

New Perspectives on Management of Lygus in Strawberry

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February 12, 2025

Format of Today's Talk

- Biology of lygus
- Damage of lygus to the strawberry
- Comparison of several rotations and their effect on lygus and fruit
- Closing comments

Introduction



Incomplete metamorphosis

Lygus egg; inserted into tissue



Life cycle statistics for lygus

- 3-10 eggs per day, between 50-400 in a lifetime.
- Average lifespan; 10-20 days from egg to adult, adults live from 10 to 50 days, depending on temperature.



Photo UC IPM

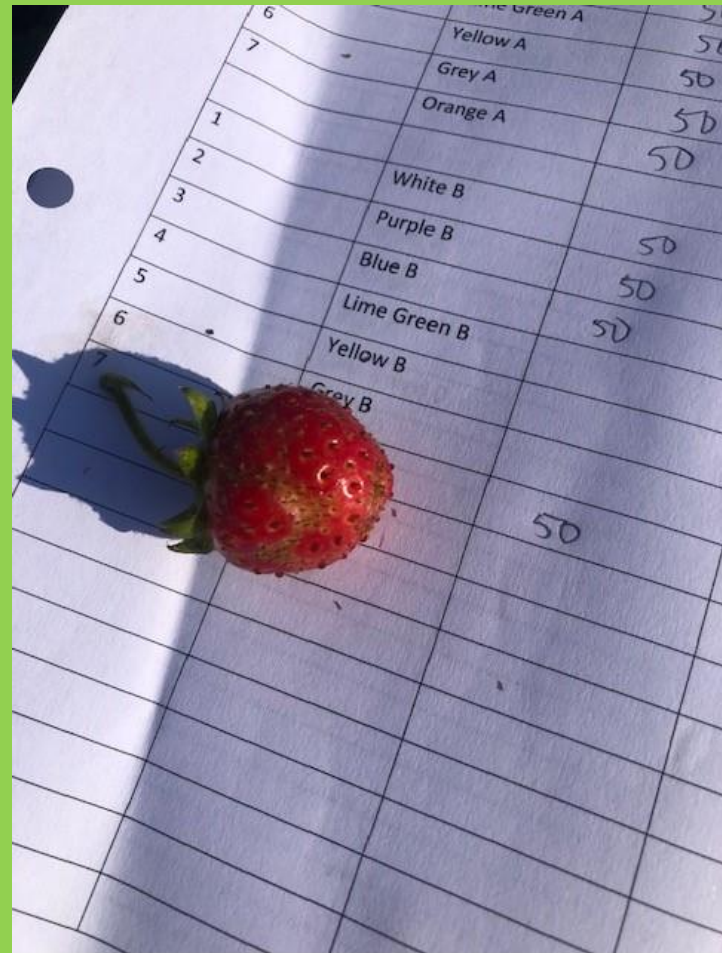
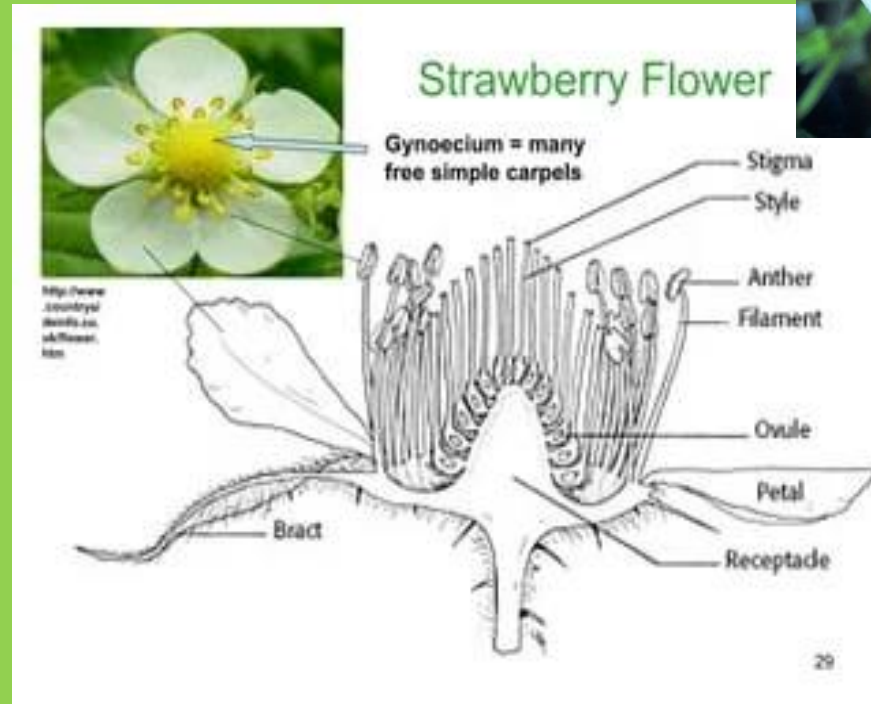


Photo courtesy CalPoly Strawberry Center

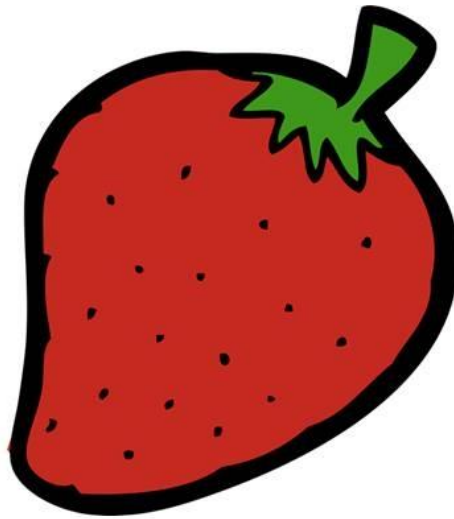
How does lygus cause this damage?



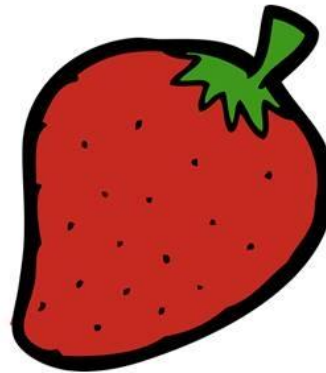
Interesting: Near total elimination of lygus results in larger fruit.



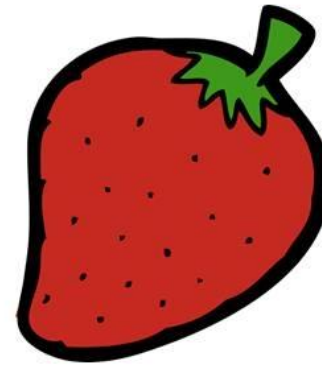
Fruit Size Comparison



Very few lygus
Avg fruit size 22.5 g



Many lygus – grower check
Avg fruit size 16.2 g



Many lygus – untreated check
Avg fruit size 15.8 g

Interesting: Near total elimination of lygus results in larger fruit.



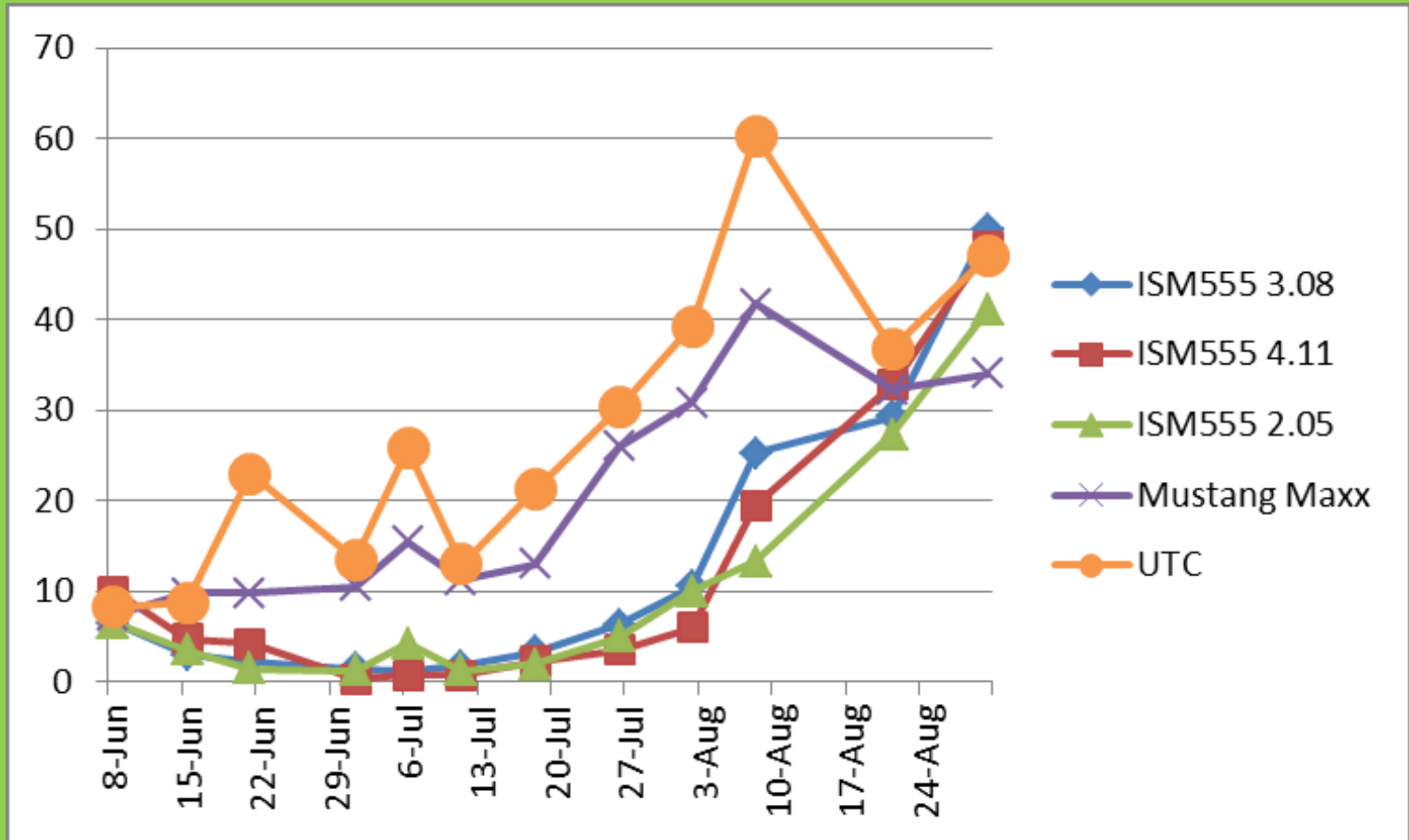
2024 lygus work

William Allen and Malcolm Douglas, UC Berkeley 1974: “In time we hope to have data that will show how much catfacing can be expected from various population levels of lygus.”

Current study, will test season long effects of highly effective treatments, grower standards and an untreated control.

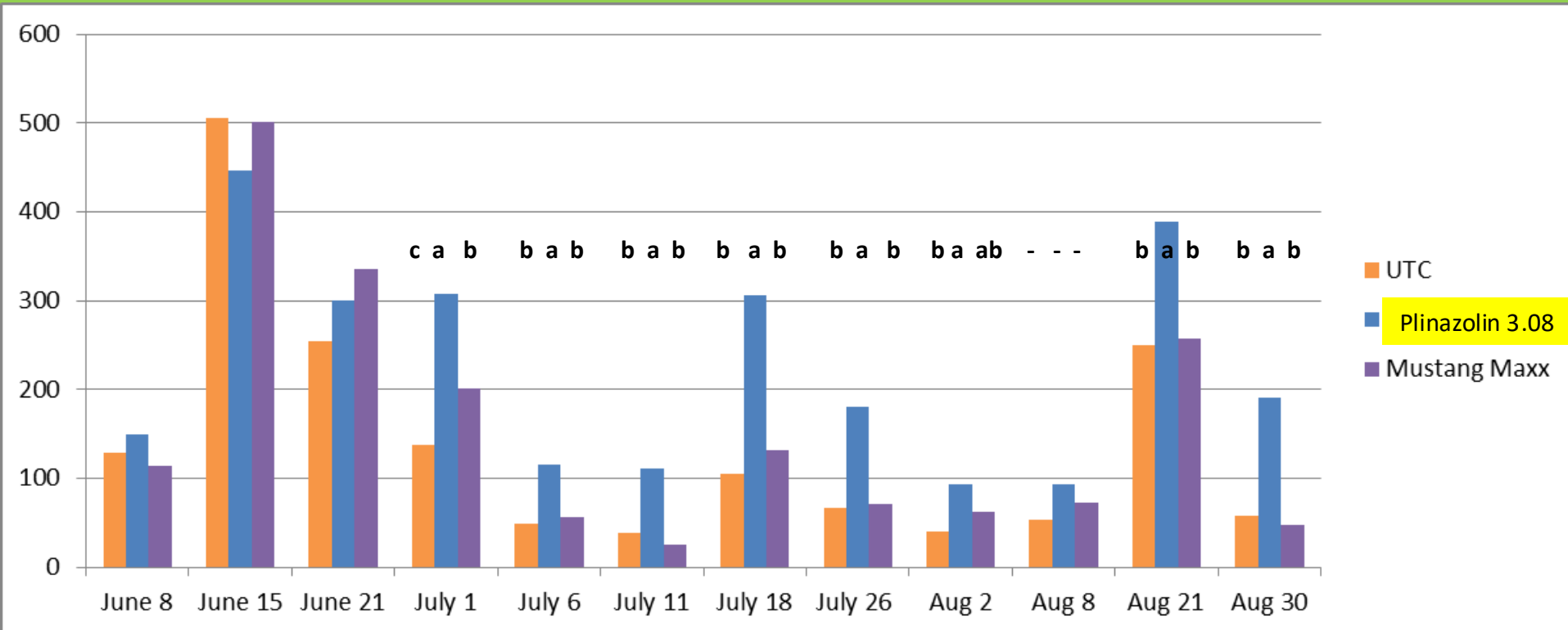
Lygus nymphs and adults

2022: Second Year Strawberry



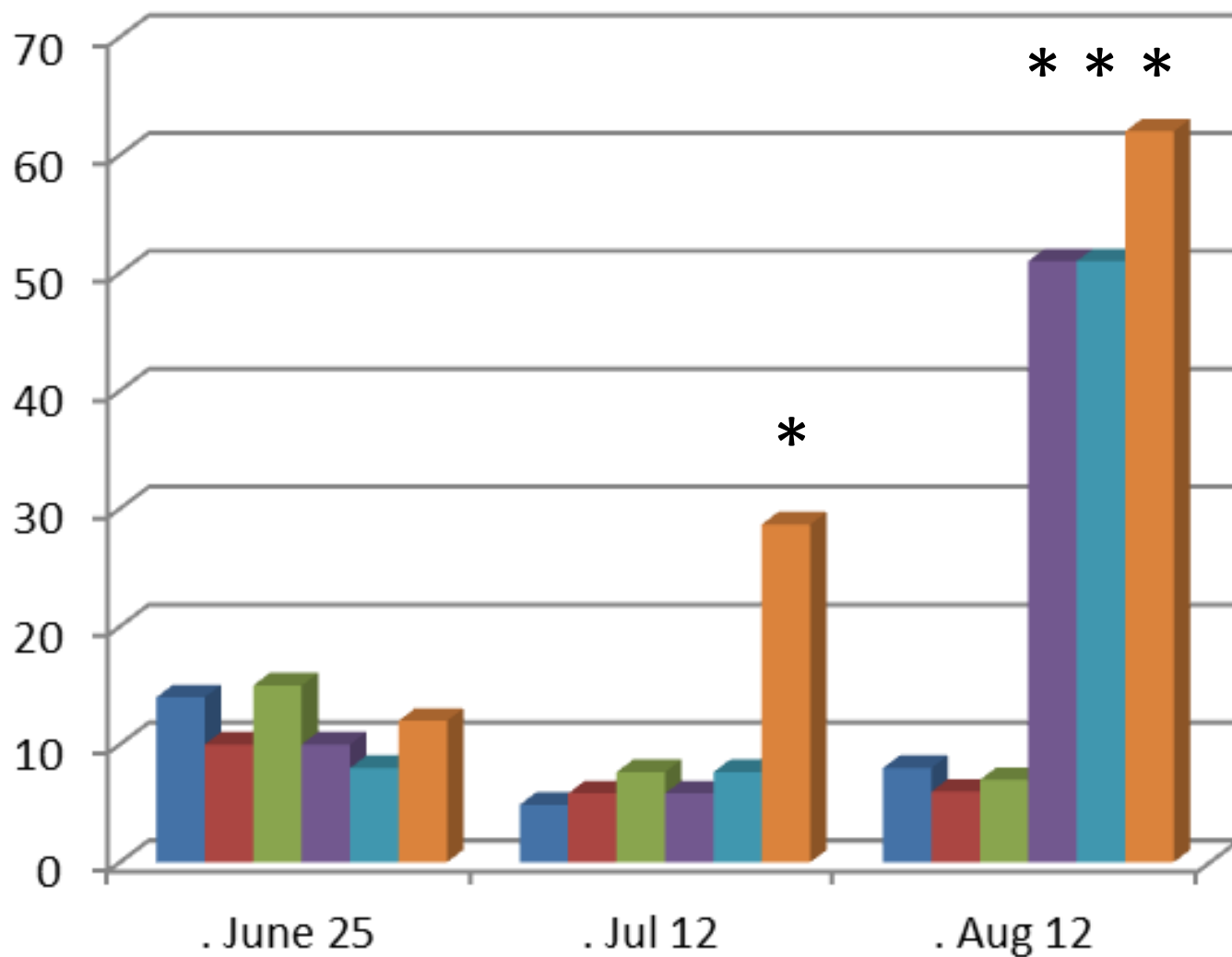
2022: Yields respond to very low lygus numbers

8# boxes per Acre



	Totals
UTC	1685 box/A
plinazolin 3.08 fl oz/A	2679 box/A
Mustang Maxx	1874 box/A

Fruit Twisting 2021



- ISM555 3.08 oz
- ISM555 4.11 oz
- ISM555 2.05 oz
- Mustang Maxx
- Cormoran
- UTC

2024 Lygus Trial

Test Plot – cv 9271



2024 Lygus Trial

All materials applied with 6 fl oz WeatherMax

All rates are per acre – applied in 150 gallons/ Acre water carrier

Rotation	App #1	App #2	App #3	App #4	App #5	App #6	App #7	App #8
	May 14	June 5	June 19	July 3	July 17	July 31	Aug 14	Aug 28
UTC	-	-	-	-	-	-	-	-
Standard rotation	Beleaf @ 2.8 oz	Rimon @ 14 fl oz	Sivanto @ 14 fl oz	Malathion @ 2 pt	Rimon @ 14 fl oz	Beleaf @ 2.8 oz	Danitol + Assail (10.7 fl oz + 3 oz)	Danitol + Assail (10.7 fl oz + 3 oz)
Sefina rotation	Beleaf @ 2.8 oz	Rimon @ 14 fl oz	Sefina @ 14 fl oz	Malathion @ 2 pt	Sefina @ 14 fl oz	Beleaf @ 2.8 oz	Danitol + Assail (10.7 fl oz + 3 oz)	Danitol + Assail (10.7 fl oz + 3 oz)
Plinazolin rotation	Beleaf @ 2.8 oz	Rimon @ 14 fl oz	Plinazolin @ 4.1 fl oz	Malathion @ 2 pt	Plinazolin @ 4.1 fl oz	Plinazolin @ 4.1 fl oz	Danitol + Assail (10.7 fl oz + 3 oz)	Danitol + Assail (10.7 fl oz + 3 oz)

Treatment replicates 6 beds x 35 ft long

Tee Jet 80015 VK nozzles 125 psi



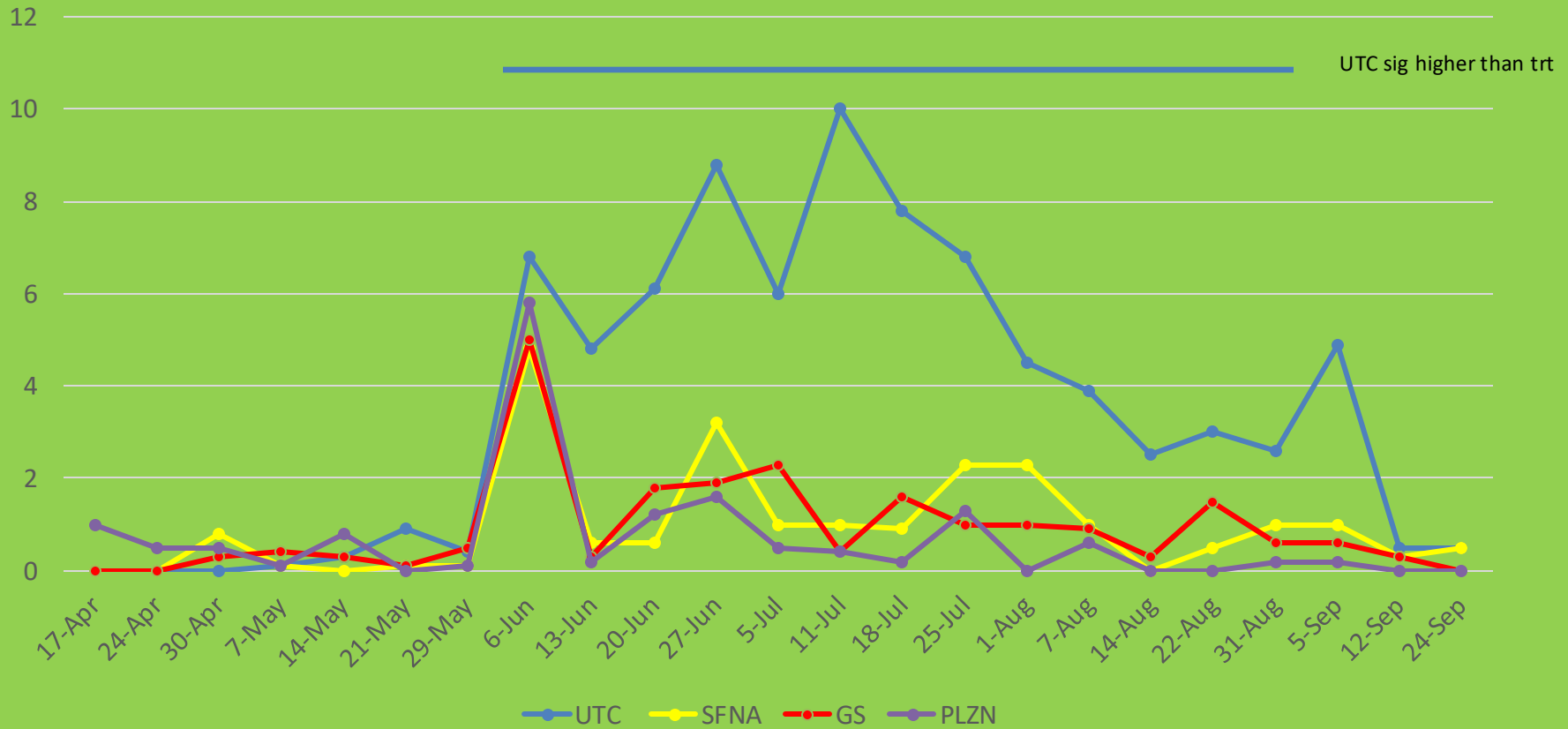
Evaluations

- Twice weekly fruit harvest, sorted, counted and weighed as marketable, cull and “cat-faced”.
- Once weekly evaluation for arthropods; lygus nymphs, lygus adults, big-eyed bugs, pirate bugs, spiders, damsel bugs.



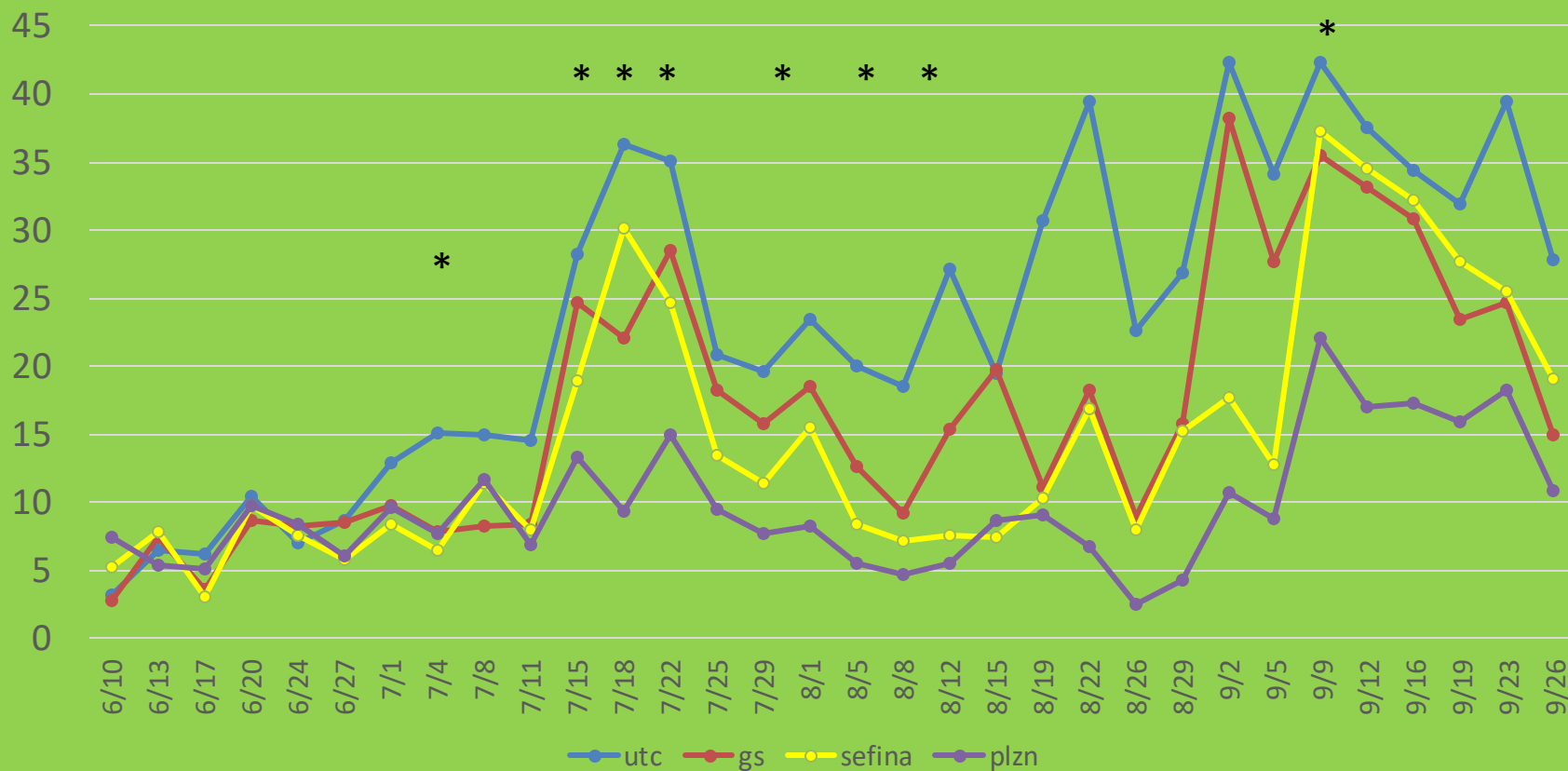
Lygus nymph populations over the season

Lygus nymphs counted per 25 plants



Percent “cat-facing”

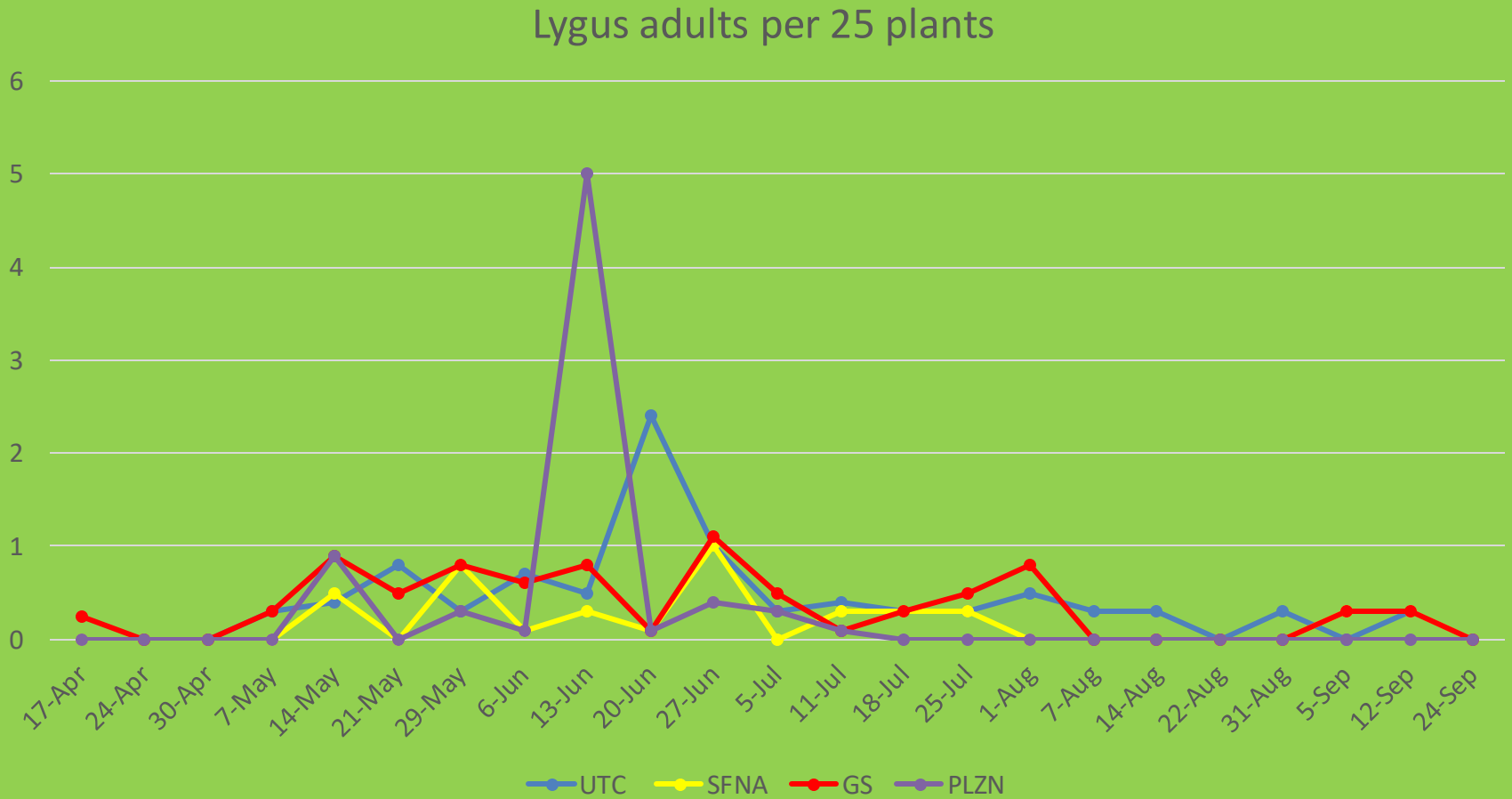
Percent “cat faced” fruit as portion of marketable



Yields of “Cat-faced” Fruit in 8 lb crates per acre

Treatment	Apr – June 30	July 1 – Sept 18	Season total
UTC	617	631 a	1248
Grower standard	603	352 b	958
Sefina rotation	686	330 b	1017
Plinazolin rotation	680	271 b	951

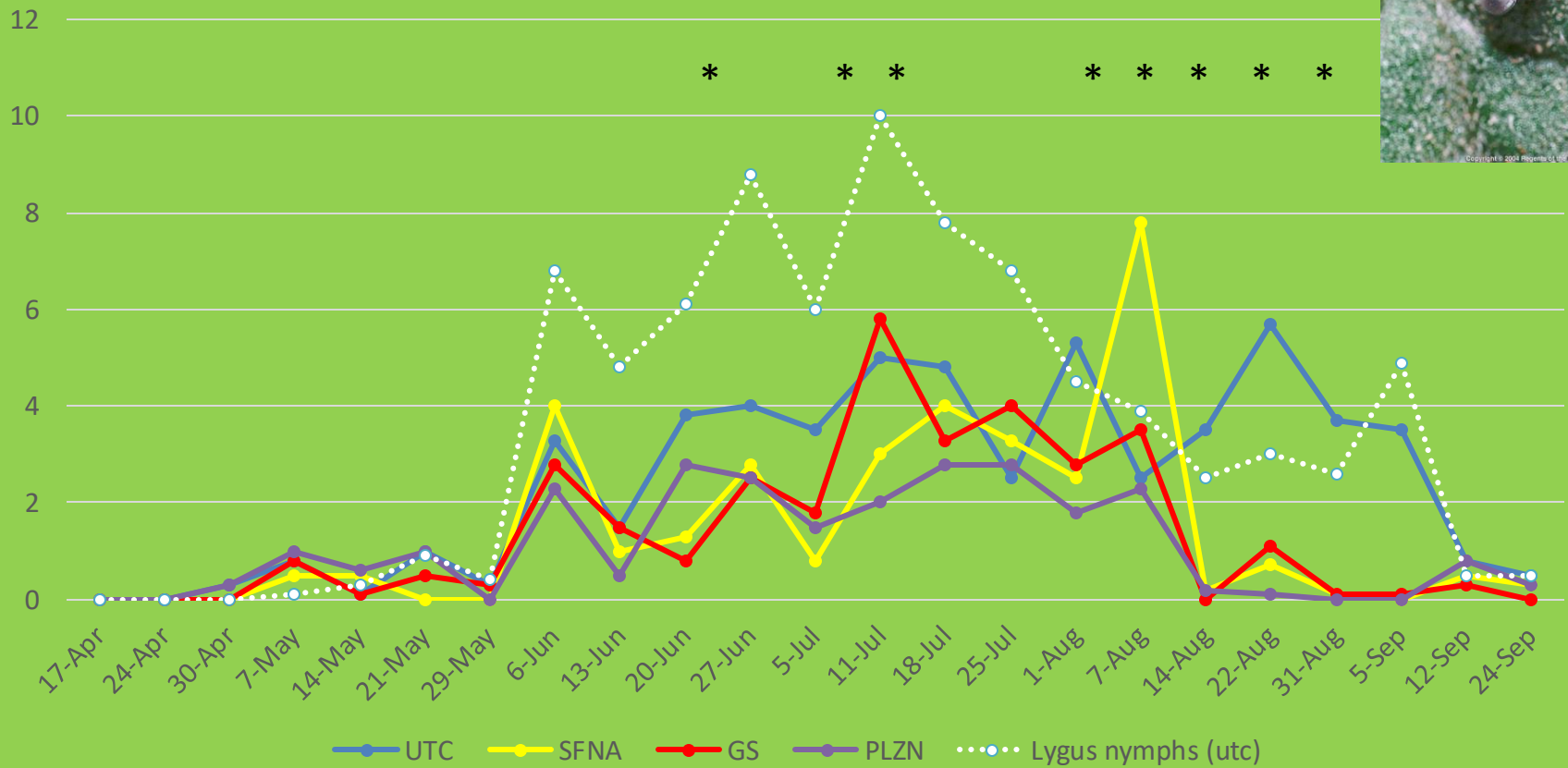
Lygus adult numbers



Pirate bugs



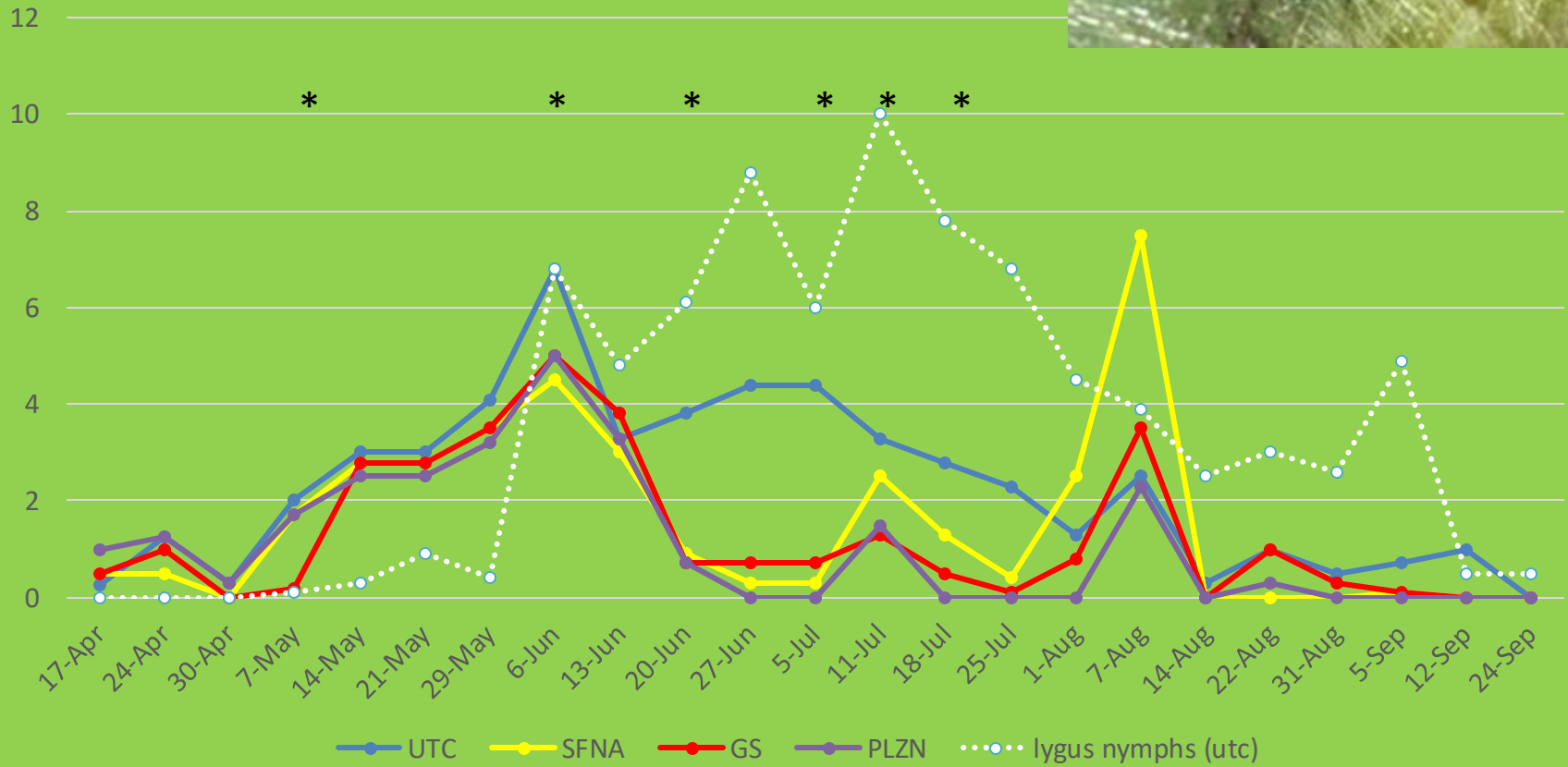
Pirate bugs per 25 plants



Spiders



Spiders per 25 plants



Marketable Yields in 8 lb crates per acre

Treatment	Apr – June 30	July 1 – Sept 18	Season total
UTC	4734	2768	7502
Grower standard	4557	2579	7137
Sefina rotation	4677	2933	7611
Plinazolin rotation	4745	3426	8171

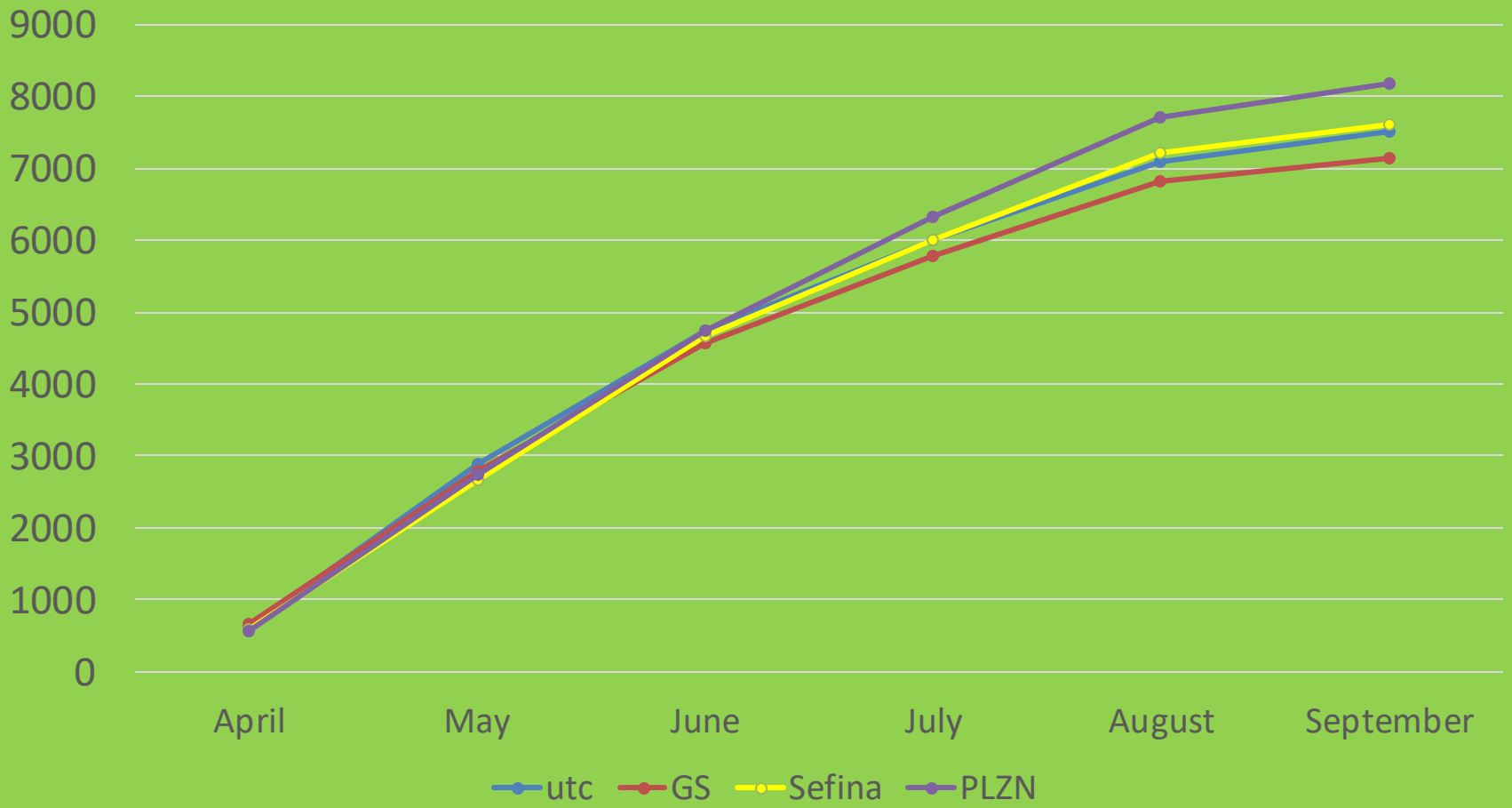
Fruit Size (in g) and Yield (in 8 lb crates per acre) by Month (April thru June

Treatment	April Size	April Yield	May Size	May Yield	June Size	June Yield
UTC	49	621	34	2269	25.4	1845
Grower standard	48	652	33	2134	25.5	1771
Sefina rotation	52	592	35	2081	26.5	2005
Plinazolin rotation	51	571	35	2174	26.1	2001

Fruit Size (in g) and Yield (in 8 lb crates per acre) by Month (July thru September)

Treatment	July size	July Yield	August size	August Yield	Sept size	Sept yield
UTC	24.7 ab	1270	21.8	1040	19.8	422
Grower standard	24.0 b	1220	21.2	1010	18.4	317
Sefina rotation	24.7 ab	1323	21.9	1199	19.1	388
Plinazolin rotation	25.4 a	1571	22.4	1350	19.7	471

Cumulative Yield, Full Season in 8 lb crates per acre



Yield of cull fruit in 8 lb crates per acre

Treatment	Apr – June 30	July 1 – Sept 18	Season total
UTC	759	1443	2202
Grower standard	677	1673	2350
Sefina rotation	706	1579	2285
Plinazolin rotation	806	1500	2321

Yield totals – all in marketable + culls + “cat-faced”

Treatment	Apr – June 30	July 1 – Sept 18	Season total
UTC	6110	4842	10953
Grower standard	5838	4605	10444
Sefina rotation	6070	4843	10913
Plinazolin rotation	6246	5198	11444

Conclusion

- There appear, based on this study, to be population levels of lygus that do not result in gains from insecticide sprays.
- Plinazolin continues to offer excellent control of lygus.
- "Cat-facing" of fruit, in low to intermediate levels of lygus, does not necessarily correlate with a lower yield of marketable fruit.