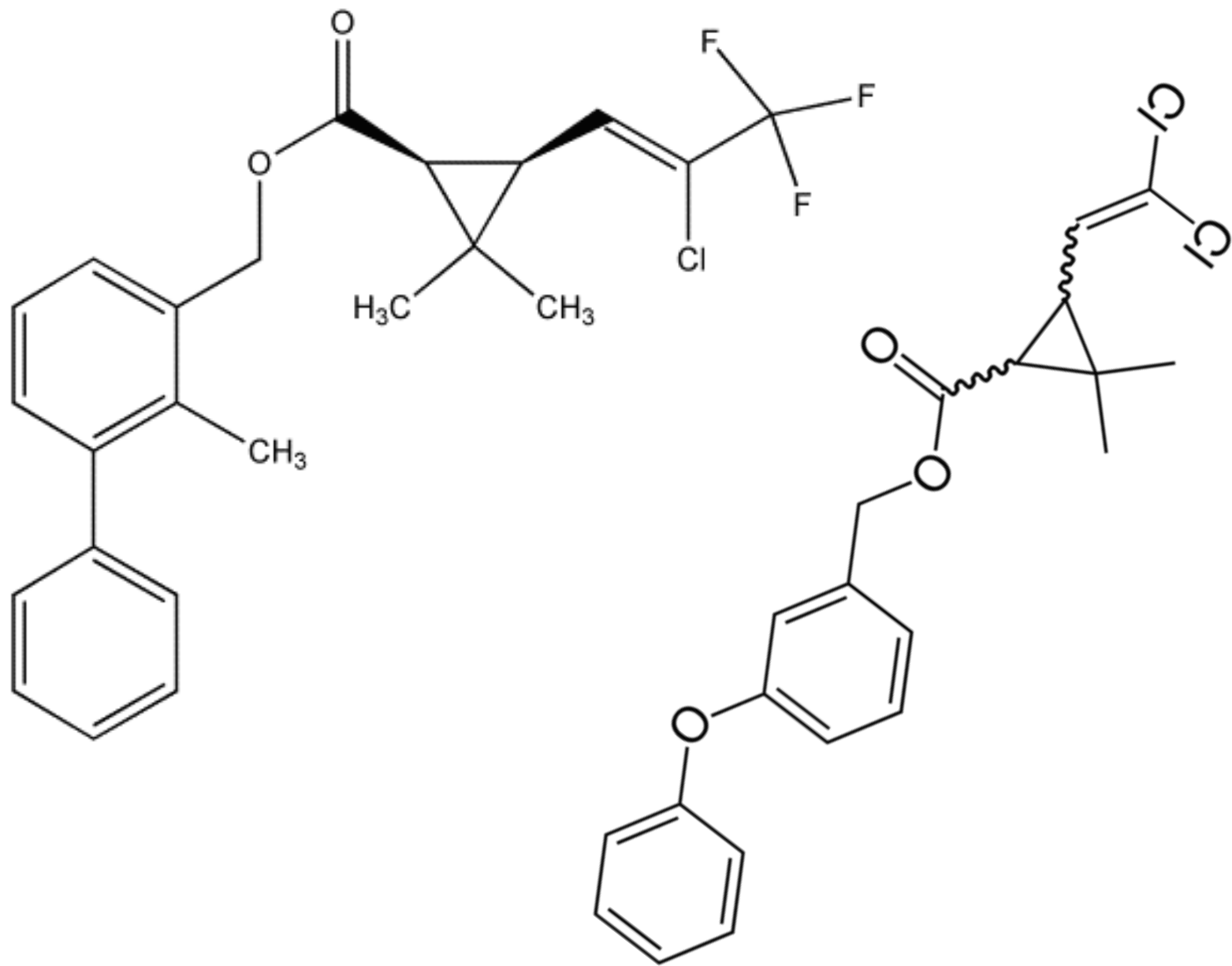
- Relatively little impact
- 1 day PHI allows flexibility

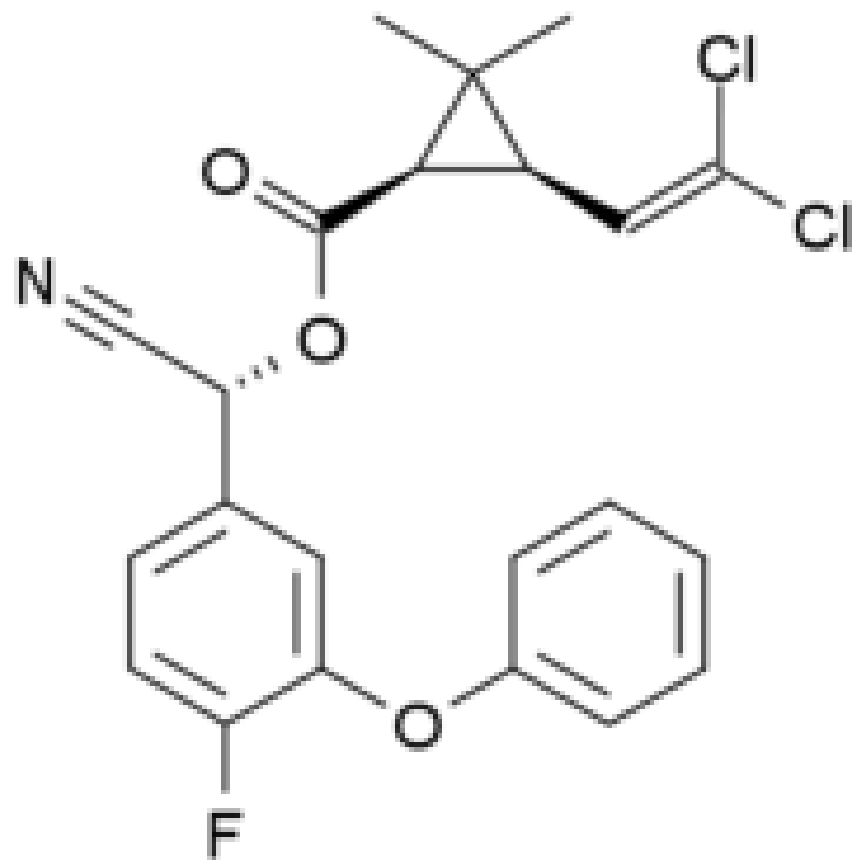
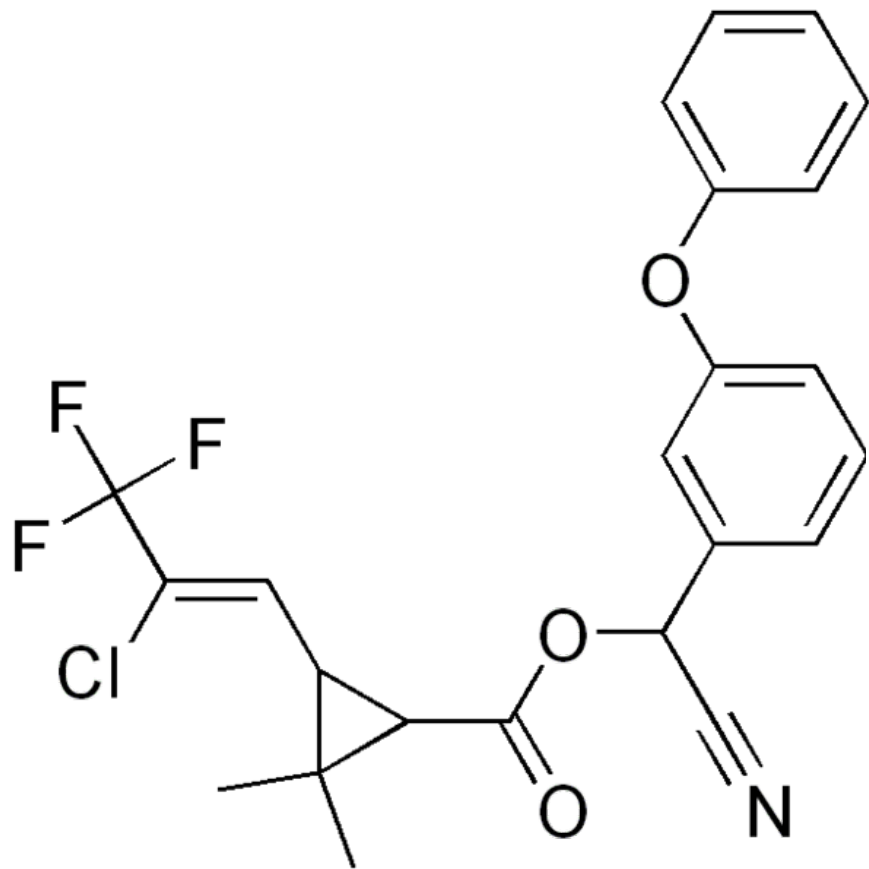
Intrepid

- Good activity
- 14 day PHI can be problematic

Brigade

- Greatest impact
- 7 day PHI

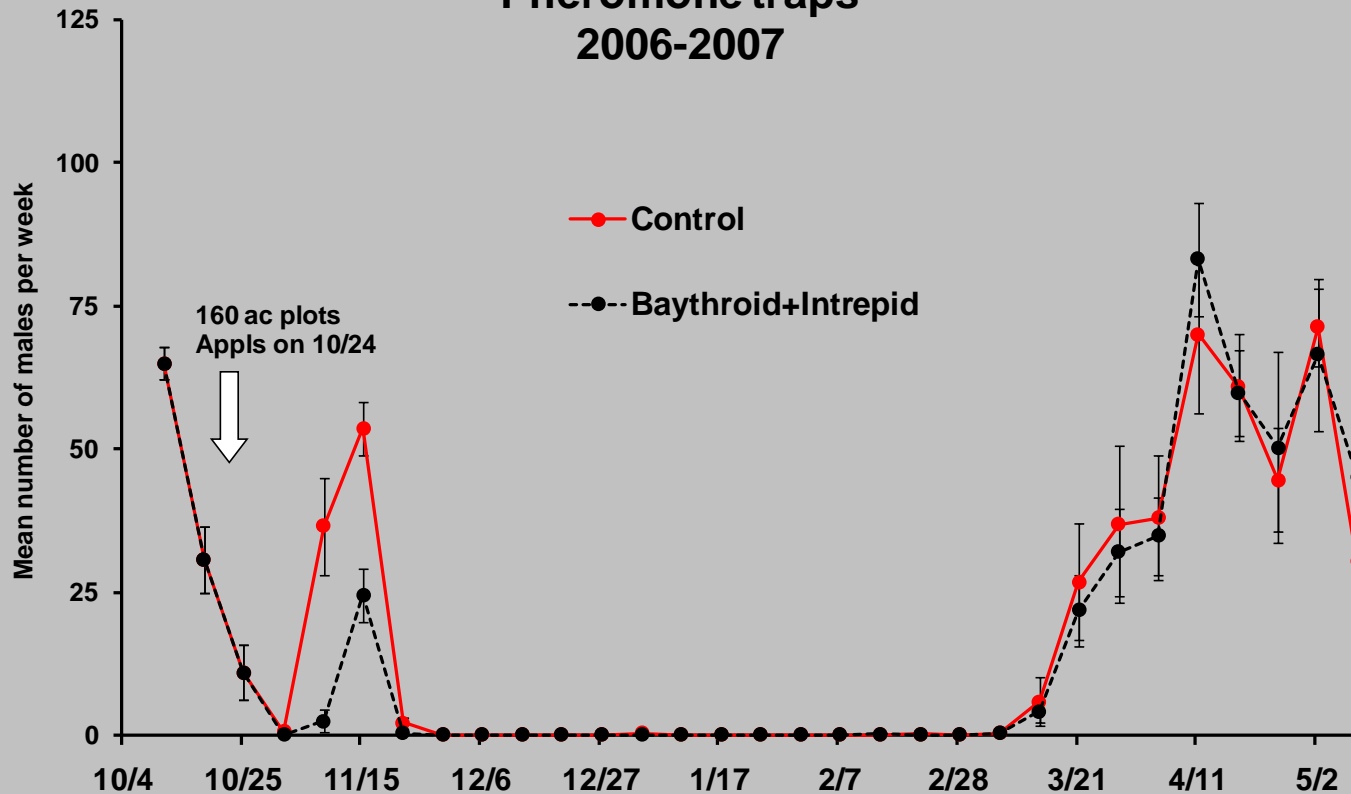




Monitoring the effects of late season treatments on spring pops in 160 ac plots

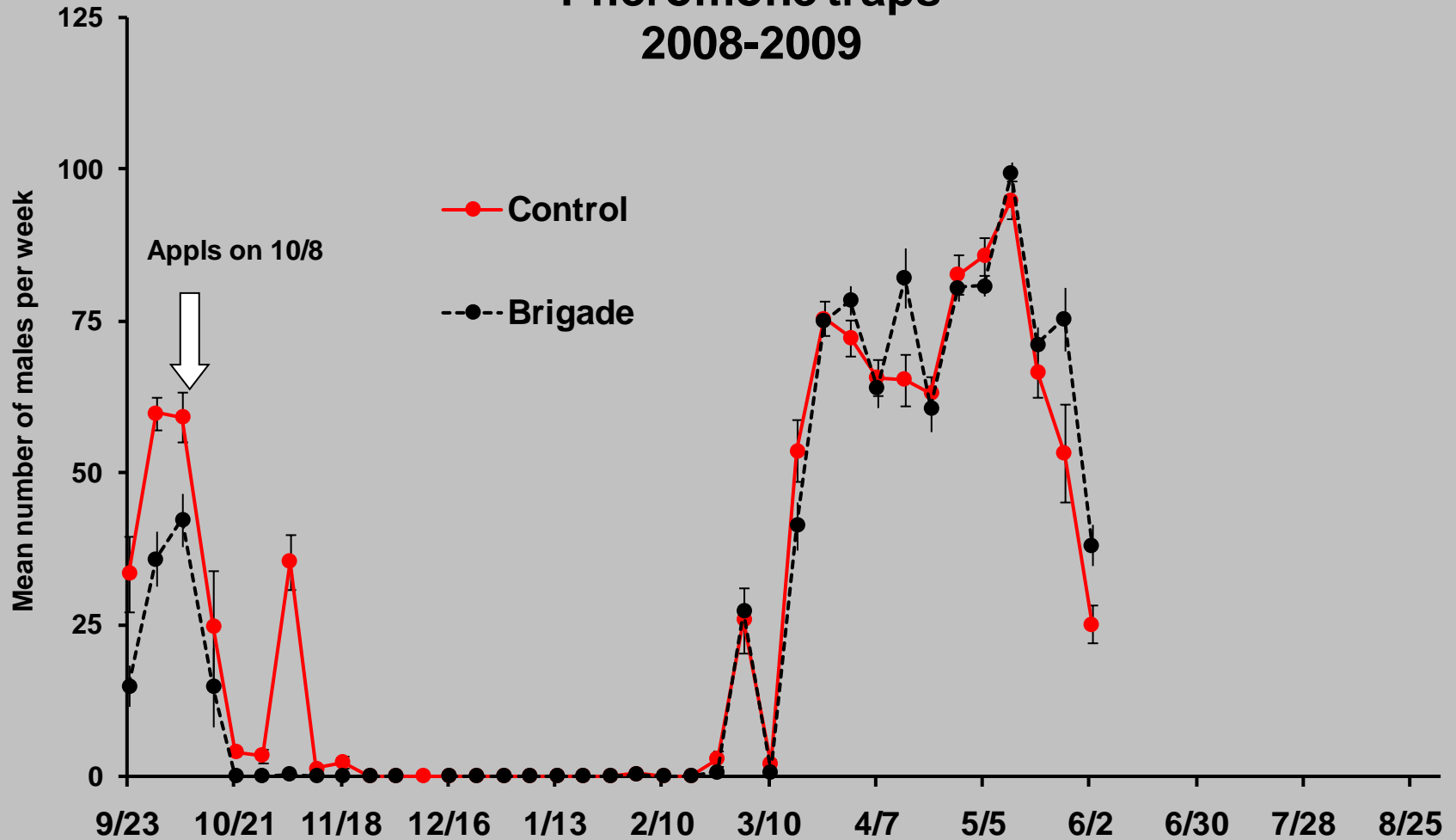
Impact of Late Season Treatments

Pheromone traps
2006-2007



Late Season Treatments in Pistachio

Pheromone traps 2008-2009



Impact of Late Season Treatments on Spring Pops

- The 3rd gen pyrethroids can greatly reduce late season pops
- The “carry-over” impact on spring pops less consistent – dispersal/movement may hide effects when using phero traps as the metric
- An “areawide” approach might result in a measurable reduction in spring pops
- Further work will focus on larger areas and additional compounds

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Entomology Research



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