

Strawberry Pest Management

12th September 2025
University of California
Extension Meeting



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Overview

- Two spotted spider mite
- Lewis Mite
- *Lygus bug*



Current Entomology Lab Personnel



Colin Koubek
Research Associate
Master's Student
[Sept '24-June '26](#)

UV-C and Pesticide
Resistance Monitoring



Taylor Hibino
Senior Project
Master's Student
[Jan '25-Dec '26](#)

Predatory Mite Field
Efficacy and Bottle
Quality



Karina Xi-Mei Li
Student Intern



Sienna Shuler
Student Intern



Sophie Rodriguez
Student Intern



Alex Moreno
Student Intern



Derek Griffith
Student Intern



Emily Henry
Research Aid



Cole Pritchett
Student Intern



Victoria Paolini
Student Intern



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#	FY	Project Category	Project Title	Details	Funding Source	Lead(s)	Thesis/Senior Project	Type of Experiment	Target Arthropods	Start Date	Expected Completion Date	Actual end date	Status
1	2025	Chemical Management	Spray Trial		None	Colin	None	Lab	Lewis Mite	2/13/2025	2/15/2025		Complete
2	2025	Chemical Management	Organic Spray Trial		None	Colin/Edgard	Senior Project	Field	Lewis Mite	3/21/2025	4/4/2025		Complete
3	2025	Chemical Management	Organic Spray Trial		CSC	Colin	None	Lab	Lewis Mite	3/22/2025	4/4/2025		Complete
4	2025	Chemical Management	Spray Trial		None	Colin	None	Field	Aphids	2/20/2025	4/4/2025		Complete
5	2025	Chemical Management	Spray Trial		Syngenta	Mohammad	None	Field	TSSM	3/25/2025	4/15/2025		Complete
7	2025	Chemical Management	TSSM Organic Trial		ProFarm	Mohammad	None	Field	TSSM	4/4/2025	5/4/2025		Complete
10	2025	Chemical Management	Sefina BASF Thrips		BASF	Mohammad	None	Field	Thrips	4/18/2025	5/23/2025		Complete
11	2025	Chemical Management	Sefina and Avaunt Effect on Lygus Rotation		BASF	Mohammad	None	Field	Lygus	6/1/2025			Complete
12	2025	Chemical Management	Sefina Lygus lab bioassay		CSC	Colin	None	Lab	Lygus	2/15/2025	3/15/2025		Complete
13	2025	Chemical Management	Avaunt Lygus Bioassay		FMC	Colin	None	lab	Lygus	6/6/2025	6/30/2025		Complete
16	2025	Chemical Management	Spray Trial Small Plot June		FMC	Mohammad	None	Field	Lygus	6/6/2025	7/25/2025		Complete
17	2025	Chemical Management	Avaunt GPA trial		FMC	Mohammad	None	Field	Lygus	7/1/2025	8/15/2025		Complete
19	2025	Chemical Management	Resistance Monitoring		CSC	Colin	Thesis	Field	Mites	3/25/2025	6/23/2025		Complete
20	2025	Improving Quality	Preventative vs Curative treatment of Lewis Mite		Biobee	Taylor	Thesis	Field	Lewis Mite, Californicus	12/19/2024	3/21/2025		Complete
21	2025	Improving Quality	Preventative vs Curative treatment of TSSM		CSC/Biobee	Taylor	Thesis	Field	TSSM, Persimilis	12/19/2024	5/5/2025		Complete
22	2025	Improving Quality	Small Plot Biopers, Persi+, Californicus		Biobee	Taylor	Thesis	Field	TSSM, Persimilis, Californicus	3/24/2025	5/13/2025		Complete
26	2025	Improving Quality	Fungicide and Adjuvant Effects on Persimilis		CSC	Colin	Thesis	Lab	Persimilis	11/1/2025	3/15/2025		Complete
27	2025	Cultivar Selection	Mite		CSC	Mohammad	None	Field	TSSM	2/14/2025	6/1/2025		Complete
29	2025	Cultivar Selection	SWD		CSC	Sophie	Senior Project	Field	SWD	7/7/2025	8/1/2025		Complete
31	2025	Independent/External	Podisus Maculaventr		Bioline	Taylor	Thesis	Field	Lygus	5/15/2025	8/8/2025		Complete
32	2025	Independent/External	NLS Biostimulant Trial		NLS	Mohammad	None	Field	TSSM	12/20/2024	6/10/2025		Complete
34	2025	UVC	TRIC Bug vac		ARI	Colin	Thesis	Field	Lygus	5/22/2025	7/31/2025		Complete
6	2025	Chemical Management	Spray Trial		Syngenta	Mohammad	None	Field	Lygus	8/29/2025	9/18/2025		In Progress
9	2025	Chemical Management	Sefina effect on SWD		BASF	Mohammad	None	Field	SWD	8/7/2025	9/18/2025		In Progress
14	2025	Chemical Management	Avaunt Evo, Exirel effect on SWD	20 oz Exirel	FMC	Mohammad	None	Field	SWD	8/7/2025	9/18/2025		In Progress
18	2025	Chemical Management	Resistance Monitoring		CSC	Colin	Thesis	Field	Lygus	4/25/2025	9/25/2025		In Progress
23	2025	Improving Quality	Predatory Mite Bottle Quality		CSC	Taylor	Thesis	Lab	Persimilis	1/1/2025	11/1/2025		In Progress
24	2025	Improving Quality	Storage Temperature Changes		CSC	Taylor	Thesis	Lab	Persimilis	8/1/2025	11/1/2025		In Progress
25	2025	Improving Quality	Mortality due to Human Error		CSC	Taylor	Thesis	Lab	Persimilis	2/13/2025	11/1/2025		In Progress
35	2025	Independent/External	Podisus Maculaventr		Bioline	Taylor	Thesis	Lab	Lygus	8/1/2025	11/1/2025		In Progress
37	2025	Chemical Management	Plinazolin on SWD		Syngenta	Mohammad	None	Field	SWD	8/7/2025	9/18/2025		In Progress
38	2025	Chemical Management	Lygus Organic Trial		None	Mohammad	None	Field	Lygus	9/2/2025	9/9/2025		In Progress
8	2025	Chemical Management	Lygus Profarm Trial		ProFarm	Mohammad	None	Field	Lygus	6/1/2025			Nerfed
28	2025	Cultivar Selection	Lygus		CSC	Mohammad	None	Field	Lygus	6/15/2025	8/22/2025		Not Started
15	2025	Chemical Management	Avaunt Evo, Exirel effect on SWD	20 oz Exirel	FMC	Mohammad	None	Lab	SWD	10/1/2025	12/1/2025		Not Started
30	2025	Bt Strawberry Lygus	Diet Incorporation/Overlay Assay of Bt Proteins		CSC	Mohammad	None	Lab	Lygus	5/1/2025	9/1/2025		Not Started
33	2025	UVC	UVC Lygus Sublethal		ARI	Colin	Thesis	lab	Lygus	9/1/2025	10/15/2025		Not Started
36	2025	Chemical Management	Spray Trial Small Plot high pressure		FMC	Mohammad	None	Field	Lygus	9/9/2025	9/24/2025		Not Started



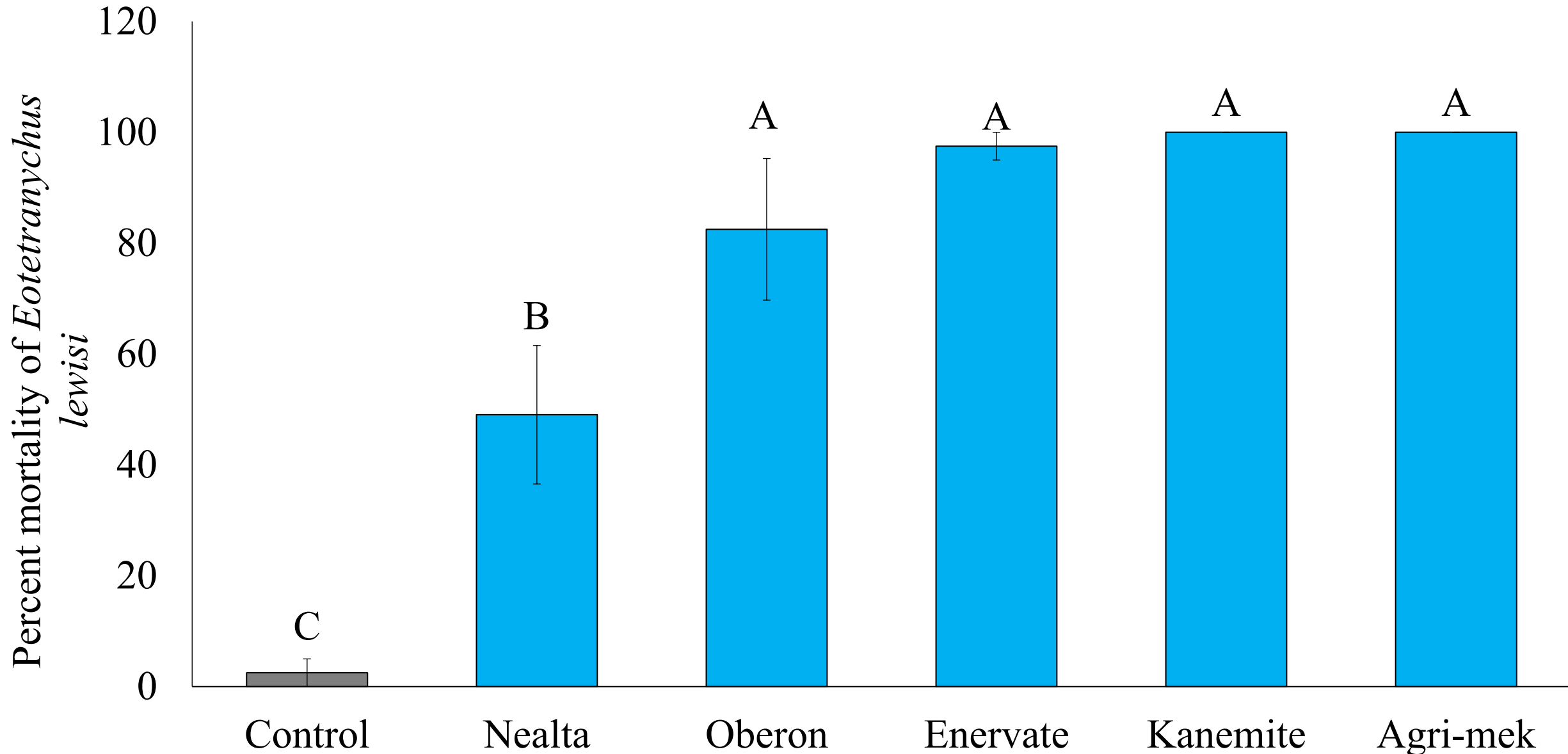
Miticide Trials



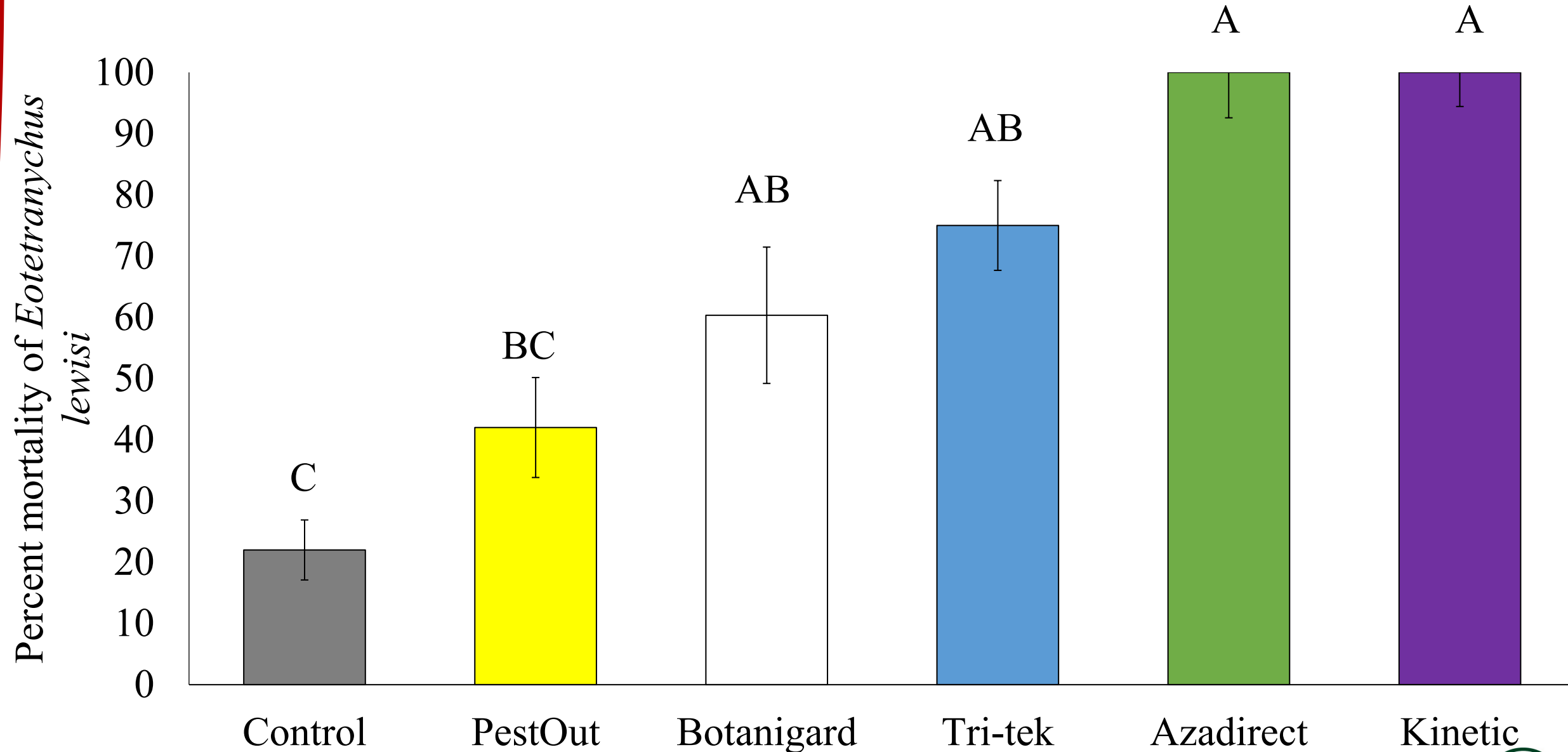
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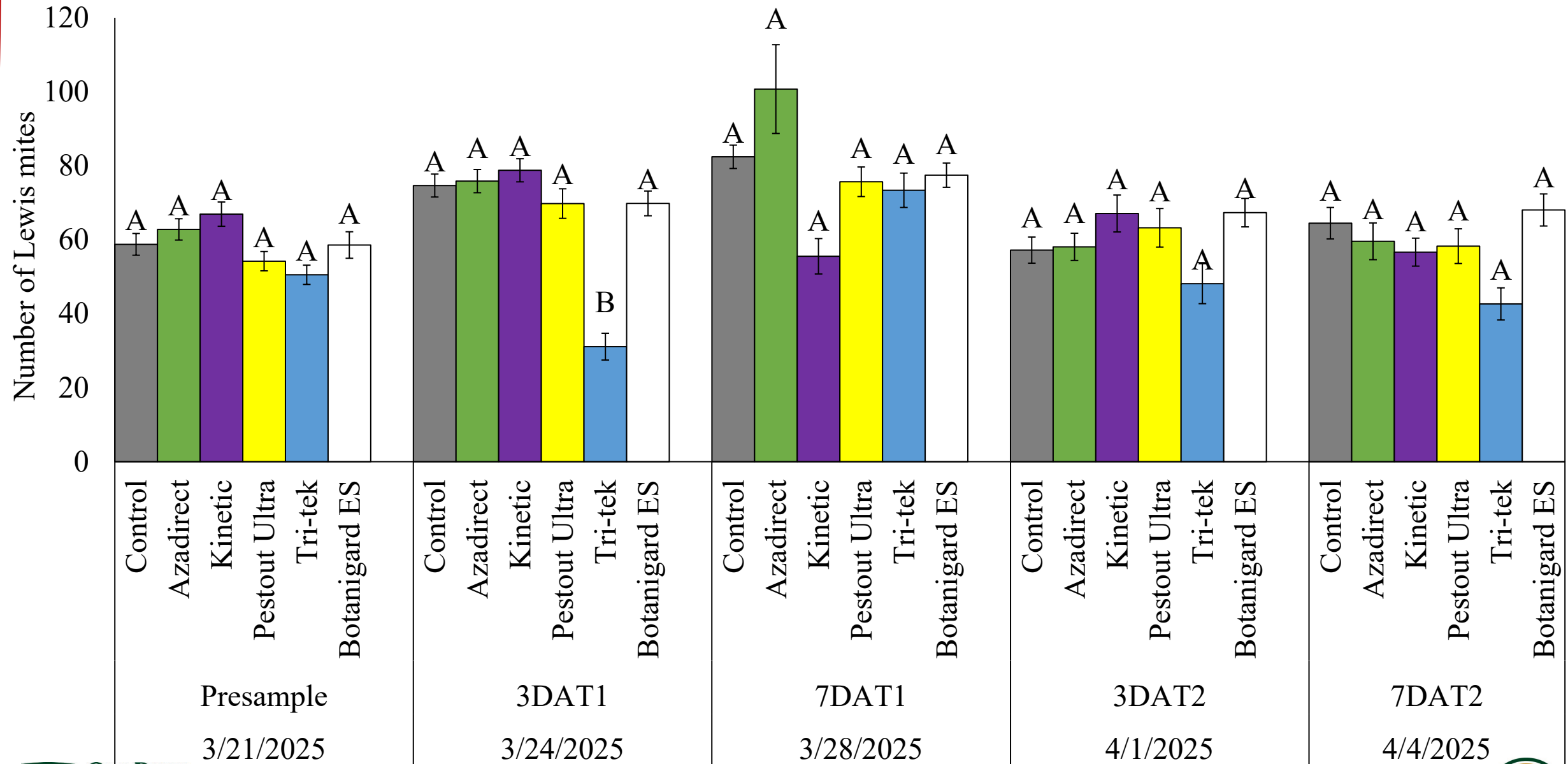
48 hours after conventional lab spray mortality of Lewis mite



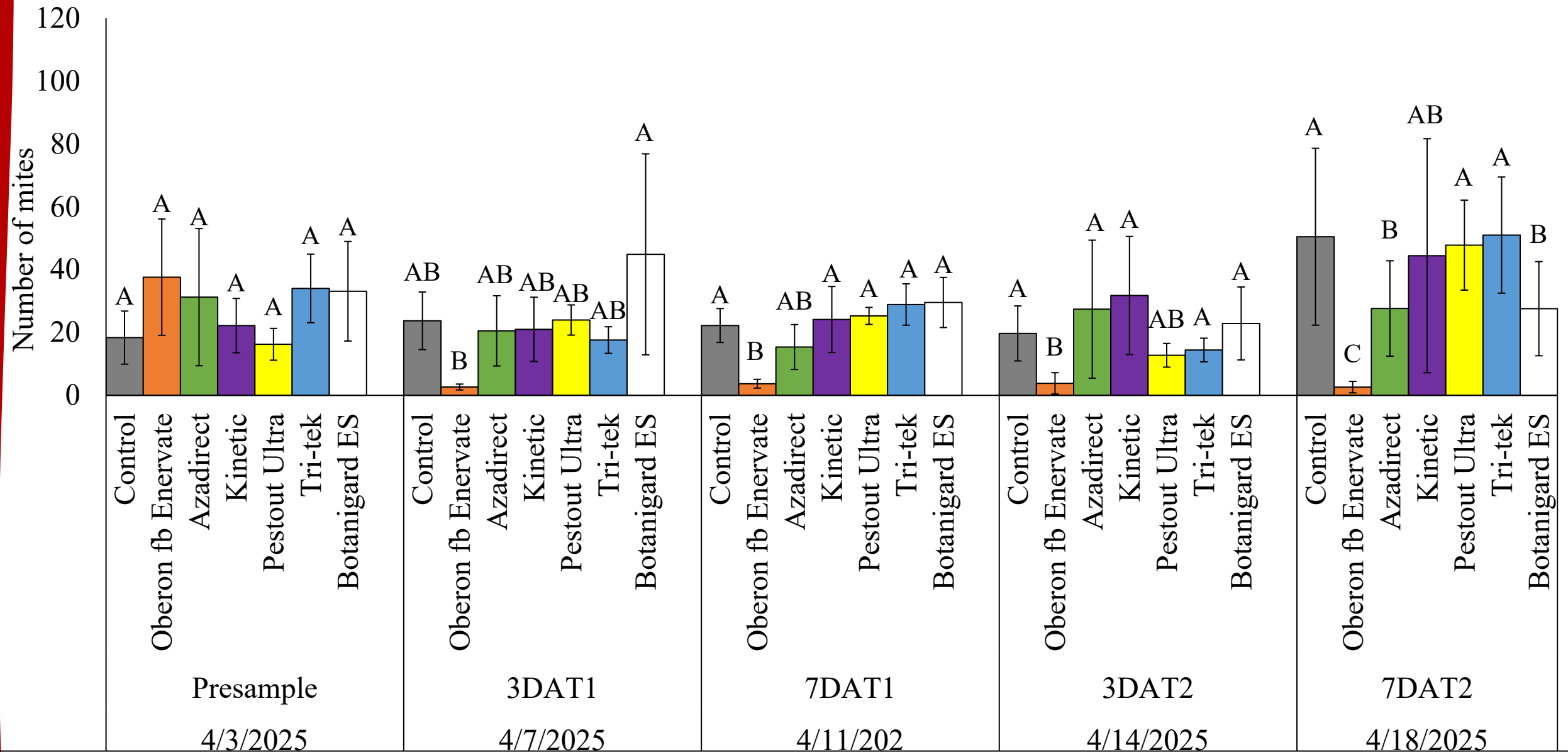
48 hours after organic lab spray mortality of Lewis mite



Mean number of Lewis mite (*Eotetranychus lewisi*) adults and nymphs



Mean number of twospotted spider mite (*Tetranychus urticae*) adults and nymphs



Resistance Monitoring



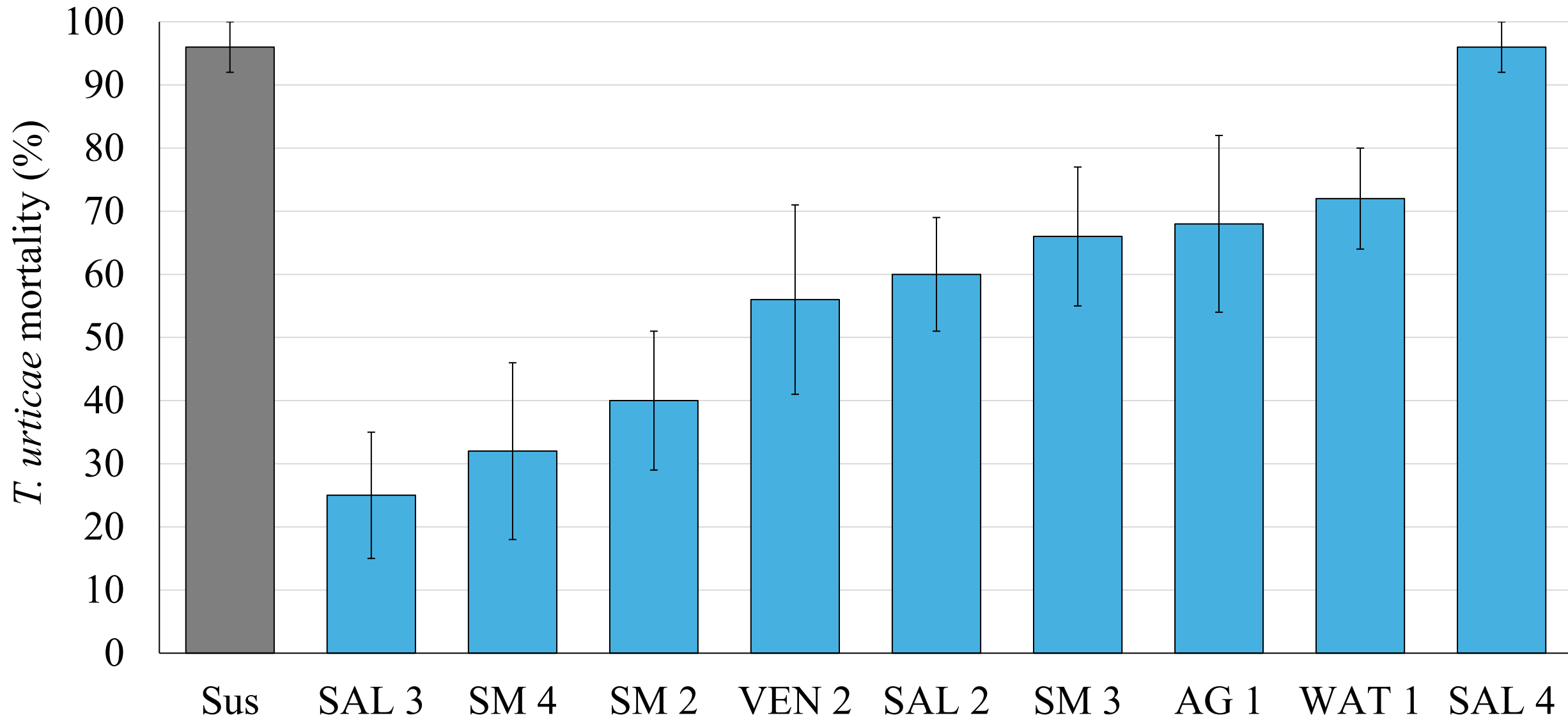
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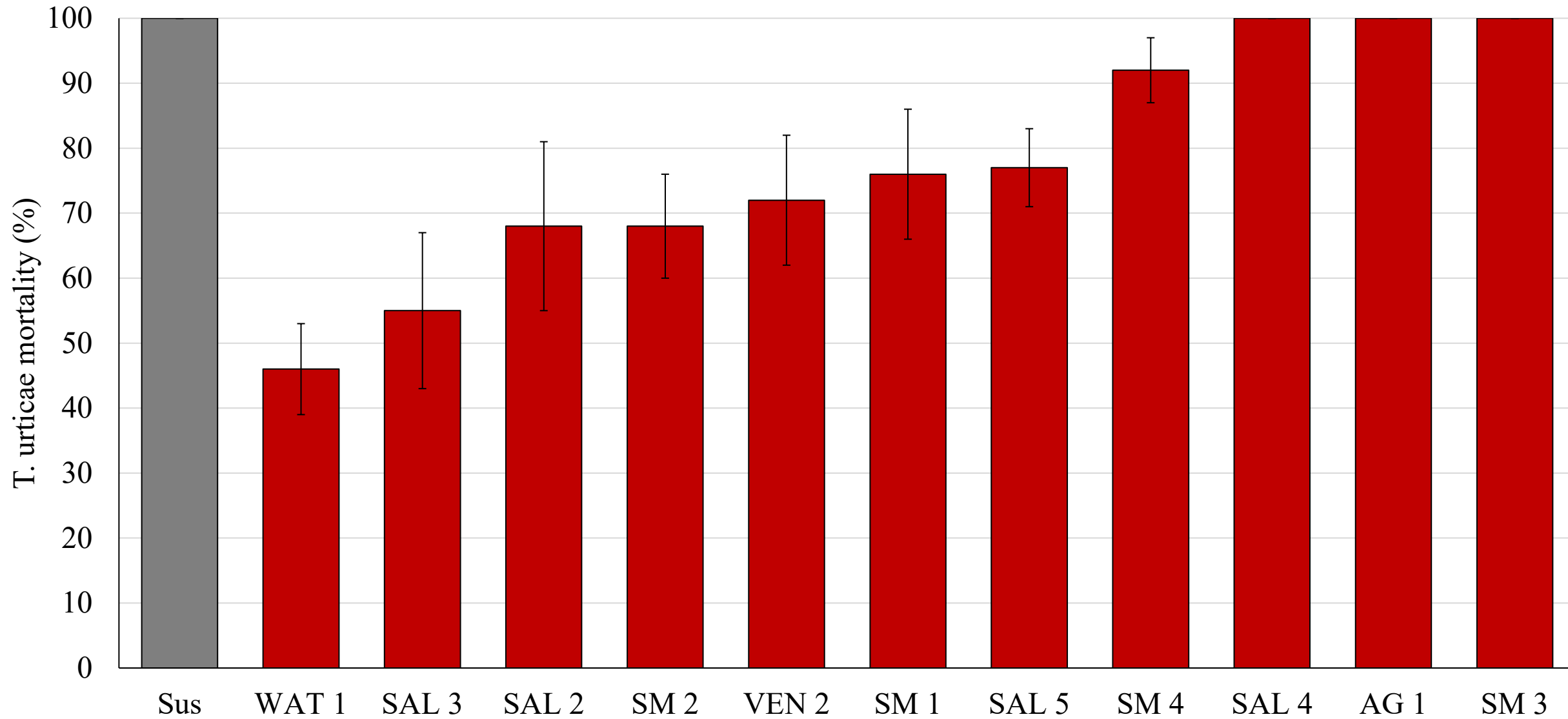
Product	Active Ingredient	Rate per acre
Agri-mek SC	abamectin	3.5 fl oz
Enervate 4 SC	bifenazate	16 fl oz
Fujimite 20 SC	Fenpyroximate	7.45 fl oz
Kanemite 15 SC	Acequinocyl	32 fl oz
Nealta	Cyflumetofen	13.7 fl oz



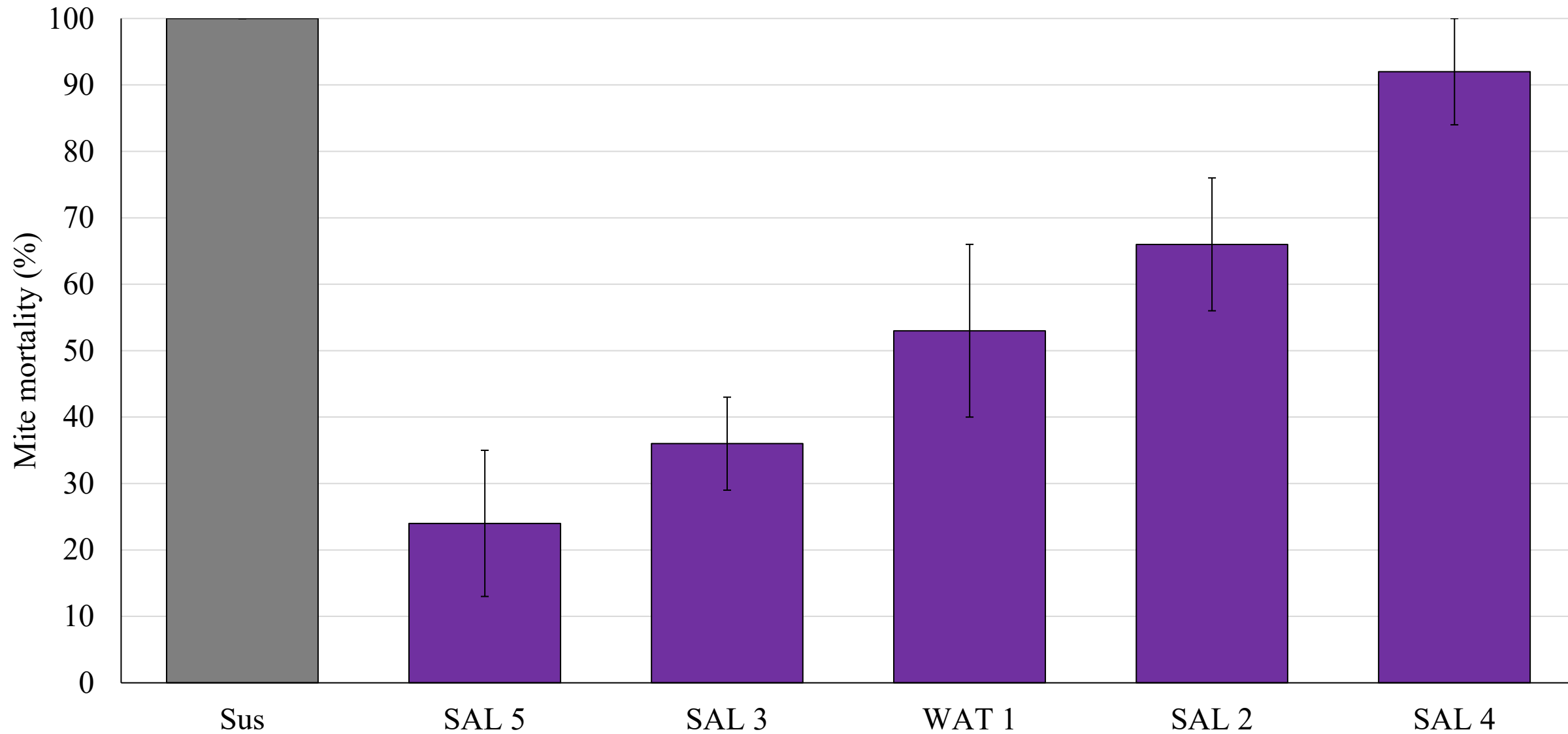
Agri-Mek SC at 3.5 fl oz/ac



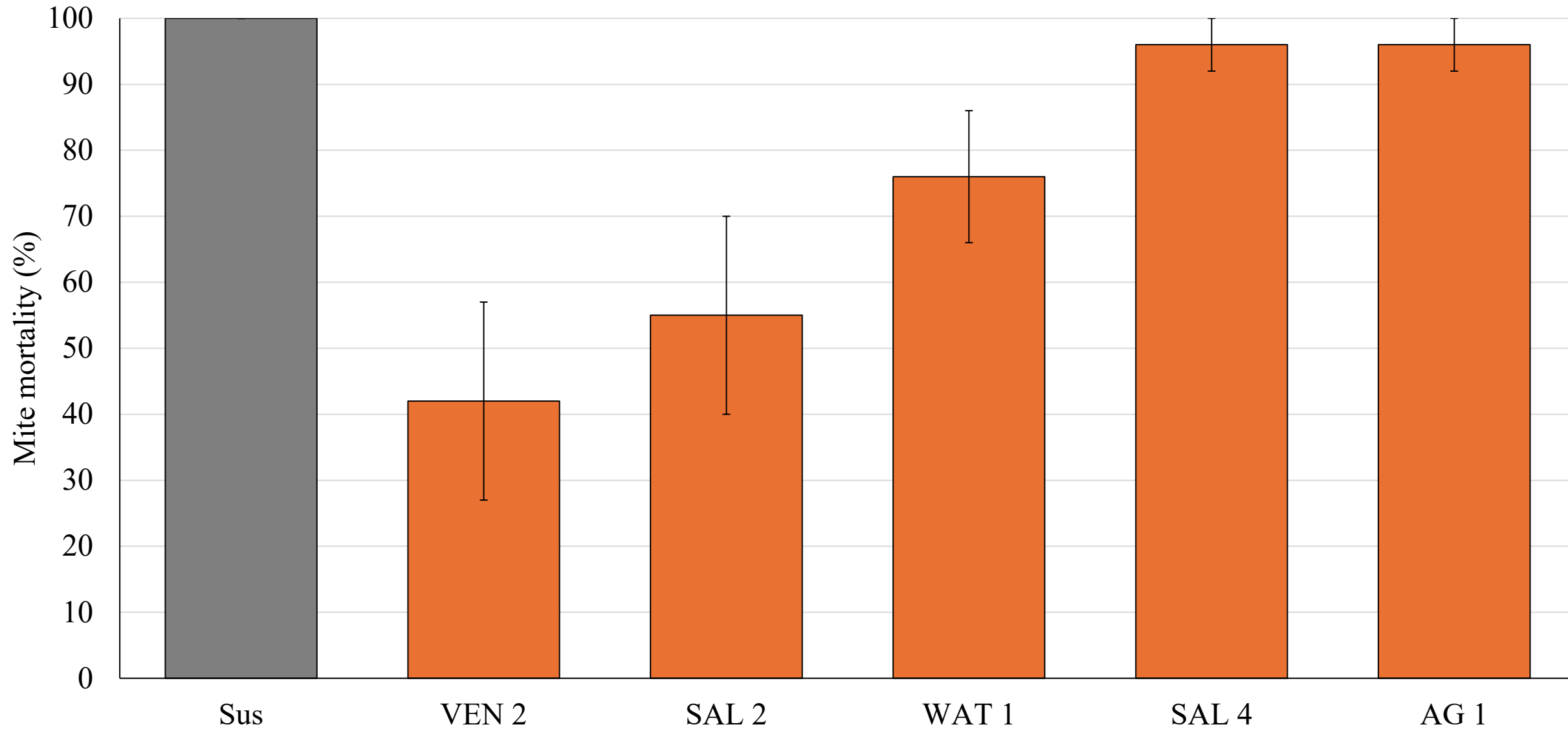
Enervate 4SC at 16 fl oz/ac



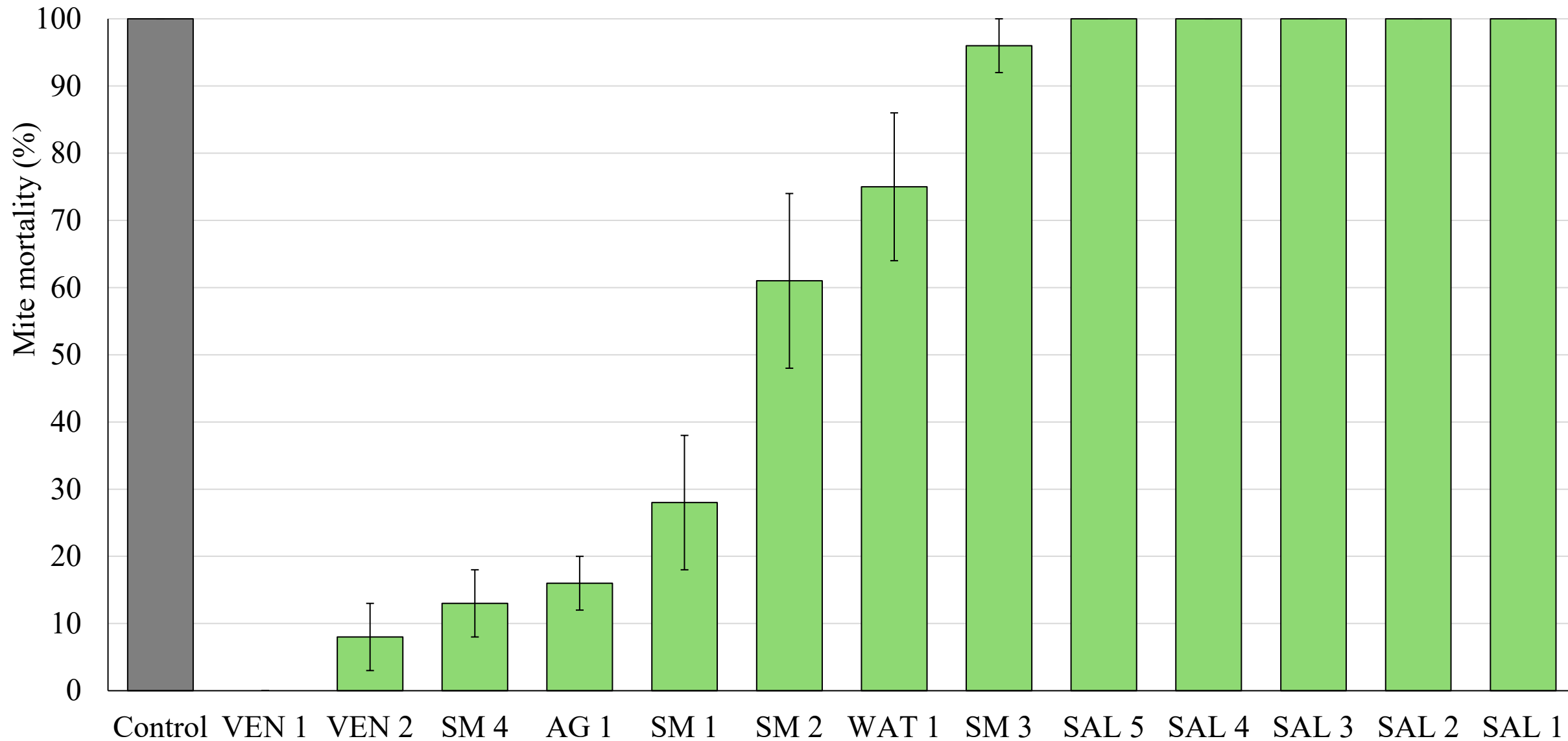
Fujimite 20 SC at 7.45 fl oz/ac



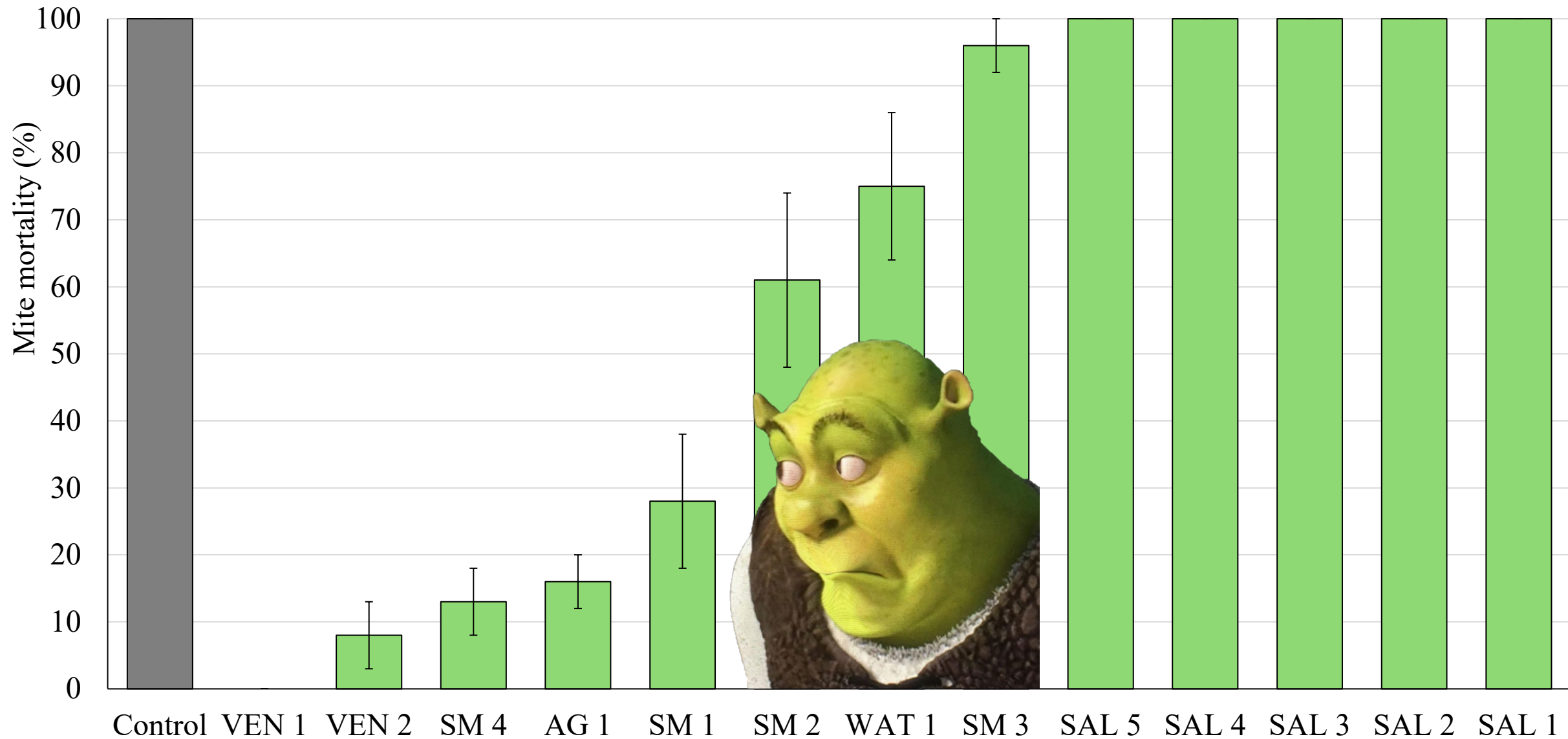
Kanemite 15 SC at 32 fl oz/ac



Nealta at 13.7 fl oz/ac



Nealta at 13.7 fl oz/ac



Lygus Spray Trial



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Lygus Rotation Trial at Freshway Farms

Treatment	App 1	App 2	App 3	App 4	App 5	App 6	App 7	App 8	App 9	App 10
Grower	Beleaf 2.8 oz	Rimon 12 fl oz	Sivanto 14 fl oz	Malathion 2-pin Rimon 12 fl oz	Sivanto 14 fl oz	Beleaf 2.8 oz	Sivanto 14 fl oz	Rimon 12 fl oz	Dannitol +Assail 10.7 fl, 3 oz	Dannitol +Assail 10.7 fl, 3 oz
Sefina Sandwich	Beleaf 2.8 oz Rimon 12 fl oz	Sefina 14 oz	Sivanto 14 fl oz	Avaunt 6 oz	Avaunt 6 oz	Beleaf 2.8 oz Rimon 12 fl oz	Avaunt 6 oz	Avaunt 6 oz	Sefina 14 oz	Dannitol +Assail 10.7 fl, 3 oz
Avaunt Sandwich	Beleaf 2.8 oz Rimon 12 fl oz	Avaunt 6 oz	Sivanto 14 fl oz	Sefina 14 oz	Avaunt 6 oz	Beleaf 2.8 oz Rimon 12 fl oz	Avaunt 6 oz	Sefina 14 oz	Avaunt 6 oz	Dannitol +Assail 10.7 fl, 3 oz

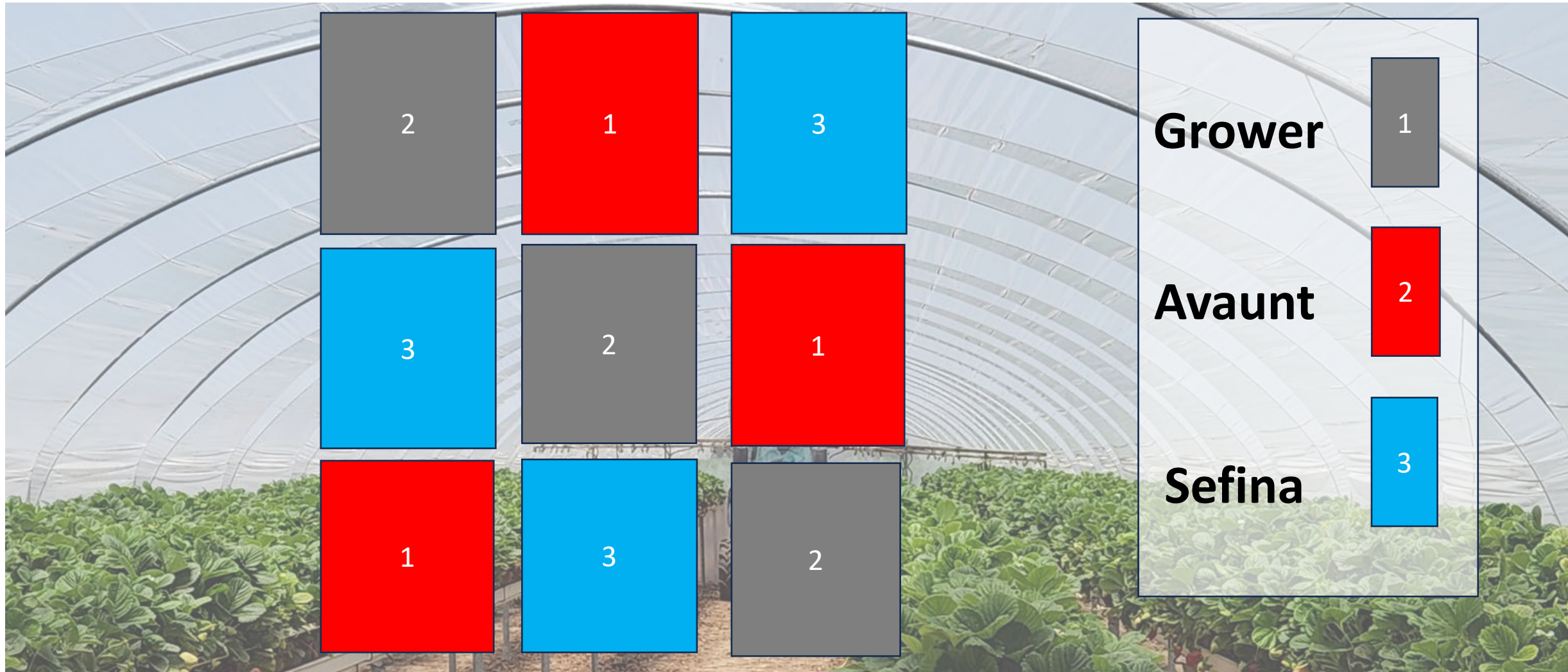


Lygus Rotation Trial at Freshway Farms

Treatment	App 1	App 2	App 3	App 4	App 5	App 6	App 7	App 8	App 9	App 10
Grower	Beleaf 2.8 oz	Rimon 12 fl oz	Sivanto 14 fl oz	Malathion 2-pin Rimon 12 fl oz	Sivanto 14 fl oz	Beleaf 2.8 oz	Sivanto 14 fl oz	Rimon 12 fl oz	Dannitol +Assail 10.7 fl, 3 oz	Dannitol +Assail 10.7 fl, 3 oz
Sefina Sandwich	Beleaf 2.8 oz Rimon 12 fl oz	Sefina 14 oz	Sivanto 14 fl oz	Avaunt 6 oz	Avaunt 6 oz	Beleaf 2.8 oz Rimon 12 fl oz	Avaunt 6 oz	Avaunt 6 oz	Sefina 14 oz	Dannitol +Assail 10.7 fl, 3 oz
Avaunt Sandwich	Beleaf 2.8 oz Rimon 12 fl oz	Avaunt 6 oz	Sivanto 14 fl oz	Sefina 14 oz	Avaunt 6 oz	Beleaf 2.8 oz Rimon 12 fl oz	Avaunt 6 oz	Sefina 14 oz	Avaunt 6 oz	Dannitol +Assail 10.7 fl, 3 oz



Experimental Layout



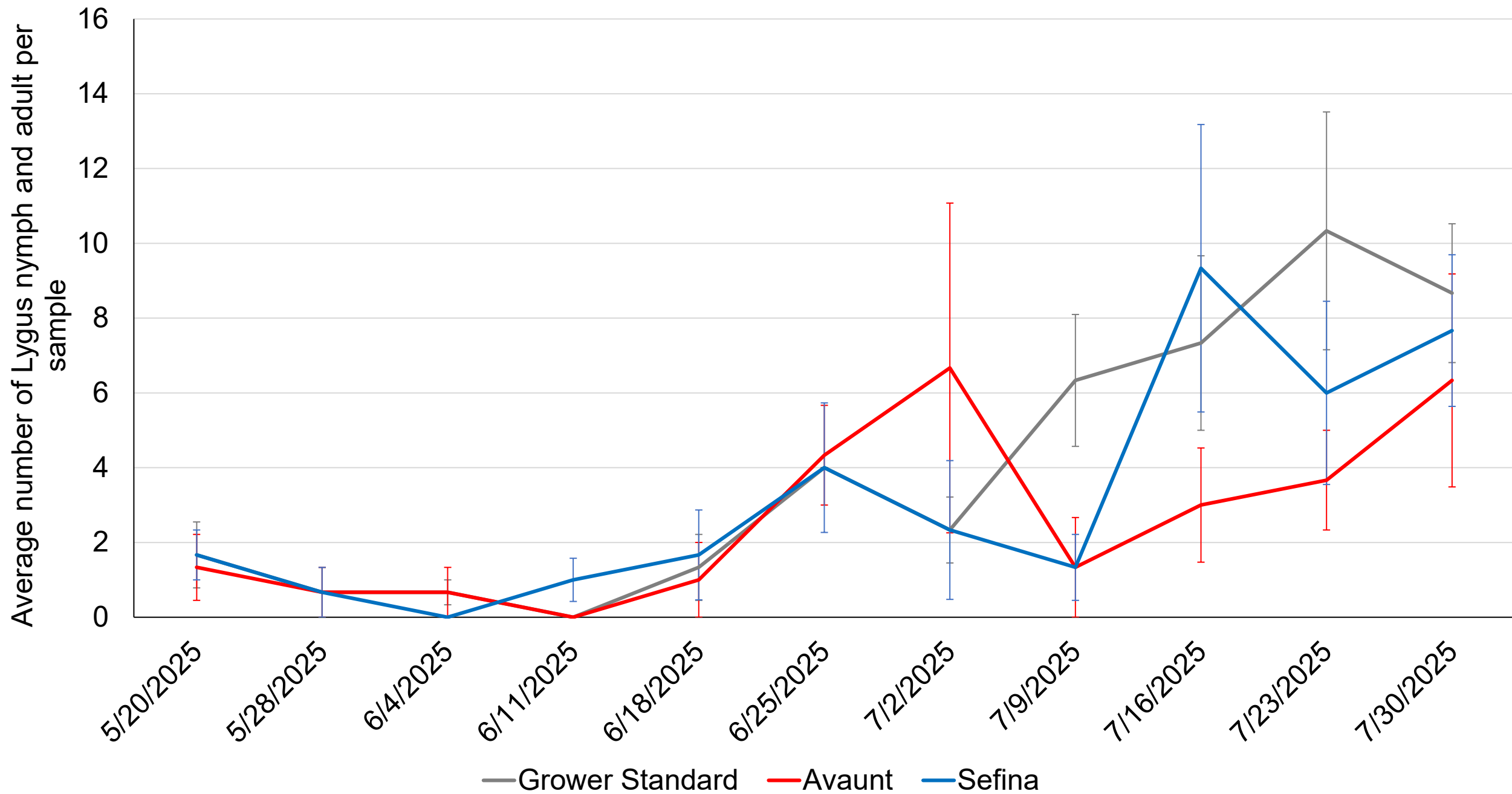
Sprayed once per week (except for *Lygus dryspell*)



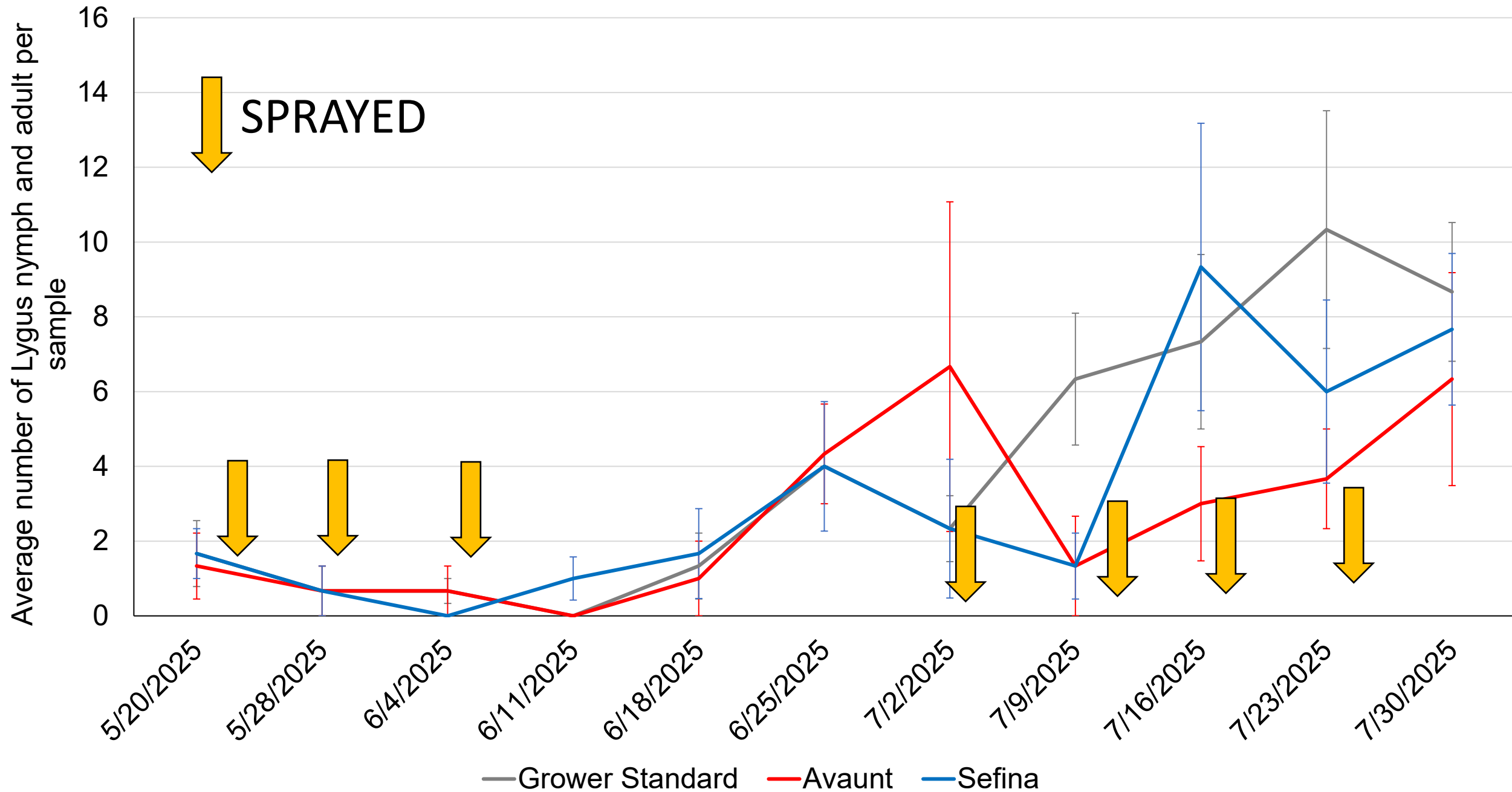
Sampled 40 plants per hoophouse
once per week



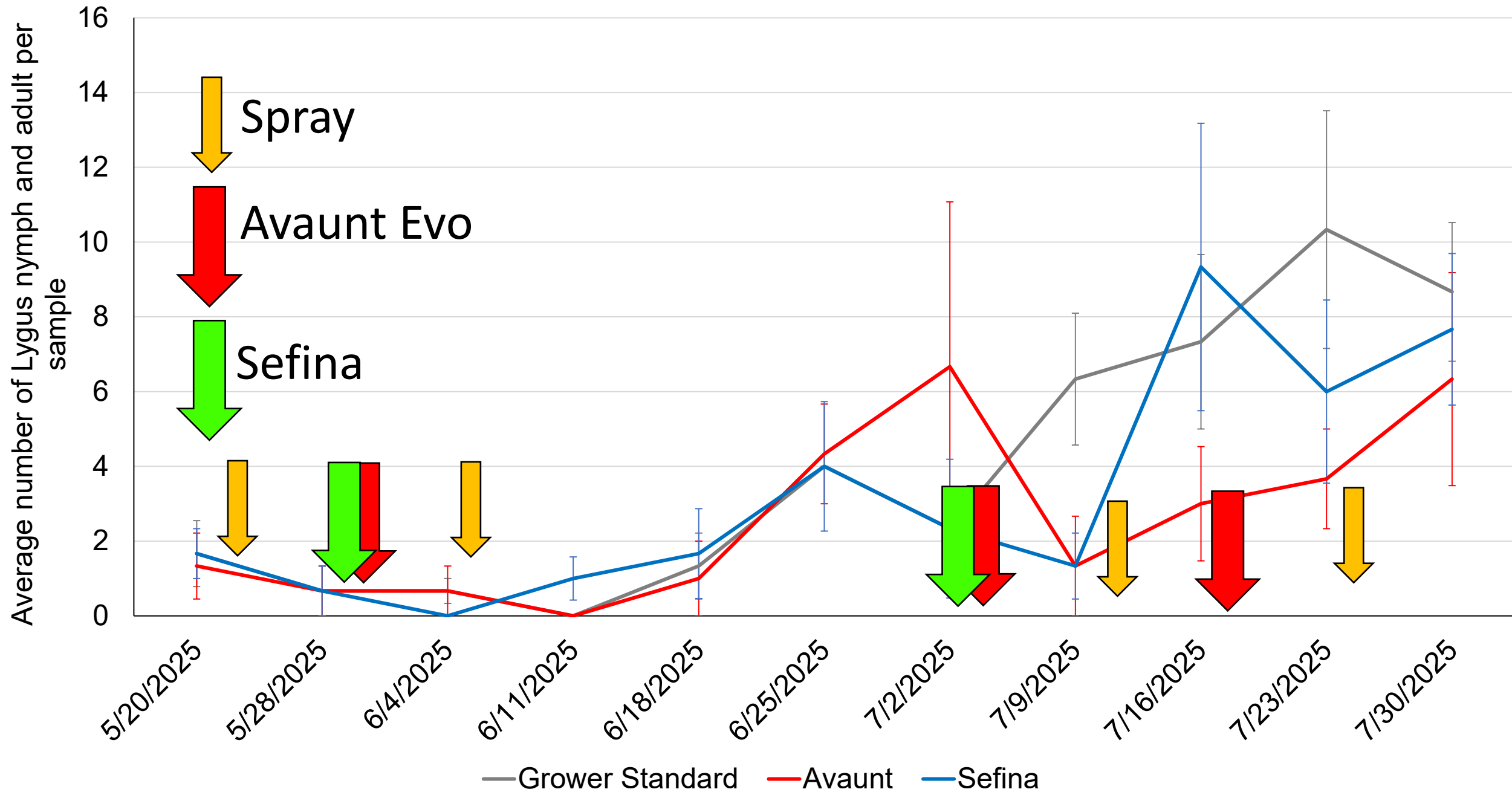
Lygus population under hoophouse over time



Lygus population under hoophouse over time



Lygus population under hoophouse over time

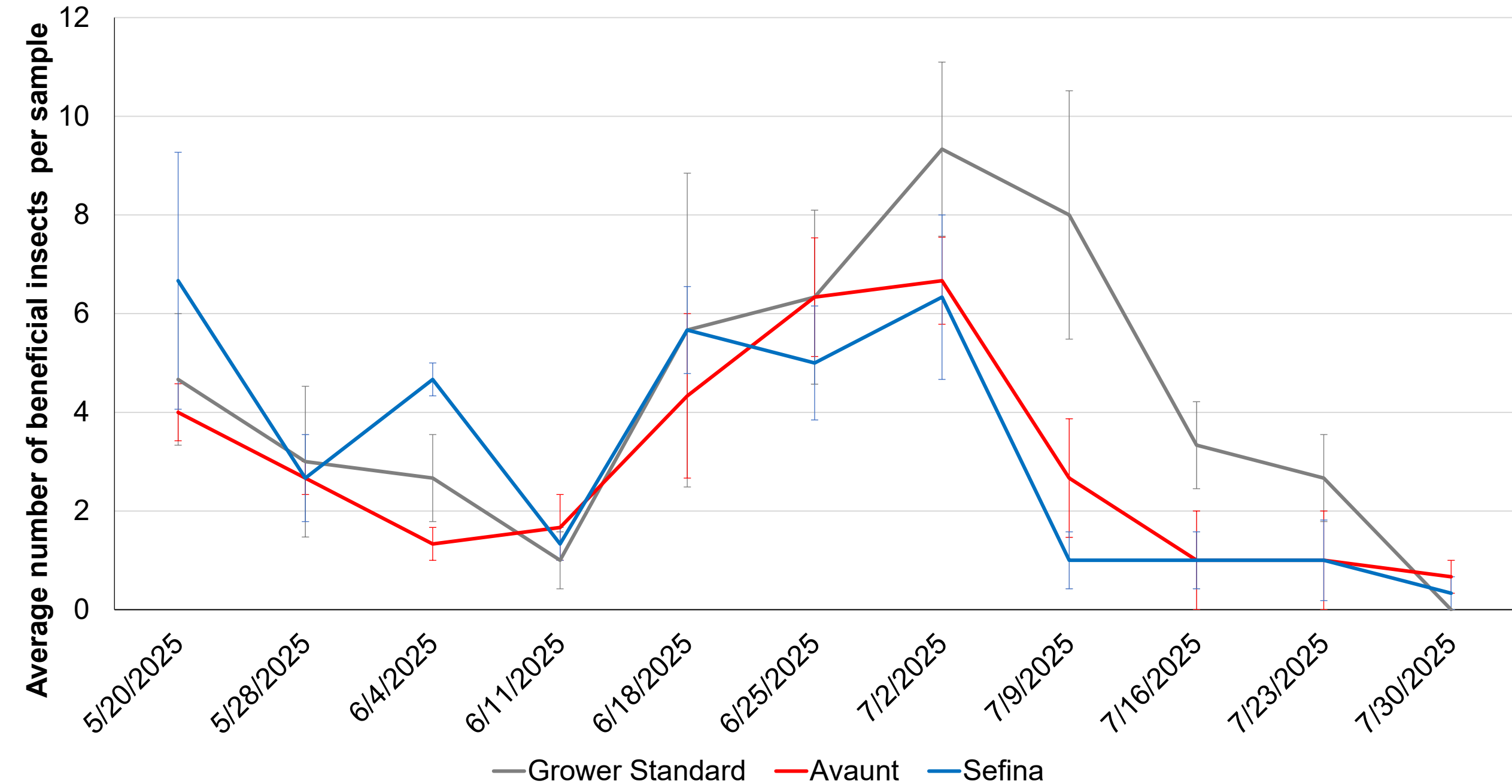


Lygus Rotation Trial at Freshway Farms

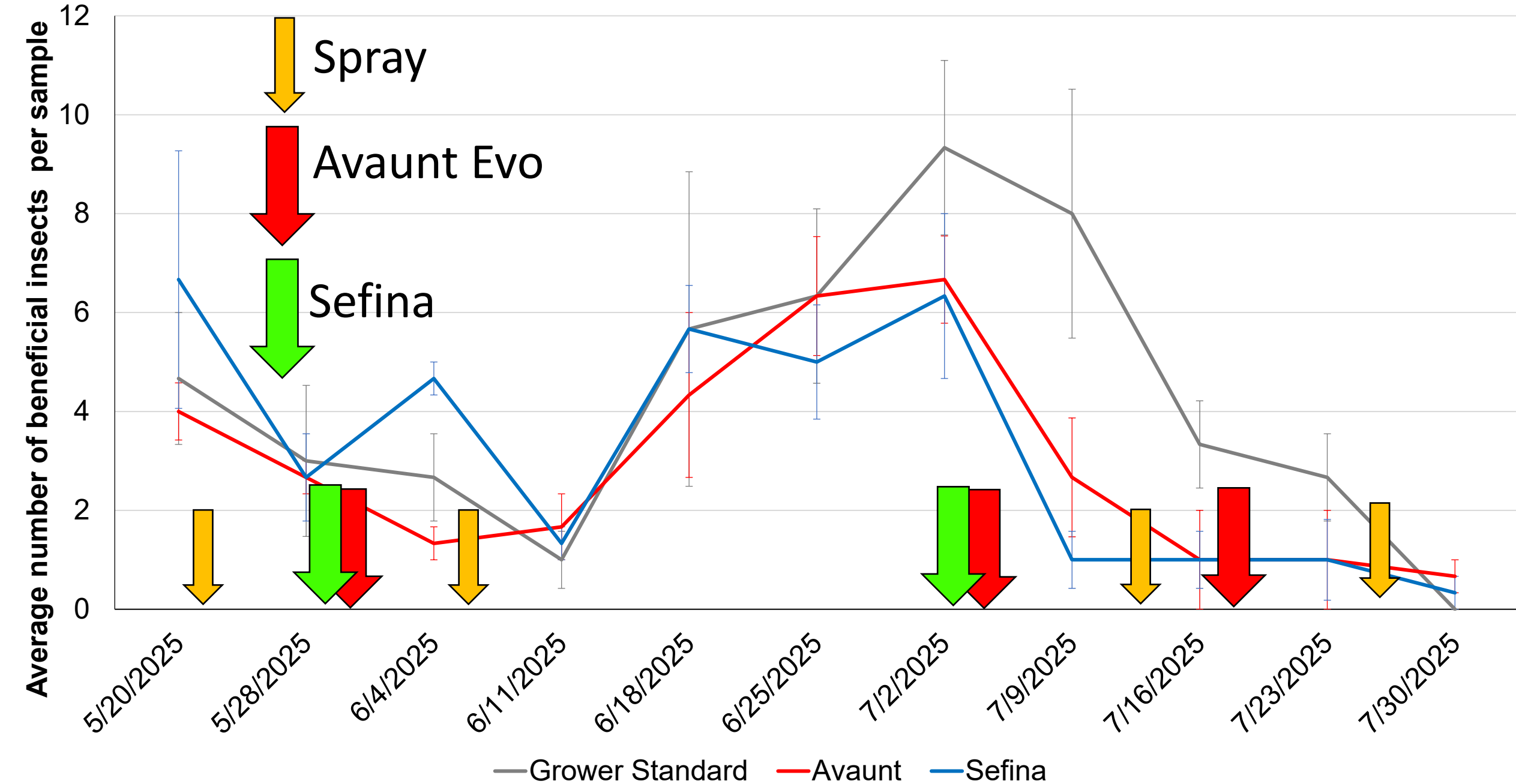
Treatment	App 1	App 2	App 3	App 4	App 5	App 6	App 7	App 8	App 9	App 10	App 11
Grower Standard	Beleaf 2.8 oz	Rimon 12 fl oz	Sivanto 14 fl oz	Malathion 2-pin Rimon 12 fl oz	Bifenthrin	Sivanto 14 fl oz	Beleaf 2.8 oz	Sivanto 14 fl oz	Rimon 12 fl oz	Dannitol +Assail 10.7 fl, 3 oz	Dannitol +Assail 10.7 fl, 3 oz
Sefina Sandwich	Beleaf 2.8 oz Rimon 12 fl oz	Sefina 14 oz	Sivanto 14 fl oz	Avaunt 6 oz	Bifenthrin	Avaunt 6 oz	Beleaf 2.8 oz Rimon 12 fl oz	Avaunt 6 oz	Avaunt 6 oz	Sefina 14 oz	Dannitol +Assail 10.7 fl, 3 oz
Avaunt Sandwich	Beleaf 2.8 oz Rimon 12 fl oz	Avaunt 6 oz	Sivanto 14 fl oz	Sefina 14 oz	Bifenthrin	Avaunt 6 oz	Beleaf 2.8 oz Rimon 12 fl oz	Avaunt 6 oz	Sefina 14 oz	Avaunt 6 oz	Dannitol +Assail 10.7 fl, 3 oz
Spray Date	5/22	5/29	6/7/25	7/5/25	7/12/25	7/19/25	7/26/25				



Population of beneficial insects over time



Population of beneficial insects over time



Does it matter what you start with?

Sefina

OR

Avaunt Evo



Does it matter what you start with?

Sefina

Avaunt Evo



Cultivar Selection



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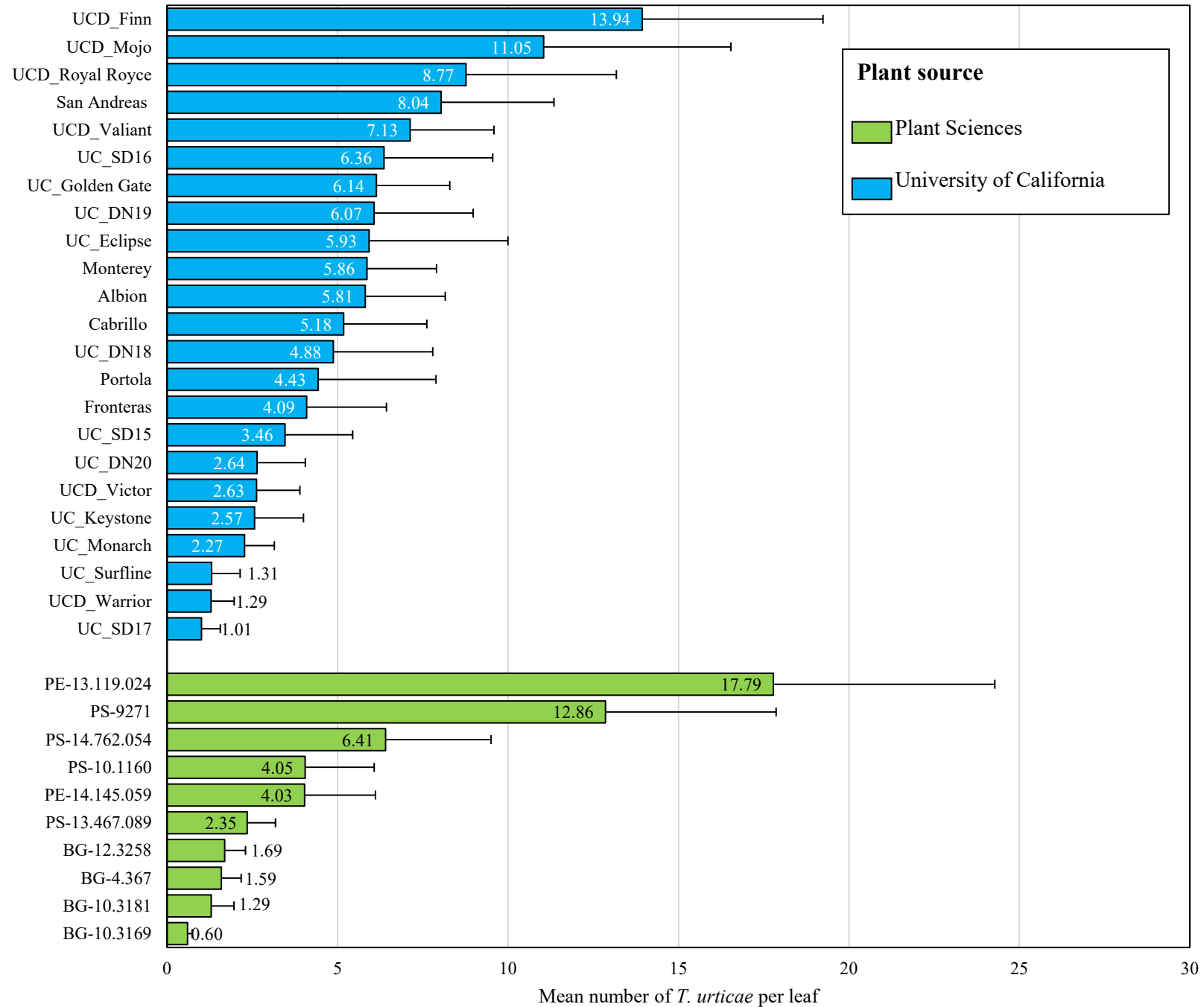
Insect/Mite Cultivar Trial

	Rep I			Rep II			Rep III			Rep IV		
1	1011 (28)	1022 (4)	1033 (9)	1111 (8)	1122 (14)	1133 (24)	1211 (13)	1222 (9)	1233 (10)	1311 (20)	1322 (6)	1333 (17)
2	1010 (13)	1021 (26)	1032 (2)	1110 (5)	1121 (9)	1132 (13)	1210 (15)	1221 (32)	1232 (18)	1310 (31)	1321 (32)	1332 (4)
3	1009 (33)	1020 (30)	1031 (24)	1109 (25)	1120 (20)	1131 (7)	1209 (27)	1220 (20)	1231 (28)	1309 (23)	1320 (2)	1331 (27)
4	1008 (5)	1019 (16)	1030 (23)	1108 (18)	1119 (23)	1130 (15)	1208 (4)	1219 (17)	1230 (25)	1308 (8)	1319 (15)	1330 (26)
5	1007 (11)	1018 (12)	1029 (7)	1107 (31)	1118 (26)	1129 (19)	1207 (22)	1218 (26)	1229 (3)	1307 (12)	1318 (10)	1329 (28)
6	1006 (22)	1017 (6)	1028 (29)	1106 (29)	1117 (12)	1128 (3)	1206 (7)	1217 (8)	1228 (33)	1306 (1)	1317 (13)	1328 (21)
7	1005 (21)	1016 (25)	1027 (19)	1105 (4)	1116 (30)	1127 (28)	1205 (14)	1216 (31)	1227 (24)	1305 (9)	1316 (18)	1327 (7)
8	1004 (3)	1015 (1)	1026 (31)	1104 (6)	1115 (10)	1126 (2)	1204 (30)	1215 (16)	1226 (12)	1304 (19)	1315 (22)	1326 (33)
9	1003 (32)	1014 (27)	1025 (20)	1103 (33)	1114 (17)	1125 (21)	1203 (2)	1214 (21)	1225 (11)	1303 (5)	1314 (11)	1325 (29)
10	1002 (17)	1013 (10)	1024 (15)	1102 (11)	1113 (27)	1124 (1)	1202 (29)	1213 (1)	1224 (6)	1302 (14)	1313 (3)	1324 (25)
11	1001 (18)	1012 (14)	1023 (8)	1101 (16)	1112 (22)	1123 (32)	1201 (19)	1212 (23)	1223 (5)	1301 (16)	1312 (30)	1323 (24)
	BED 9	BED 10	BED 11	BED 12	BED 13	BED 14	BED 15	BED 16	BED 17	BED 18	BED 19	BED 20

- UC Davis and Plant Sciences
- Future: every player in the breeding game
- 20 plants per plot, replicated 4 times







Future Projects



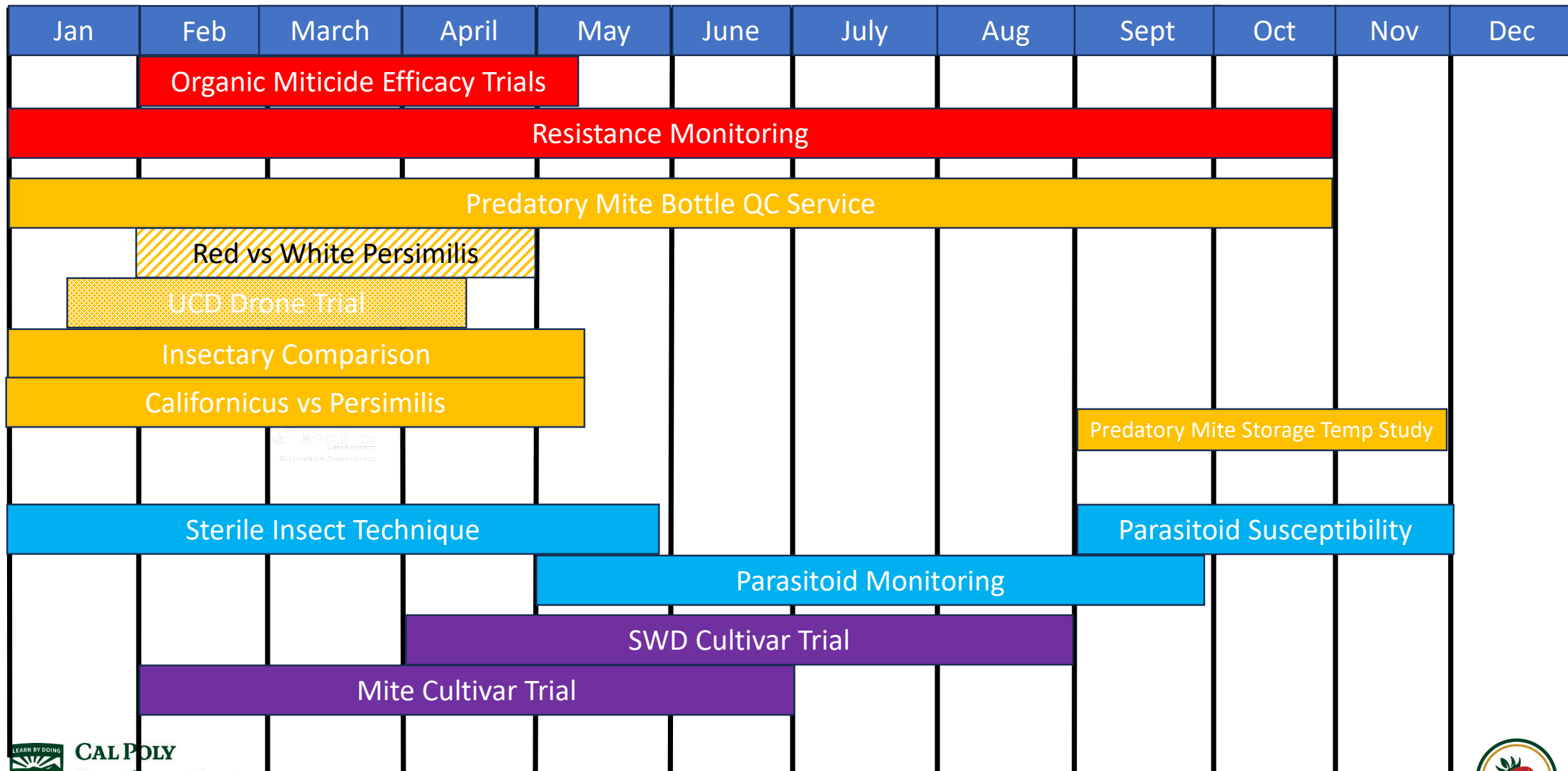
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Project 2026

Resistance Monitoring
Predatory Mites

Cultivar Trials
SWD Alternative Control



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Updated 8/6/2025



Acknowledgements

- Bill Turechek, PhD CSC
- Hilary Thomas, PhD, Naturripe
- Frank Zalom, PhD, UC Davis
- Hamutahl Cohen, PhD, UCCE
- Joanna Chiu, UC Davis
- Mitchell Feldman, UC Davis
- Mark Bolda, UCCE
- Kyle Pickles, PCA
- Kevin Gee, Grower, BWG
- Scott Pierce, PCA
- Randy Wittenburg, PCA
- Rory Oderberg, PCA
- Sage Finch, PCA
- Lee and Lane Stoekle, PCA
- Fernando Cano, PCA
- Gustavo Arredondo, Grower

- David Headrick, PhD Cal Poly SLO
- Ryan Perry, PhD Cal Poly SLO
- Daniel Hasegawa, PhD, USDA
- Jose Alvarado Rojas, BASF
- Jose Cabrera, BASF
- Mike Ravalin, BASF
- Kate Walker, FMC
- Kyle Keuchel, Syngenta
- Jeanette Rapicavoli, Syngenta
- Sudarshan Ayal, Syngenta
- Kiley Jensen, Parabug
- Tony Sandoval, Farm_ng
- Adam Stager, TRIC robotics
- Shimon Steinberg, CSO emeritus, Biobee
- Saul Alba, Biobee
- Cesar Mendoza, Biobee
- Kelly Vance, Biobee
- Paulo Santos, Bioline
- Tina Ziaei, Bioline
- Paulo Santos, Bioline
- Christopher Hight, Betteravia
- Mason Davis, Betteravia
- Jimmy Klick, Driscoll's
- Diego Nieto, Driscoll's
- Matt Hoffman, Driscoll's
- Alfredo Villacana, BFS



Thank you!

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