California Strawberry Commission
2012 Lygus Research Summary

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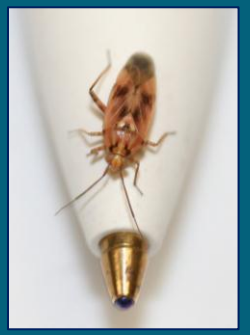


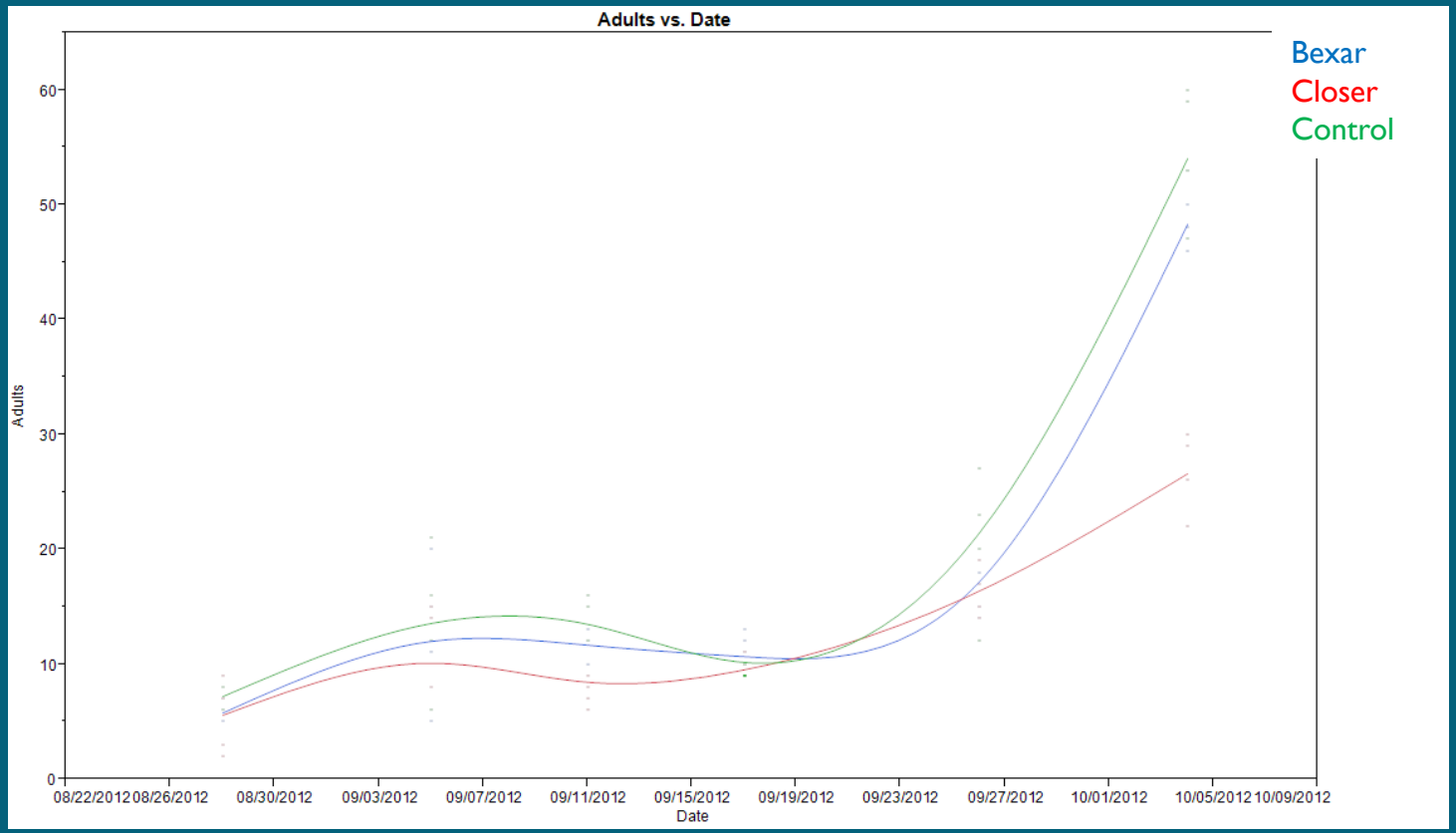
Update on new spray materials

Material	Active Ingredient	Mode of Action	IRAC	Update
Beleaf	Flonicamid	Feeding blocker	9C	Was available for Oct 2012; expected May-June 2013
Belay	Chlothianadin	Neonicotinoid	4A	
Bexar*	Tolfenpyrad	METI	21A	Spray trial data
Closer*	Sulfoxaflor	Sulfoxaflor	4C	Spray trial data

Lygus Spray Trial

- Guadalupe trial sprayed on 8/29 and 9/12/12
- Watsonville trial sprayed 10/5 and 10/12/12
- 0.08 acres/plot, 1/3 acre per treatment, 4 reps

Guadalupe Spray Trial
Preliminary Results – Adult Lygus

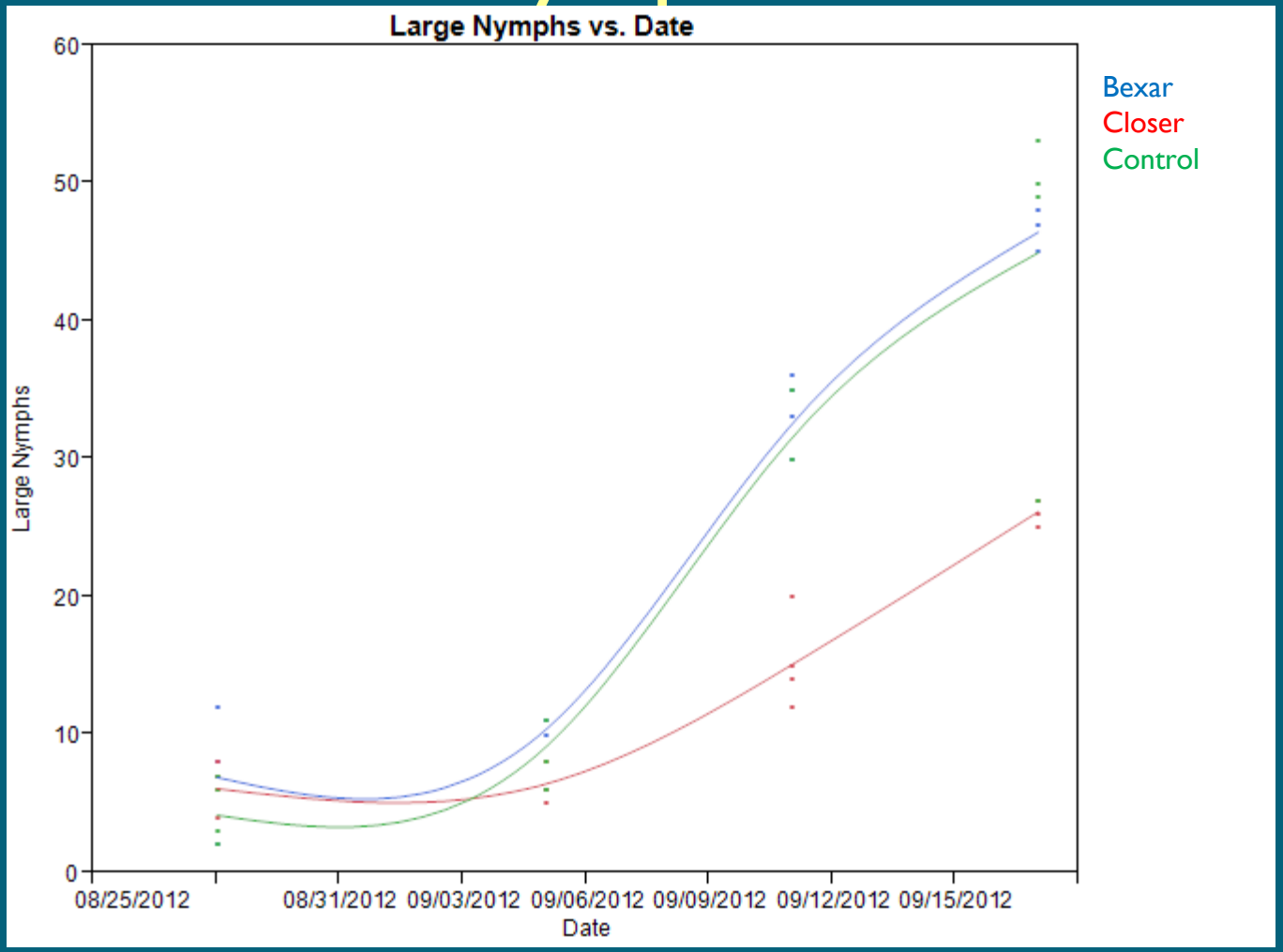


Average Lygus per 20 plants (N=4)

Significantly less Lygus adults, large nymphs and small nymphs in Closer treatment

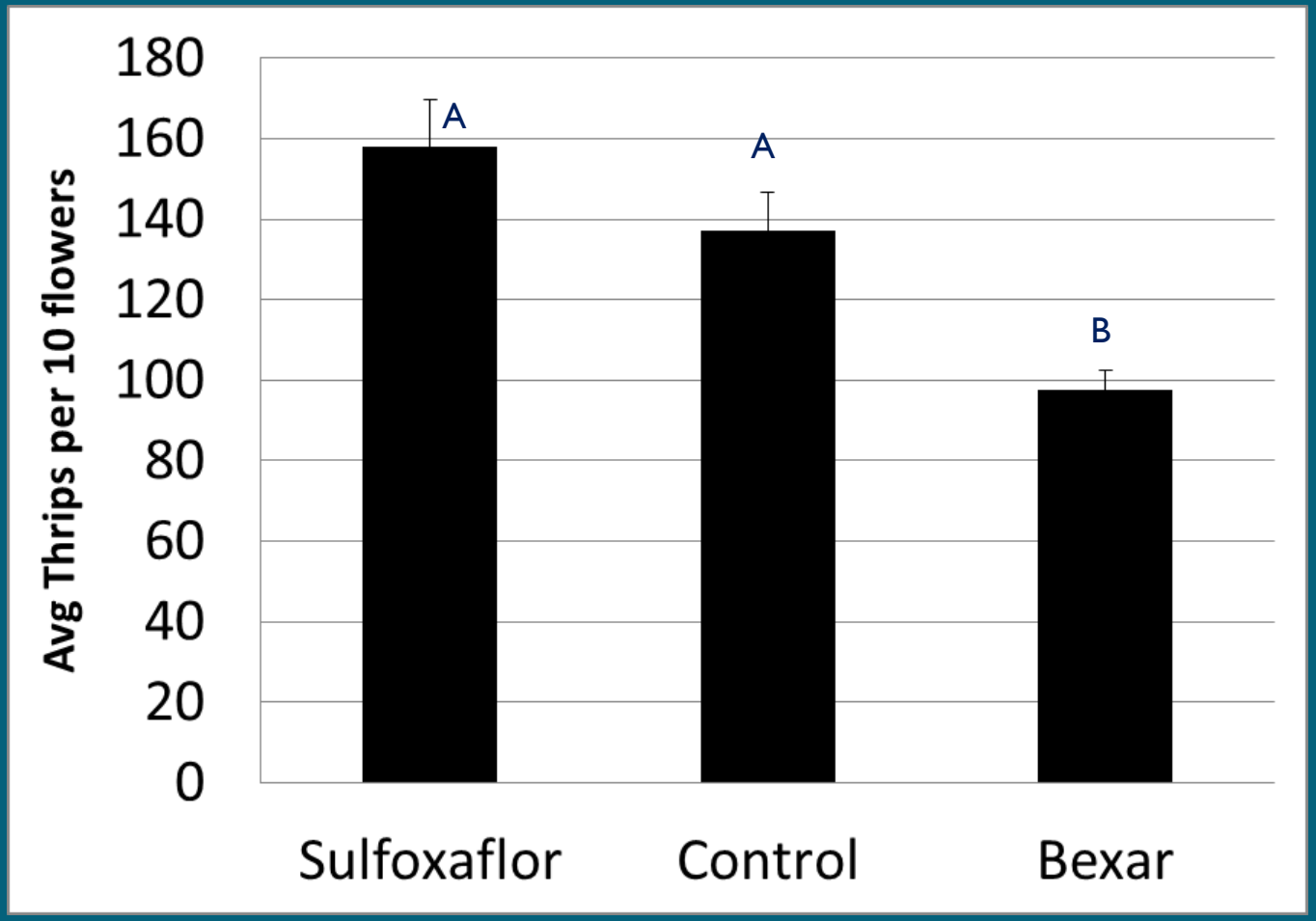
~ 56% average reduction in culled fruit

Spray Trial
Preliminary Results – Lygus Large Nymphs



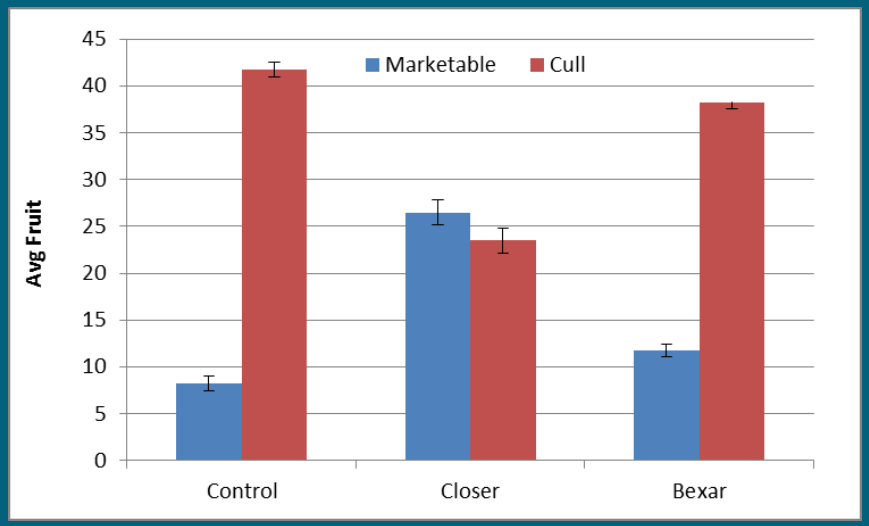
Spray Trial
Preliminary Results - Thrips

Guadalupe Trial

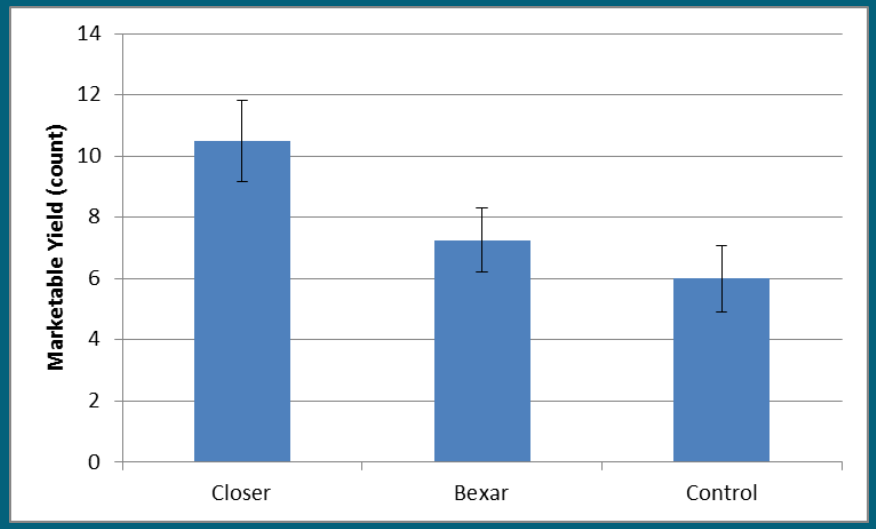


Spray Trial
Preliminary Results

- Closer may be a more promising Lygus material
- Bexar may be a more promising thrips material
- Marketable yield was increased in both trials



Guadalupe Trial
Fruit Evaluation (N=4)



Watsonville Trial
10/19 Fruit Evaluation (N=4)

2012 Program

Monitoring Program

- 28 Scouts trained early season (March-April)
  - Santa Maria
  - Salinas/Watsonville
- 20 participants continued through season (72%)

Bioassays

- Tested 26 fields (1st and 2nd year fields)
  - 24 were program participants
  - + End of season and beginning of season
  - + Paired second year and first year fields
- Commonly used pesticides and tank mixes
- Watsonville-Salinas and Santa Maria-Guadalupe

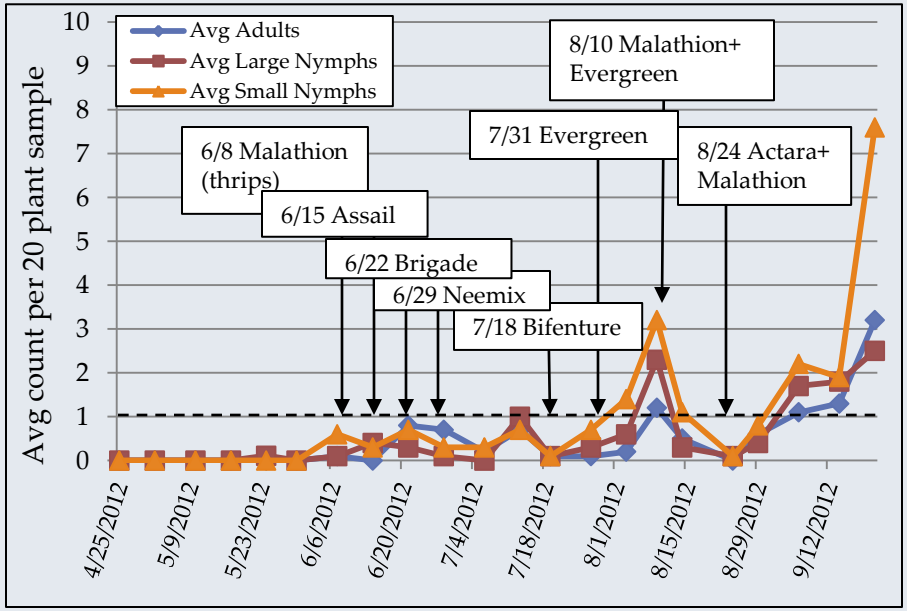
Grower Surveys

Pre and post-season

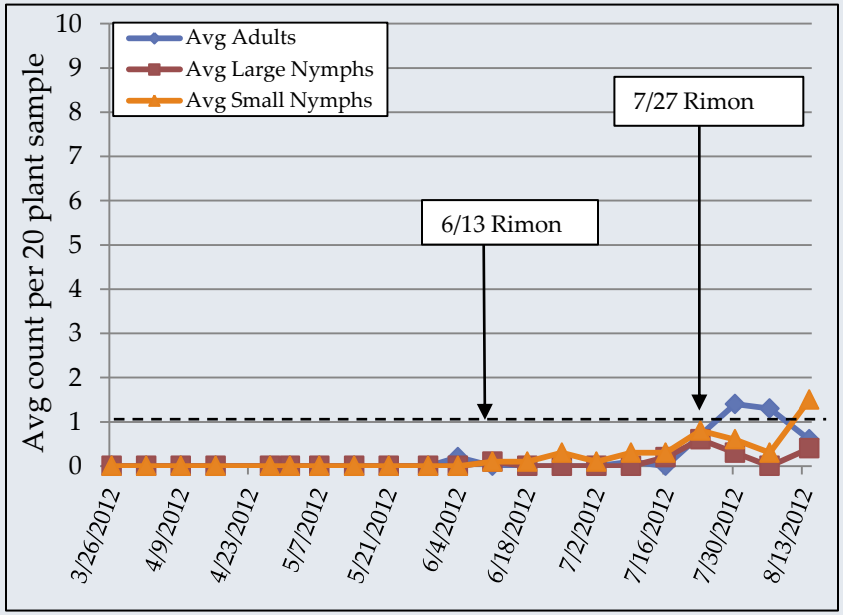
Grower Surveys

- Lygus is the most important insect pest problem for this industry; 63% of respondents replied that their program improved this year.
    - Successful management: low pressure, monitoring
    - Unsucessful high pressure, low efficacy of spray materials
- Second year neighboring berries were ranked as the most important source of Lygus moving into first year fields
- Almost 89% of growers have some form of an IPM program: 74% rotate crops; 100% rotate chemicals
- Vacuums were used by 53% of respondents, those who vacuum rank it highly valuable (4.3/5)
- 84% would support restrictions on second year production

Monitoring Data --1st year fields with no 2nd year adjacent

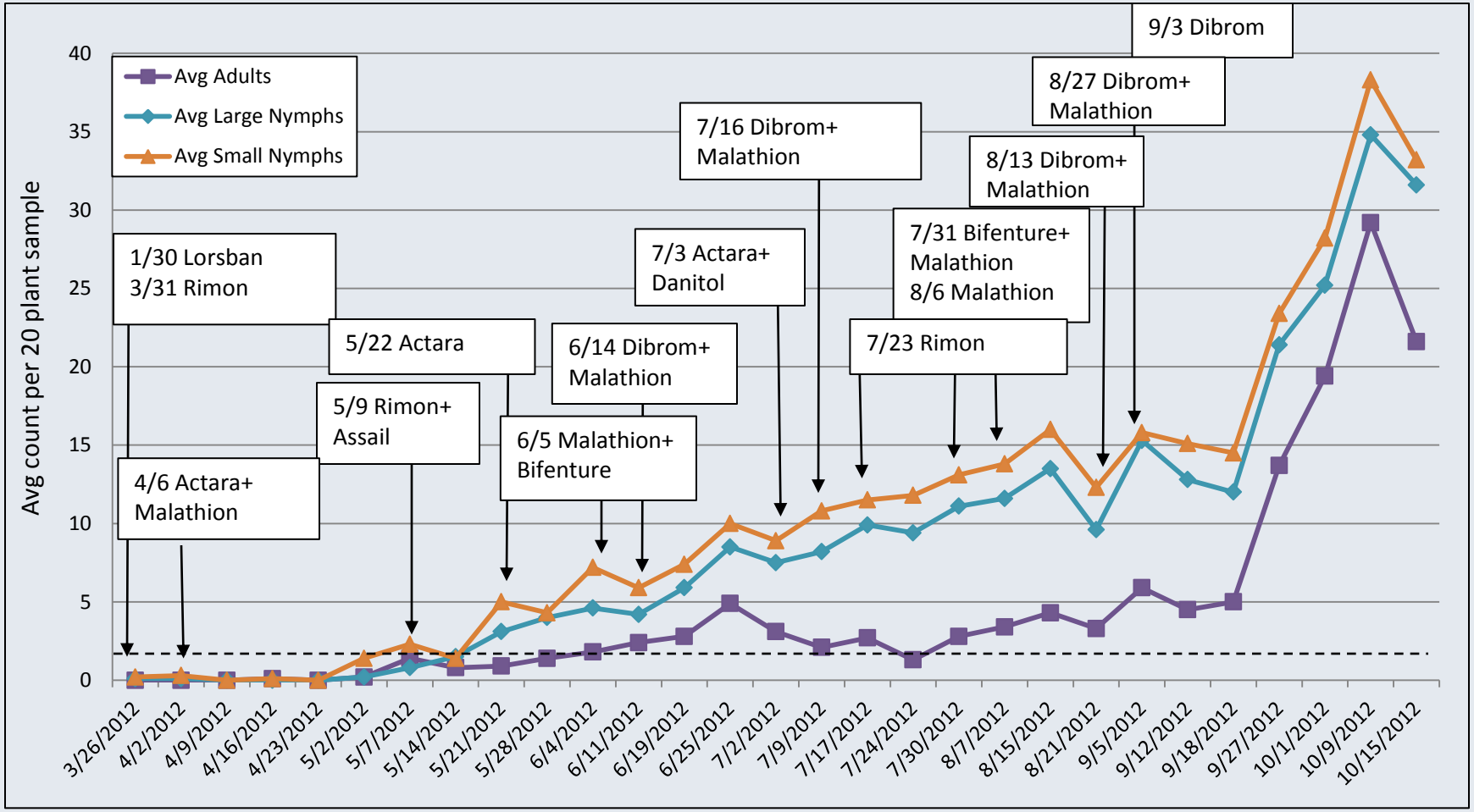


Site 27



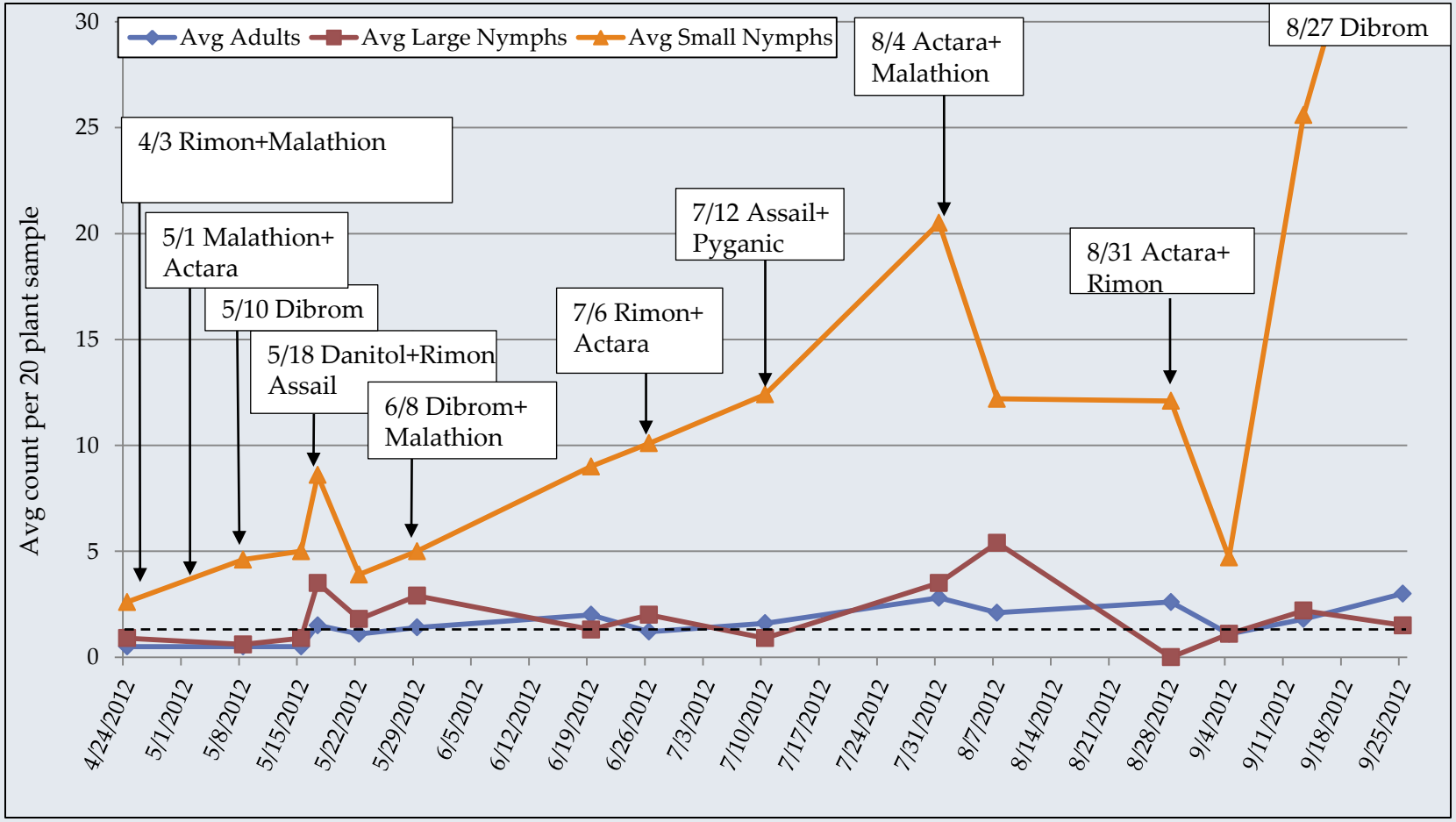
Site 4

1st year field with 2nd year adjacency with no vacuuming



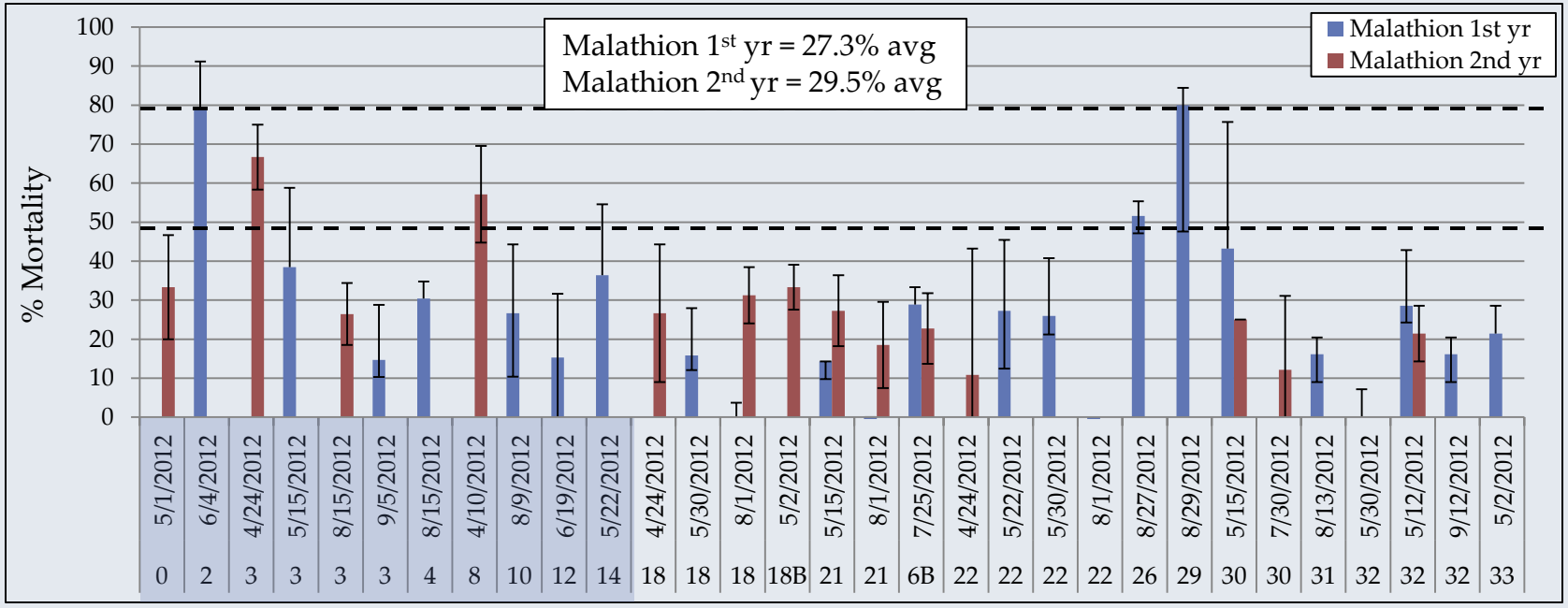
Site 3

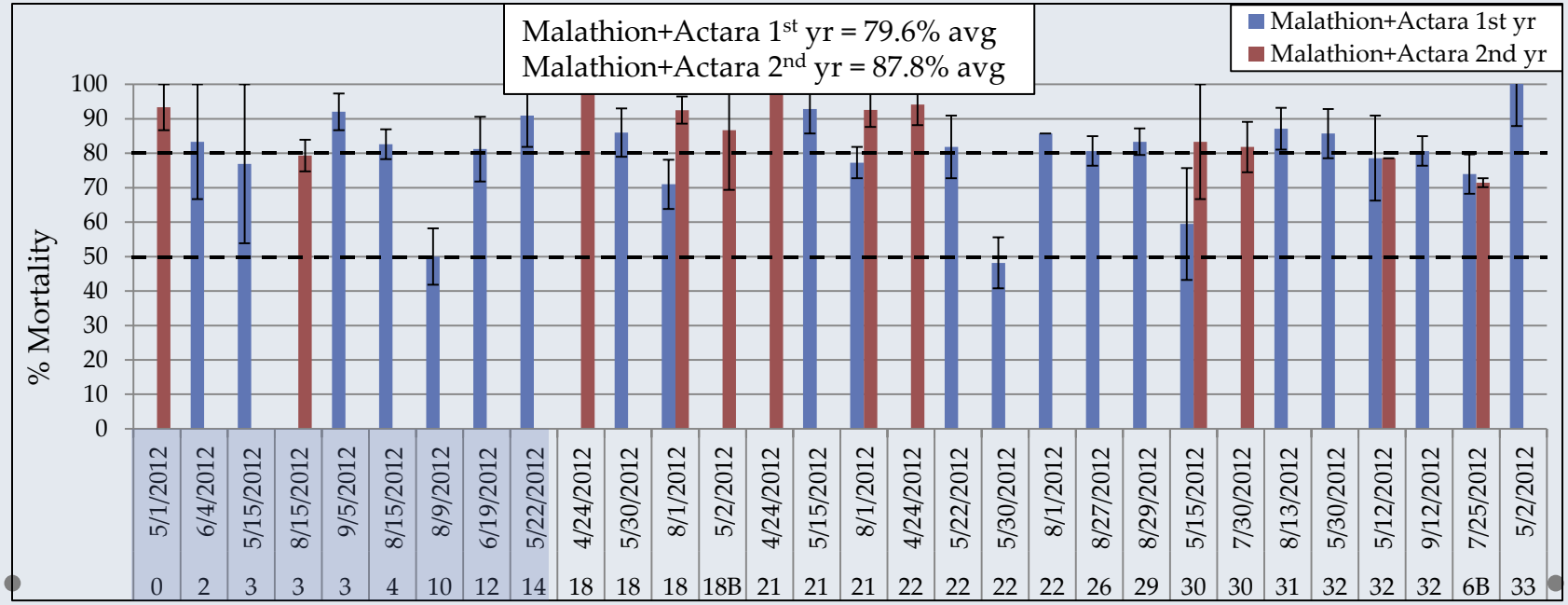
Field with 2nd year berries adjacent – with vacuum use



Site 22

Resistance results





Lygus Program Findings

- Material efficacy was highly variable by location, likely due to history of use
- Tank mixing improved materials but does it reduce overall pesticide use?
- Some participating fields that vacuumed had fewer problems with management of large nymphs and adults in-field
- We do not currently have a cohesive IPM strategy for Lygus bug
- Changes in labor and production practices may shape area-wide Integrated Pest Management programs for Lygus and other pests

Acknowledgments

- Participating growers and grower cooperators
- Surendra Dara, UCCE
- Mark Bolda, UCCE
- Nichino America Inc.
- Dow

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