

Invertebrate Management Update

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- Tadpole shrimp
- ~~Armyworm~~
- Rice water weevil
- Rice seed midge

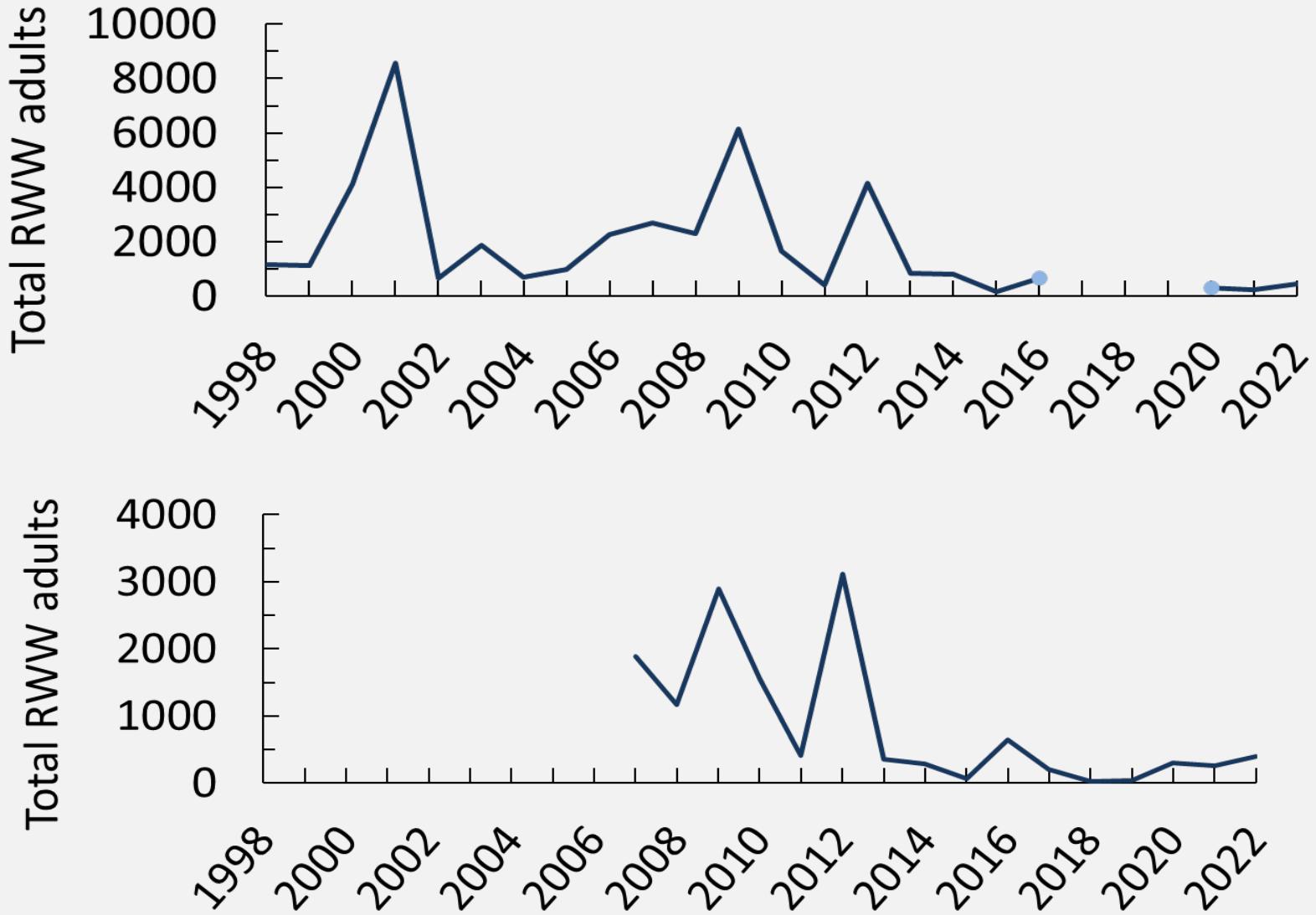


Rice water weevil



Long-term monitoring of rice water weevil





Tadpole shrimp







IPM-based
methods

Insecticide
resistance

Regulatory
risk

TPS insecticide-rings

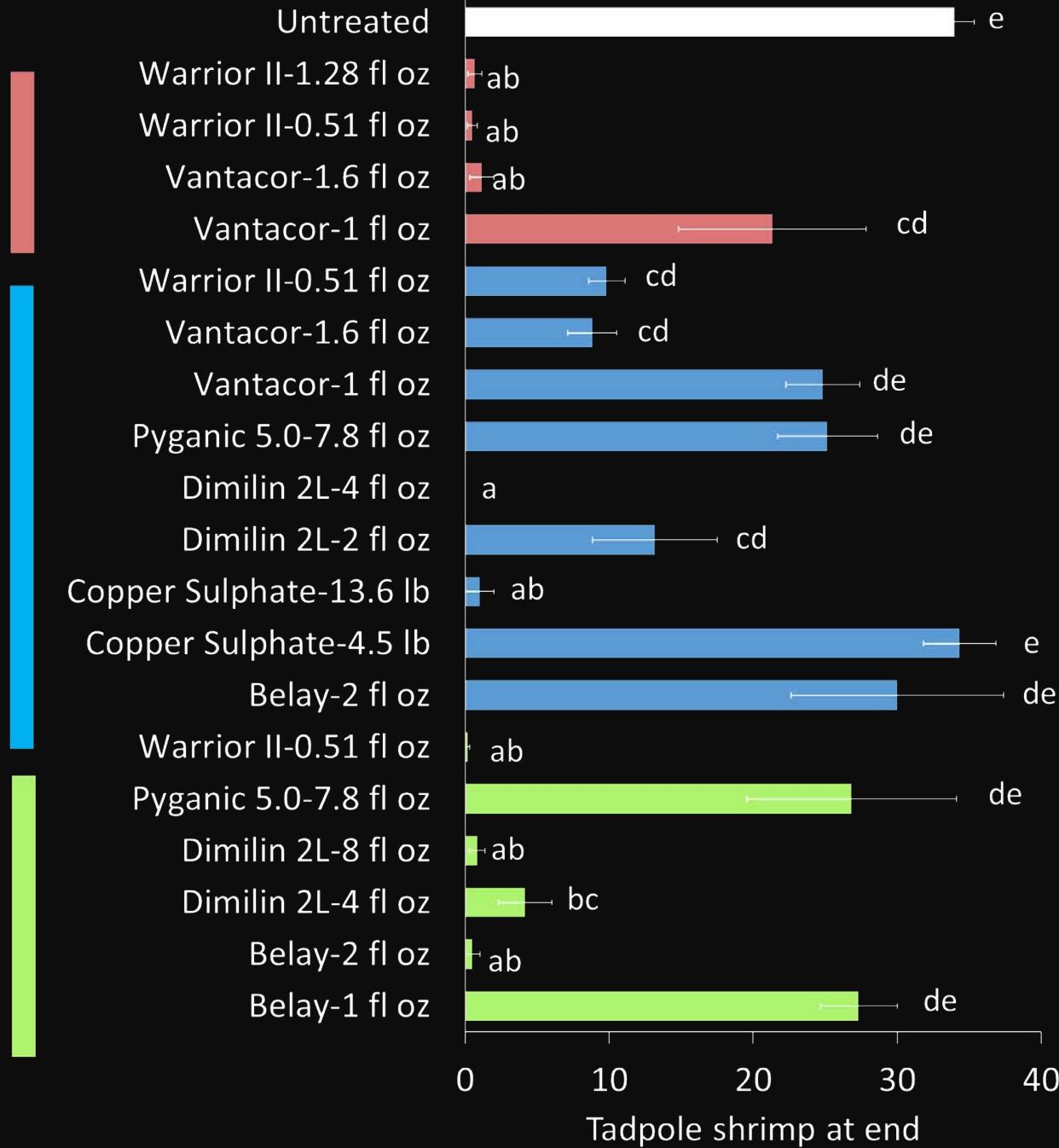


Trt #	Timing	Treatment	Active ingredient	Rate/a c	Units	Est. cost
1	--	Untreated		--	--	--
2	Pre-flood soil	Warrior II	Lambda-cyhalothrin	1.28	fl oz	\$1.00
3	Pre-flood soil	Warrior II	Lambda-cyhalothrin	0.51	fl oz	\$0.50
4	Pre-flood soil	Vantacor	Chlorantraniliprole	1.6	fl oz	?
5	Pre-flood soil	Vantacor	Chlorantraniliprole	1	fl oz	?
6	Post-flood early	Warrior II	Lambda-cyhalothrin	0.51	fl oz	\$0.50
7	Post-flood early	Vantacor	Chlorantraniliprole	1.6	fl oz	?
8	Post-flood early	Vantacor	Chlorantraniliprole	1	fl oz	?
9	Post-flood early	Pyganic 5.0 EC	Pyrethrins	7.8	fl oz	\$36.50
10	Post-flood early	Dimilin 2L	Diflubenzuron	4	fl oz	\$4.00
11	Post-flood early	Dimilin 2L	Diflubenzuron	2	fl oz	\$2.00
12	Post-flood early	Copper Sulphate	Copper sulphate	13.6	lb	\$27.00
13	Post-flood early	Copper Sulphate	Copper sulphate	4.5	lb	\$9.00
14	Post-flood early	Belay	Clothianidin	2	fl oz	\$5.00
15	Post-flood late	Warrior II	Lambda-cyhalothrin	0.51	fl oz	\$0.50
16	Post-flood late	Pyganic 5.0 EC	Pyrethrins	7.8	fl oz	\$4.50
17	Post-flood late	Dimilin 2L	Diflubenzuron	8	fl oz	\$8.00
18	Post-flood late	Dimilin 2L	Diflubenzuron	4	fl oz	\$4.00
19	Post-flood late	Belay	Clothianidin	2	fl oz	\$5.00
20	Post-flood late	Belay	Clothianidin	1	fl oz	\$2.50

Methods: rings

- Pre-flood app: May 24
- Water start: May 25
- Plant: May 27
- Early post-flood app: May 27
- Late post-flood app: June 2
- Final TPS scoop: June 13+16

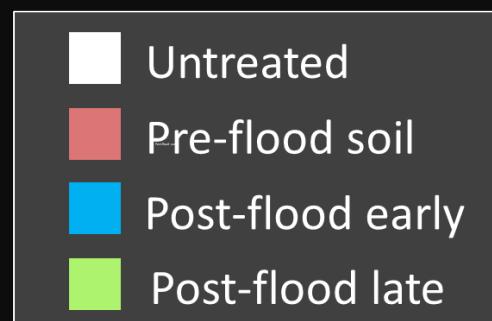
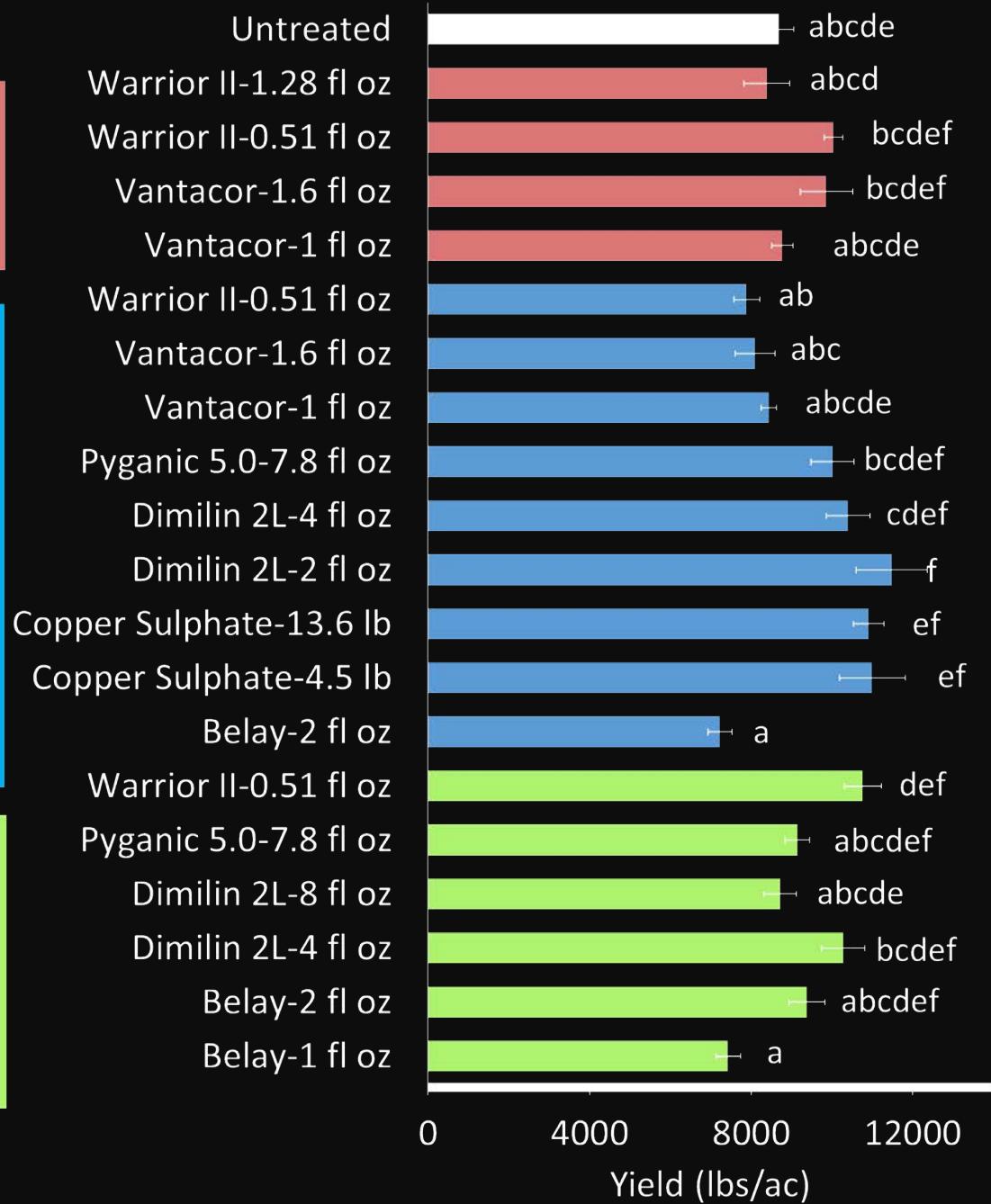




Untreated
 Pre-flood soil
 Post-flood early
 Post-flood late



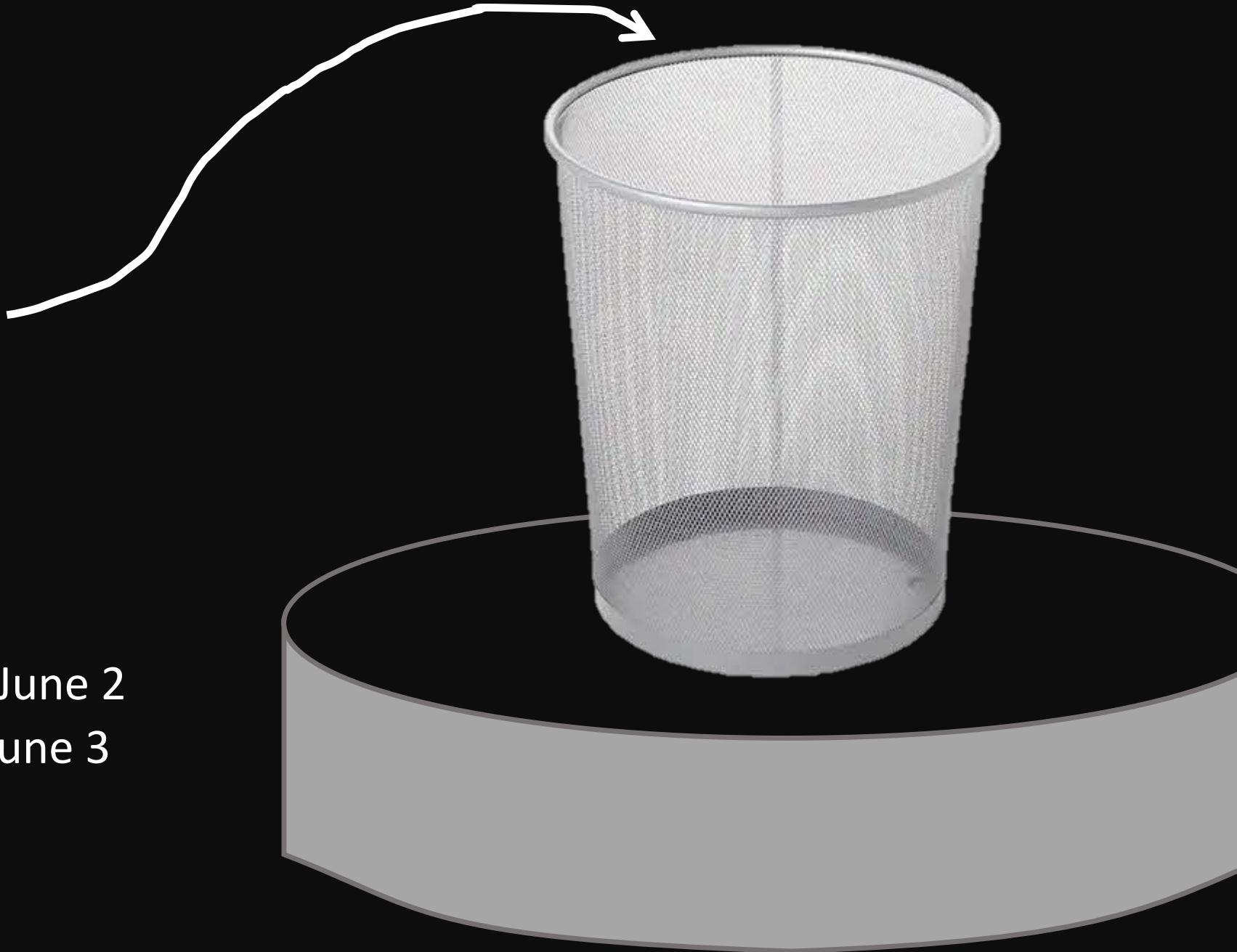
Untreated
Pre-flood soil
Post-flood early
Post-flood late

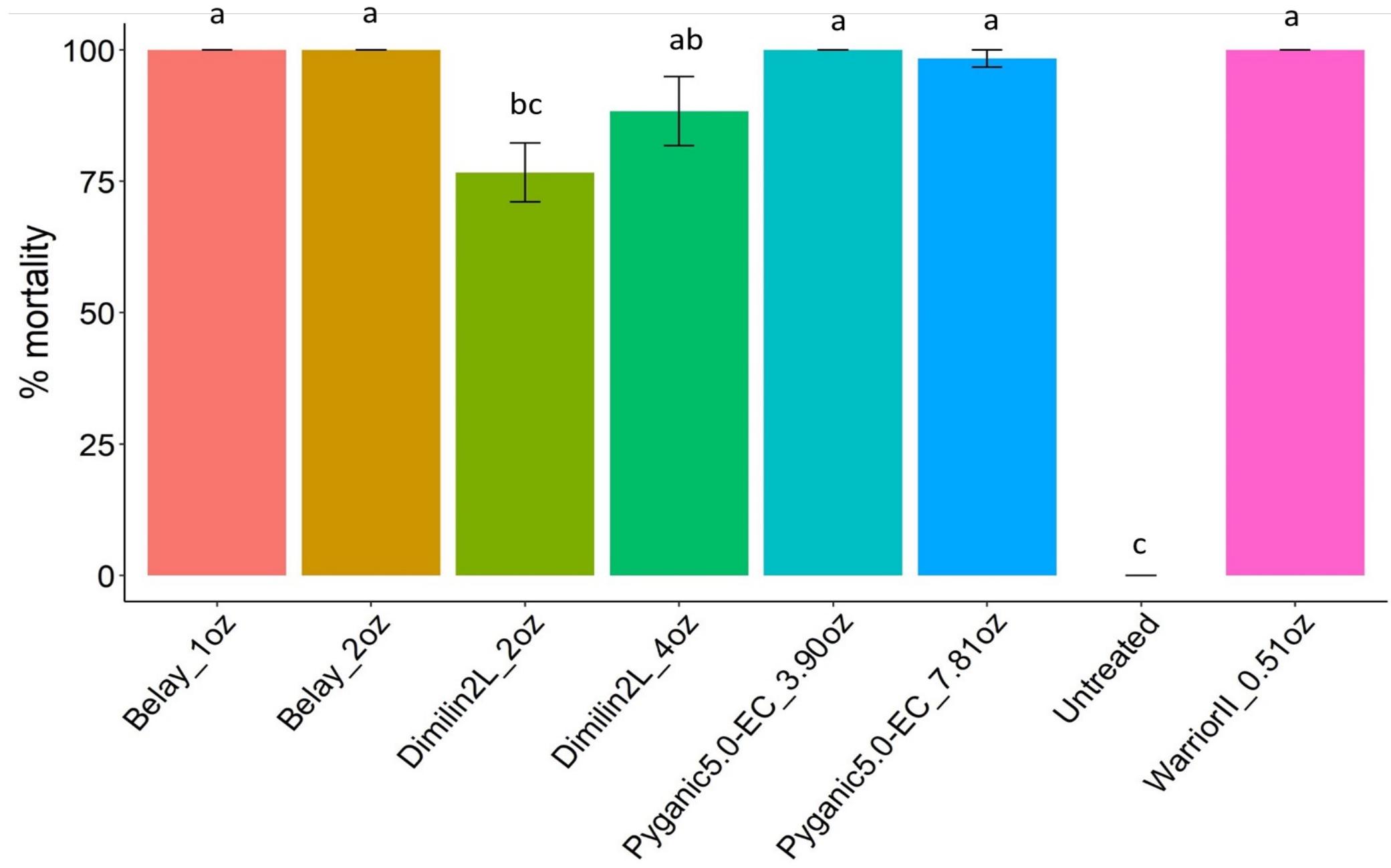




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- Water start: May 25
- Plant: May 27
- Cans and TPS added: June 2
- Treatments applied: June 3
- Assessed: June 7



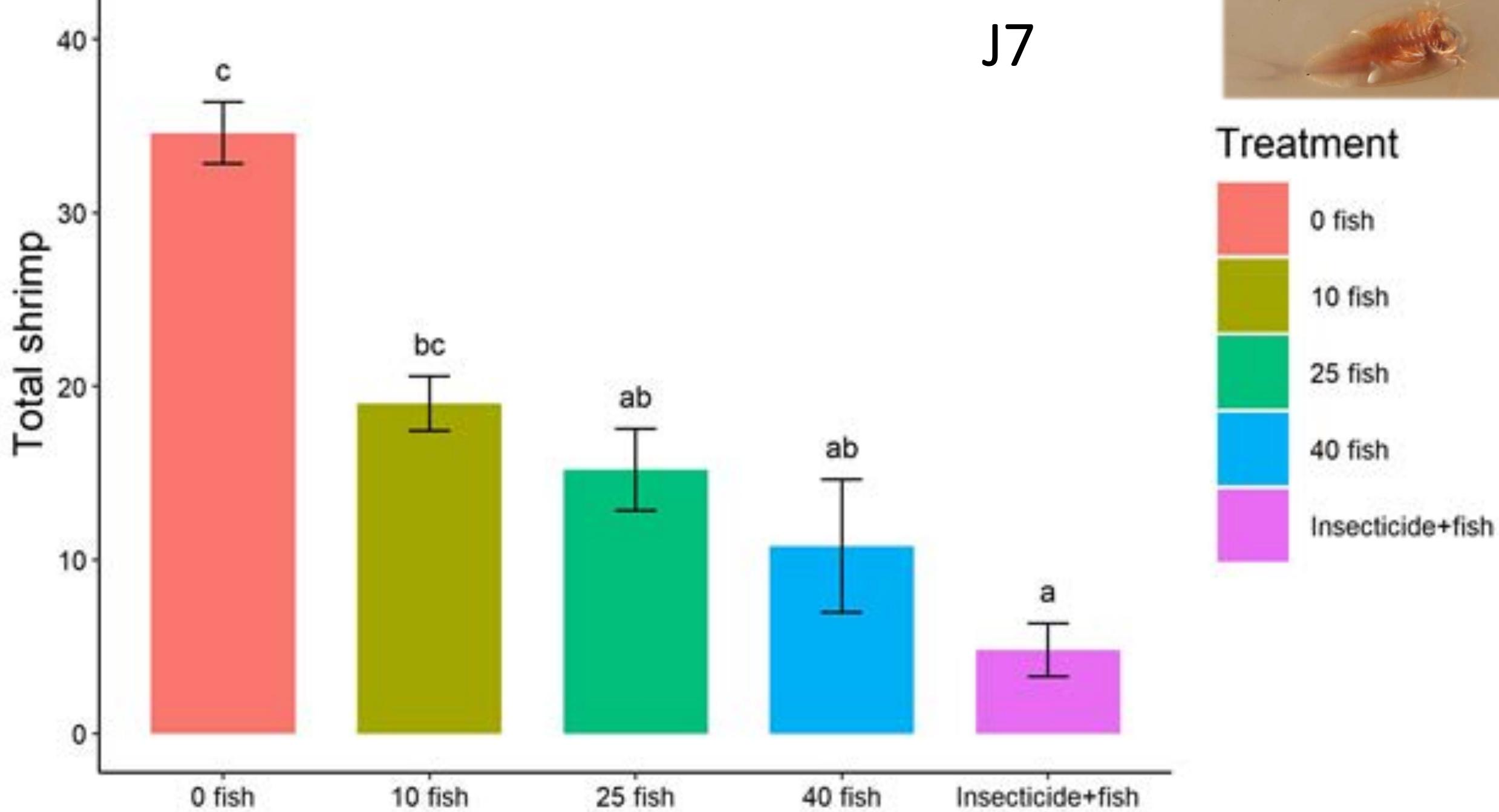


- Treatments
 - 0 fish
 - 10 fish
 - 25 fish
 - 40 fish
 - 40 fish + Dimilin
- Two fields
 - J7 – high TPS
 - Systems – moderate TPS





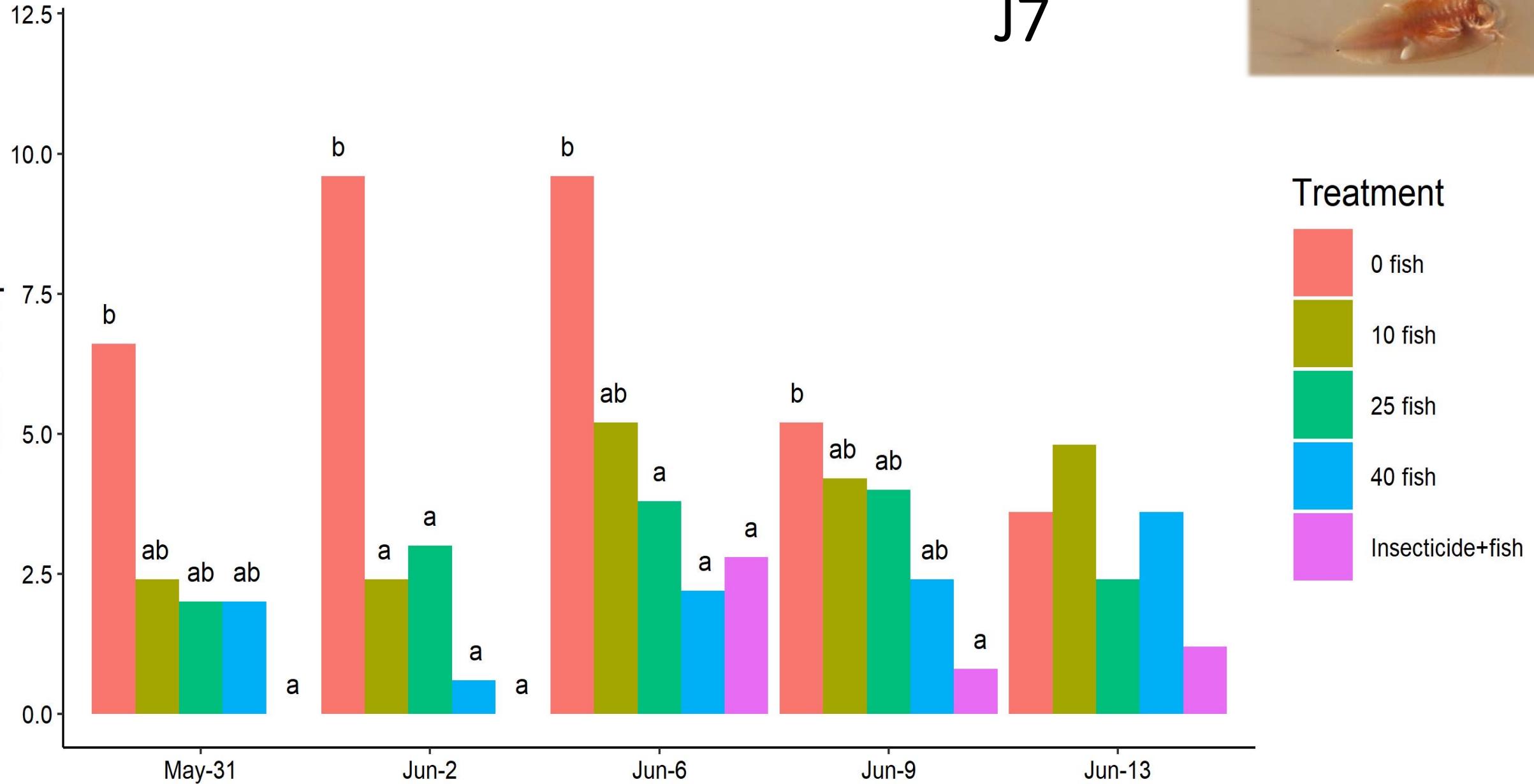
J7



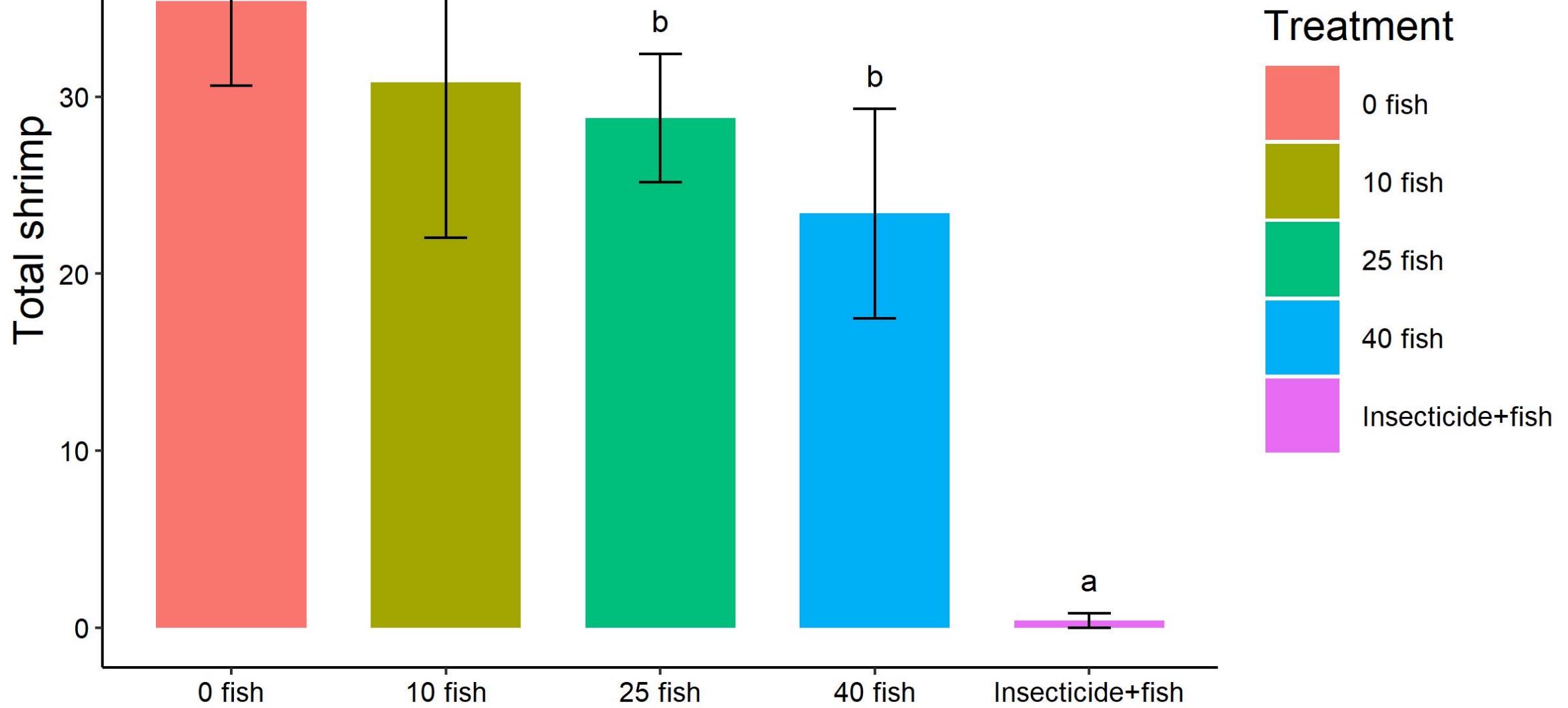
J7

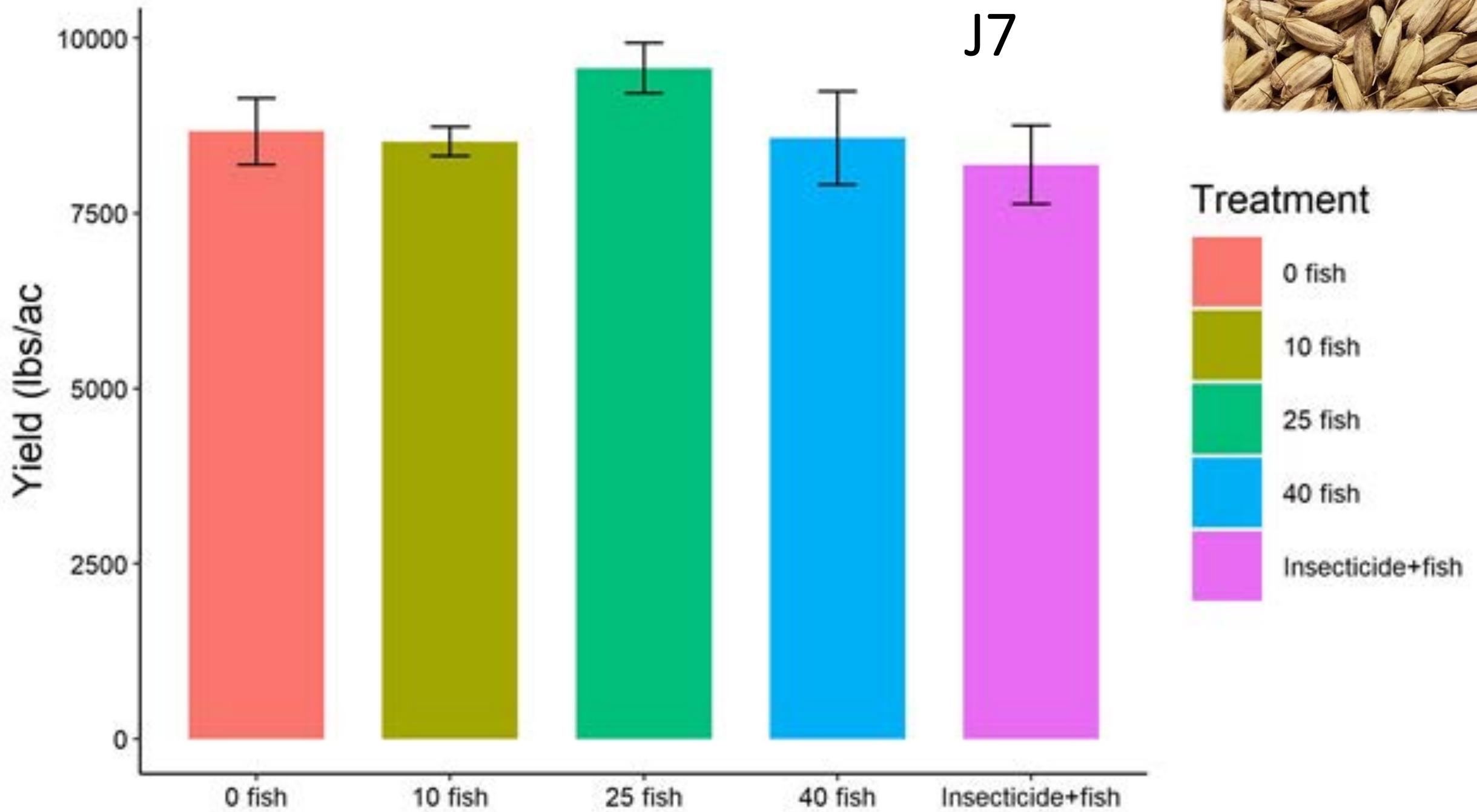


Total shrimp



Systems





Rice seed midge

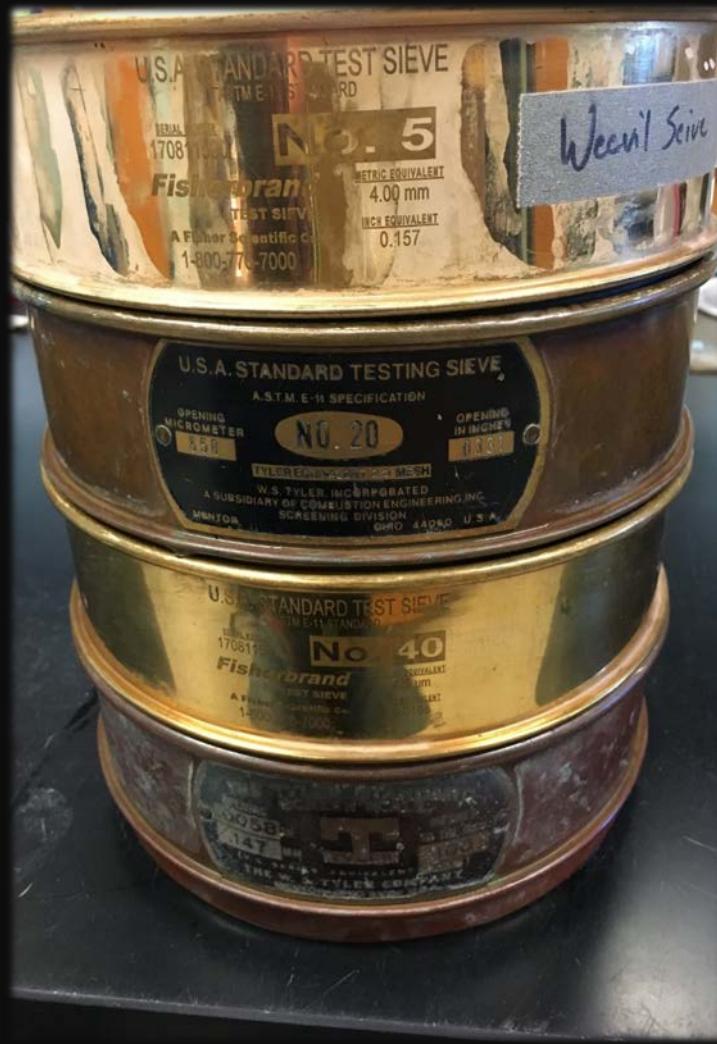
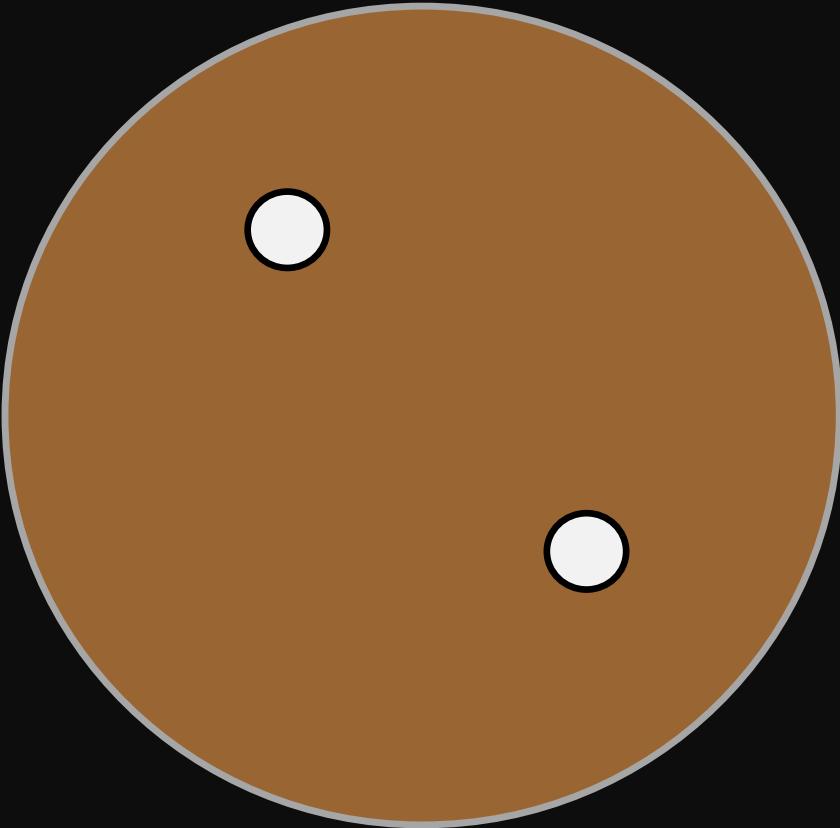




Insecticide trial: seed midge

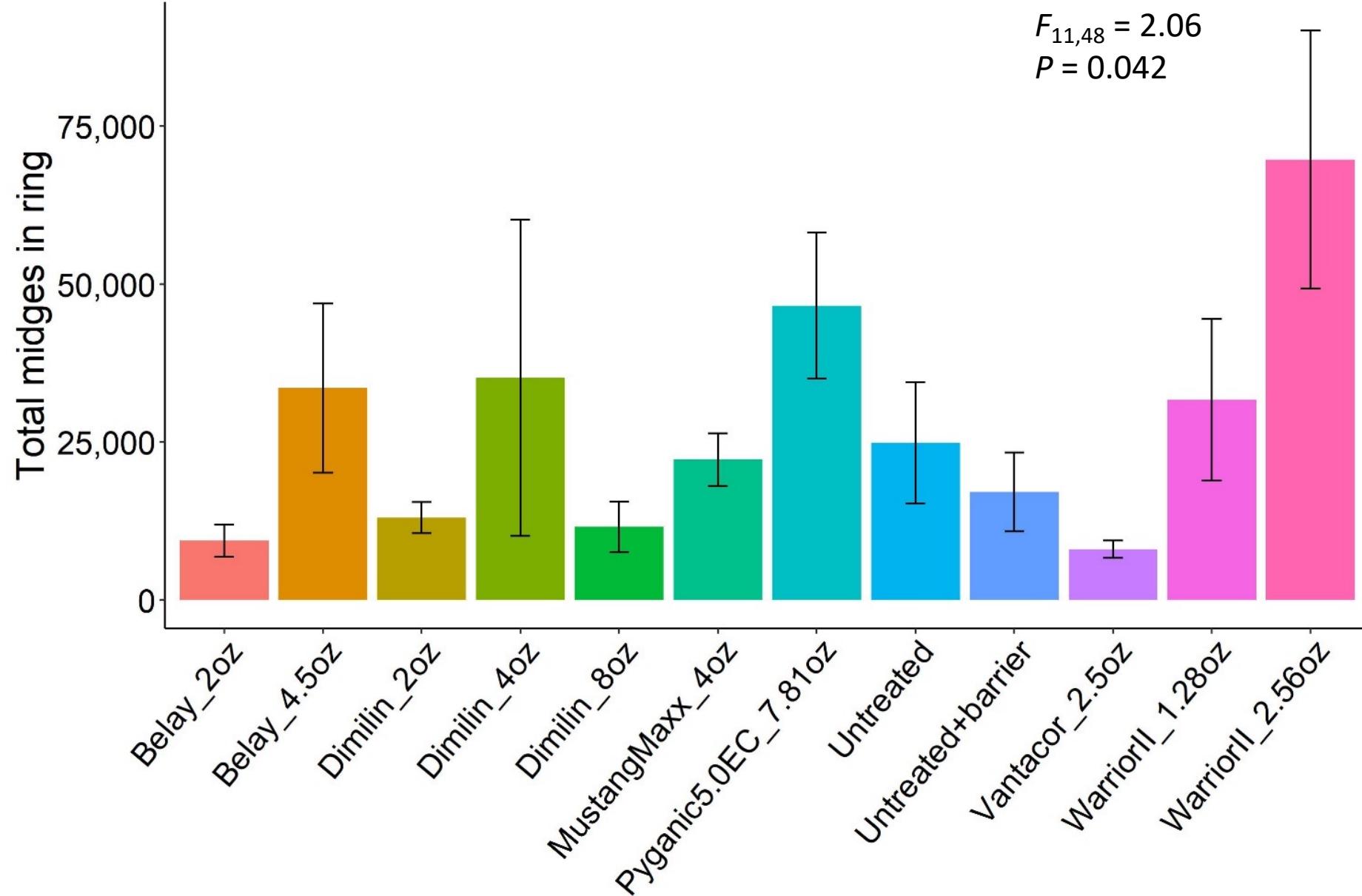
Trt #	Treatment	Active ingredient	Rate/ac	Units	Est. cost
1	Belay	Clothianidin		2 fl oz	\$1.00
2	Belay	Clothianidin	4.5	fl oz	\$2.50
3	Dimilin 2L	Diflubenzuron		2 fl oz	\$1.00
4	Dimilin 2L	Diflubenzuron		4 fl oz	\$2.50
5	Dimilin 2L	Diflubenzuron		8 fl oz	\$4.50
6	Mustang Maxx	Zeta-cypermethrin		4 fl oz	\$2.50
7	Pyganic 5.0 EC	Pyrethrins	7.81	fl oz	\$4.50
8	Vantacor	Chlorantraniliprole	2.5	fl oz	\$1.50
9	Warrior II	Lambda-cyhalothrin	1.28	fl oz	\$1.00
10	Warrior II	Lambda-cyhalothrin	2.56	fl oz	\$1.50
11	Untreated #1	N/A	N/A		
12	Untreated# 2- barrier	Barrier	Barrier		





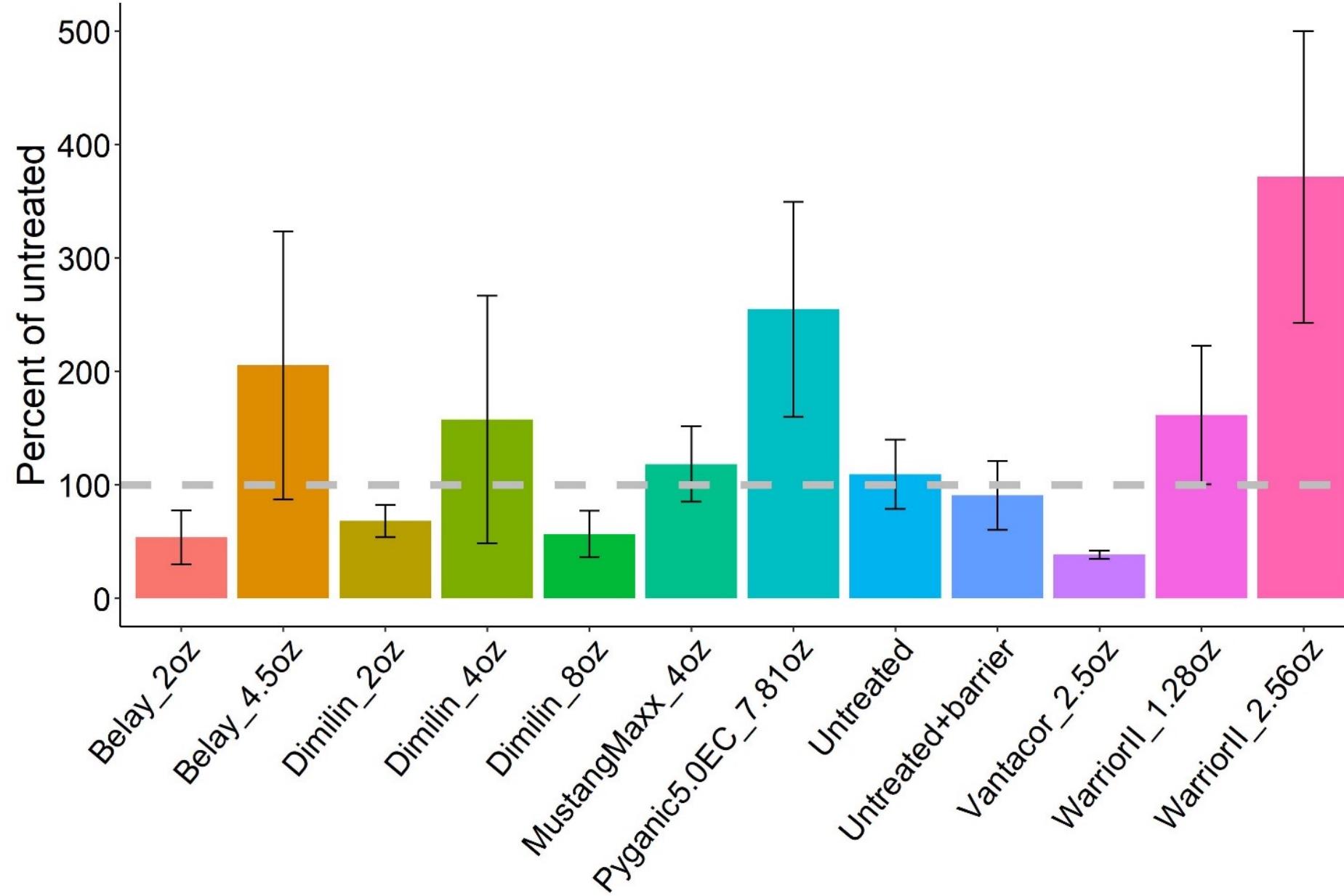


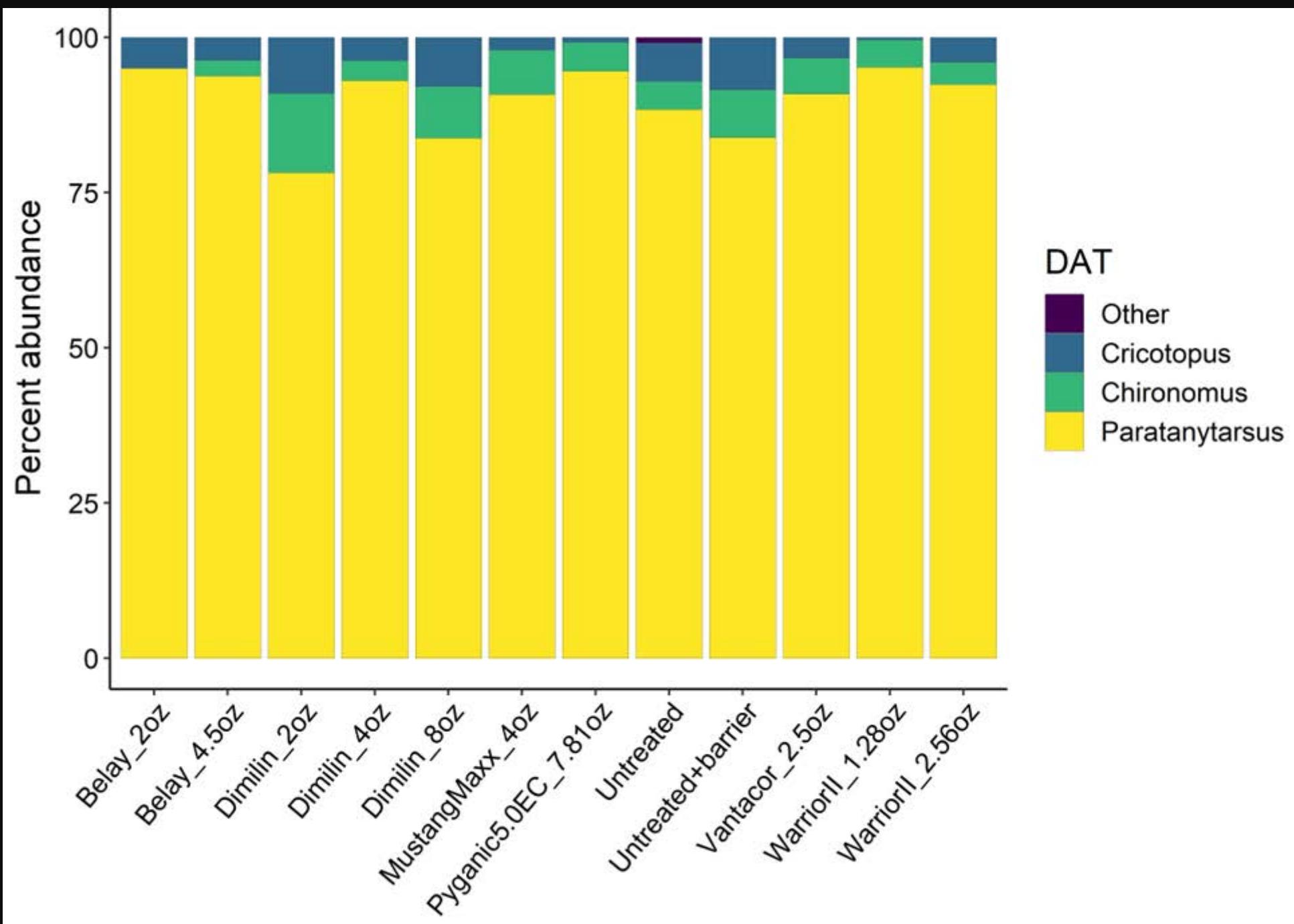
Coptodisca
bigiode / met





Cnephodes
biguttula
/met





Rice arthropod IPM



Acknowledgements

CA Rice Research Board
Rice Experiment Station
Grettenberger lab undergraduates
Ray Stogsdill



Fi-Ve Bug IPM
UC Davis



Questions?