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Agriculture and Natural Resources
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Chemical, Botanical, and Microbial Solutions for Managing Spider Mites

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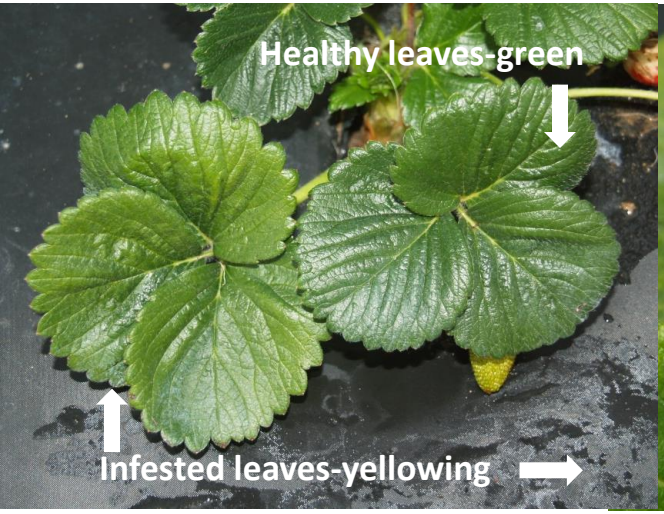
Twospotted spider mite

Spider mite damage



Symptoms progress from yellow mottling, scarring to bronzing and drying out of leaves. Stunted growth and plant death can also be seen.

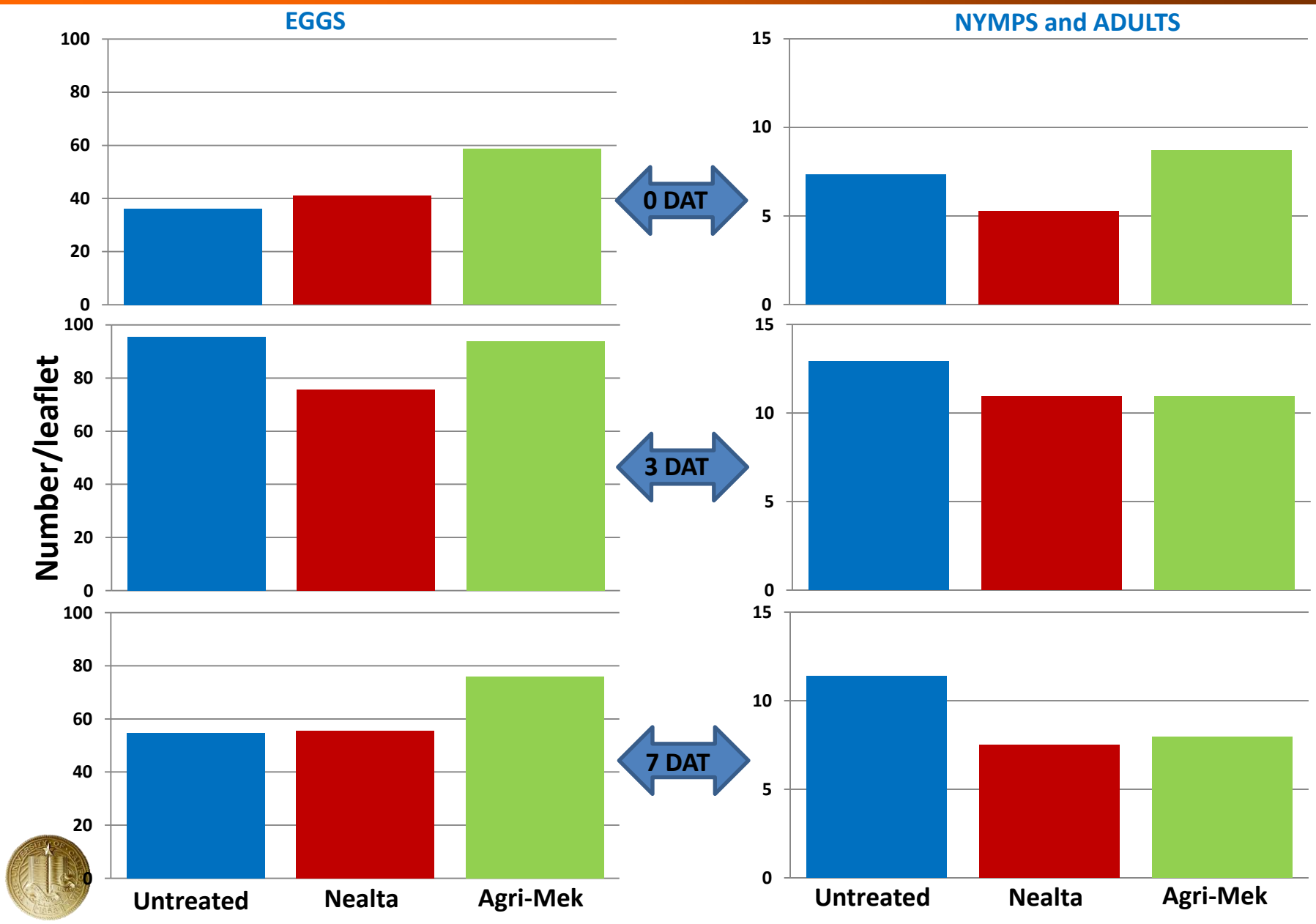
Spider mite damage in Benicia

Purplish dark coloration of the upper leaf surface corresponding to the damaged underside is specific to the cultivar, Benicia

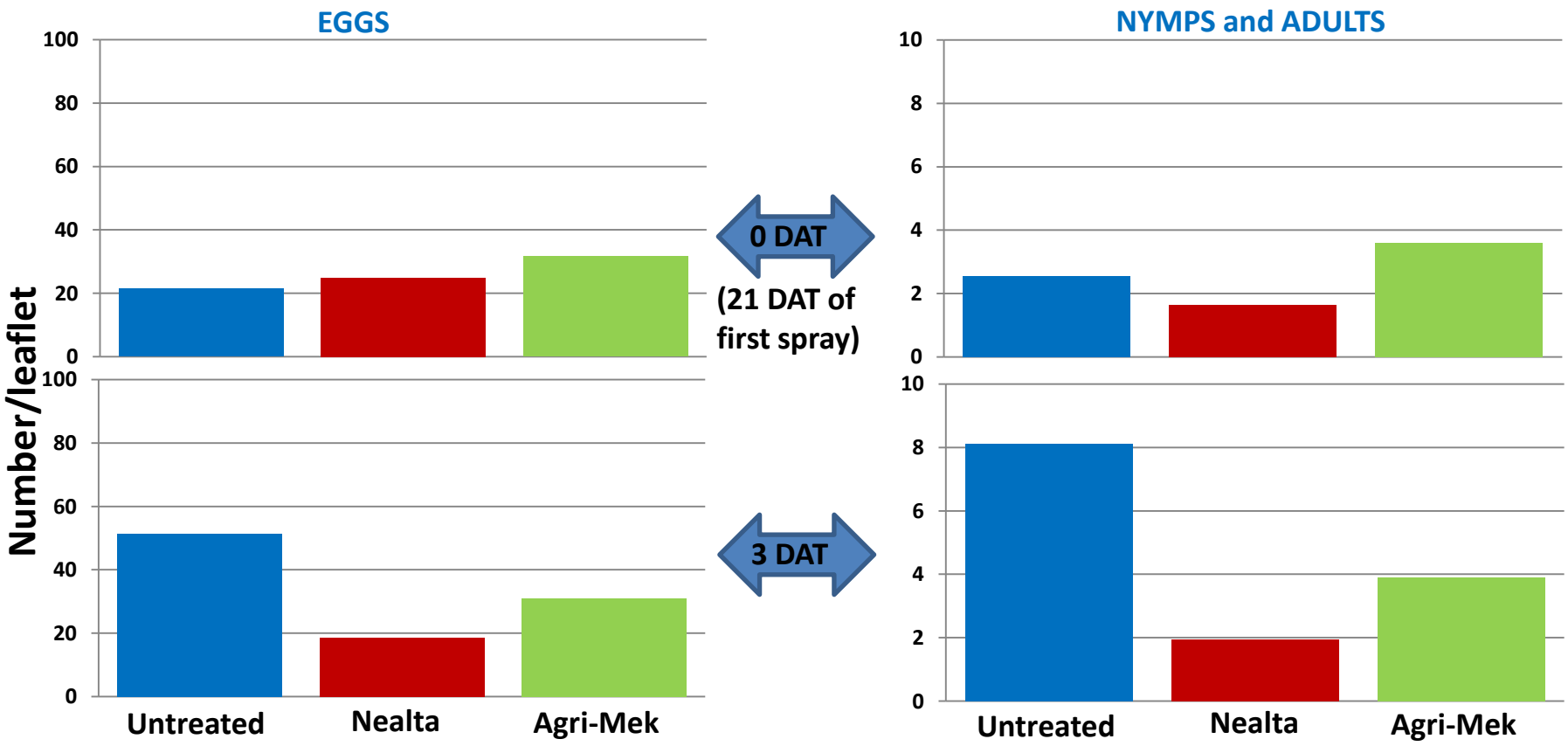
2011 field trial

Treatments	1. Untreated control
	2. Nealta (cyflumetofen) 13.7 fl oz/ac in 100 gal
	3. Agri-Mek 0.15 EC (abamectin) 16 fl oz/ac in 100 gal
Plot size	20’ long bed replicated 4 times
Design	Randomized complete block

2011 field trial-First spray



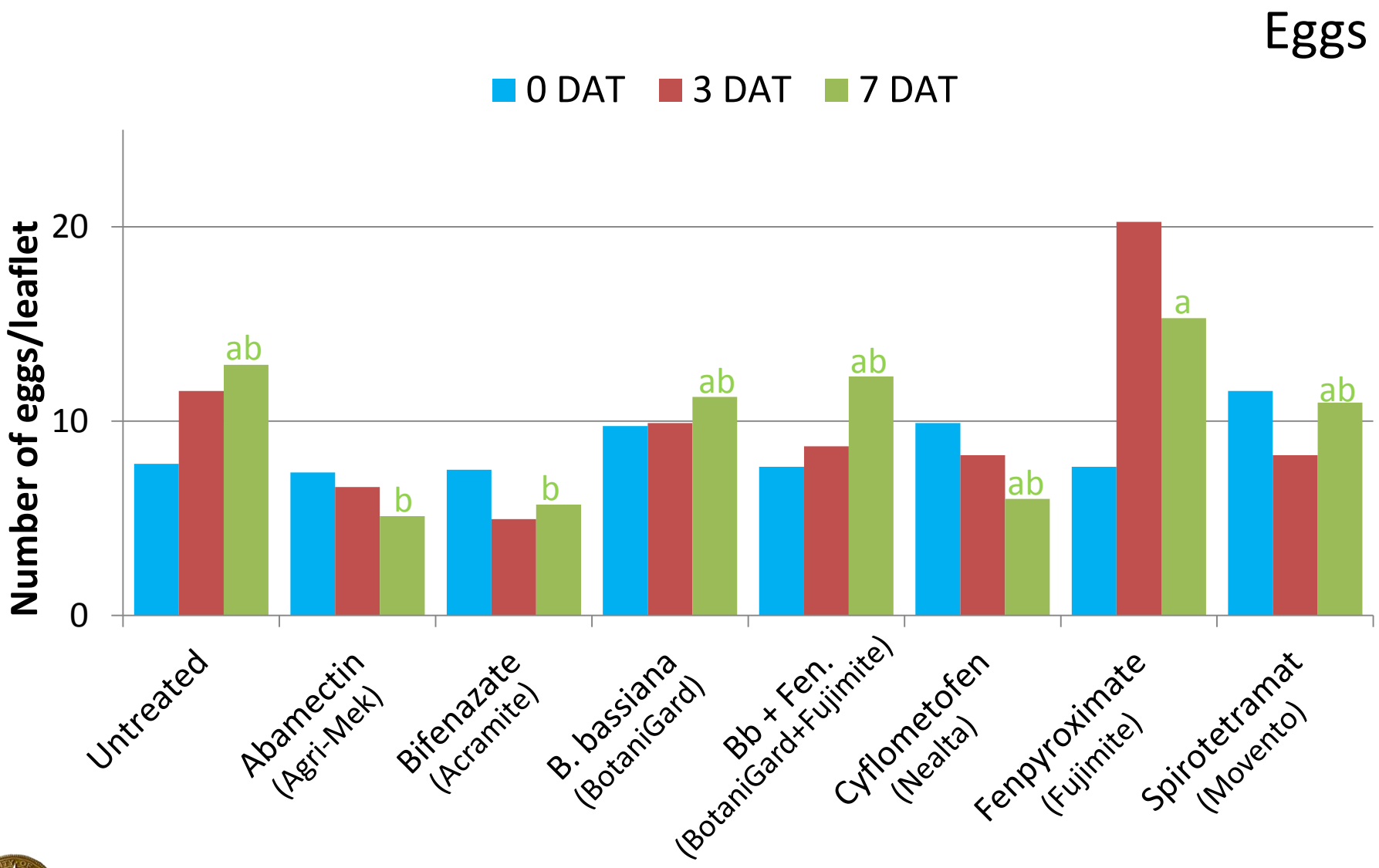
2011 field trial-Second spray



2012 field trial

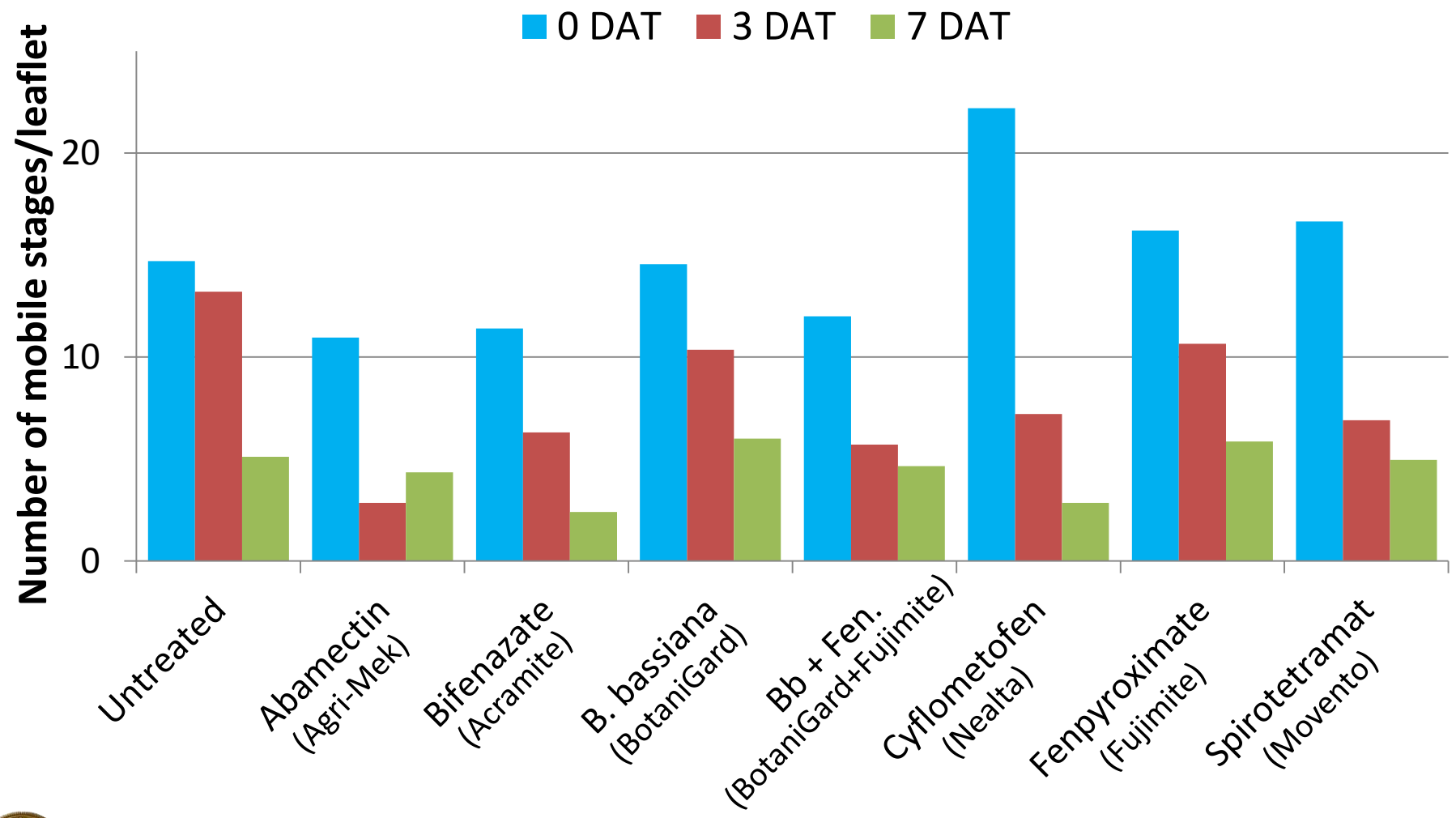
Treatments	1 Untreated
	2 Agri-Mek EC (abamectin) 16 fl oz/ac in 150 gal
	3 Acramite 50 WS (bifenazate) 1 lb/ac in 150 gal
	4 BotaniGard 22WP (*Beauveria bassiana*) 4 lb/ac in 200 gal
	5 BotaniGard 4 lb + Fujimite (fenpyroximate) 2pt in 200 gal
	6 Nealta SC (cyflometofen) 13.7 fl oz/ac in 150 gal
	7 Fujimite 5 EC 2 pt/ac in 150 gal
	8 Movento 240 SC (spirotetramat) 5 fl oz/ac in 150 gal
Plot size	20’ long bed replicated 4 times
Design	Randomized complete block

2012 field trial



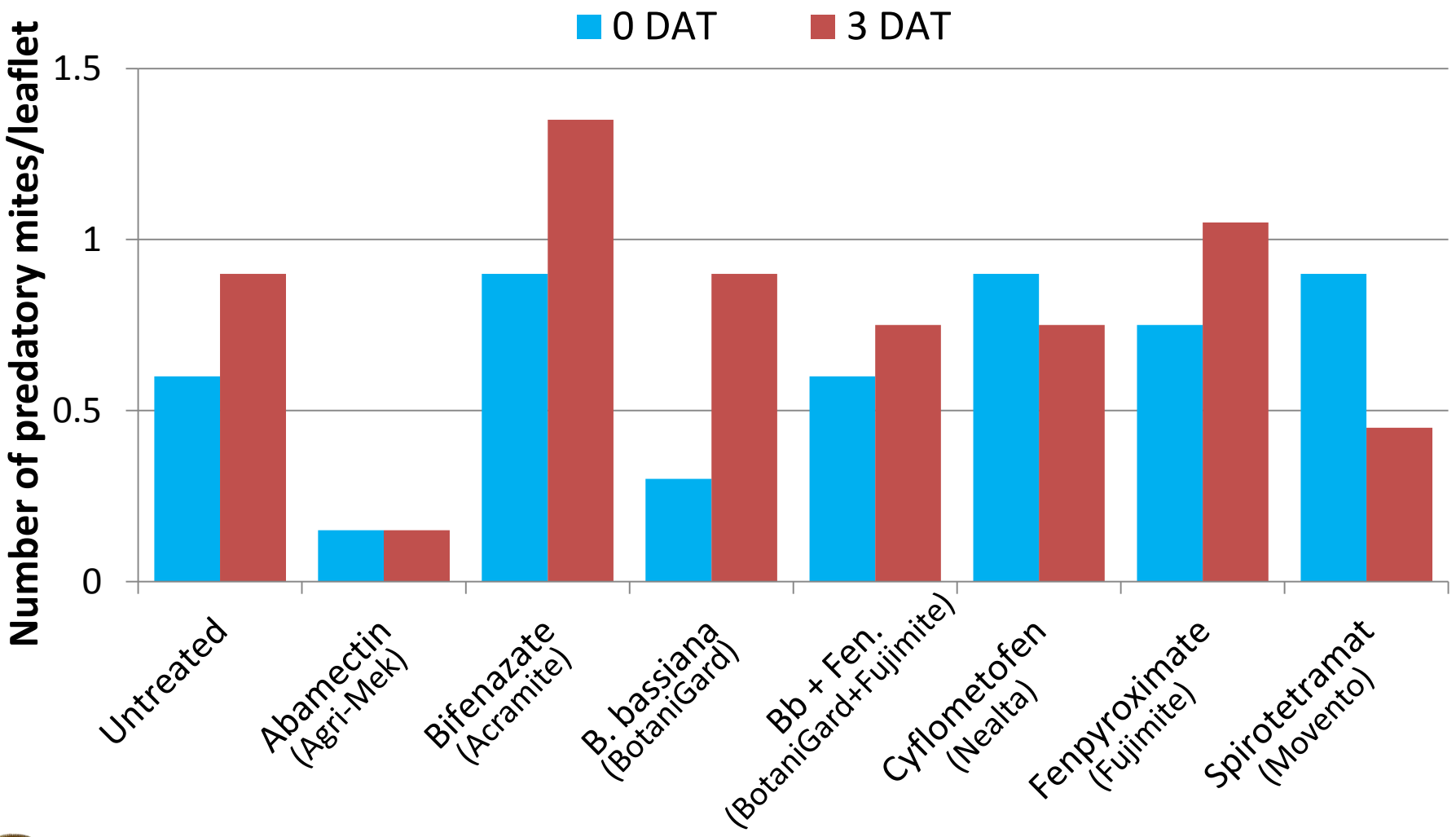
2012 field trial

Nymphs and adults

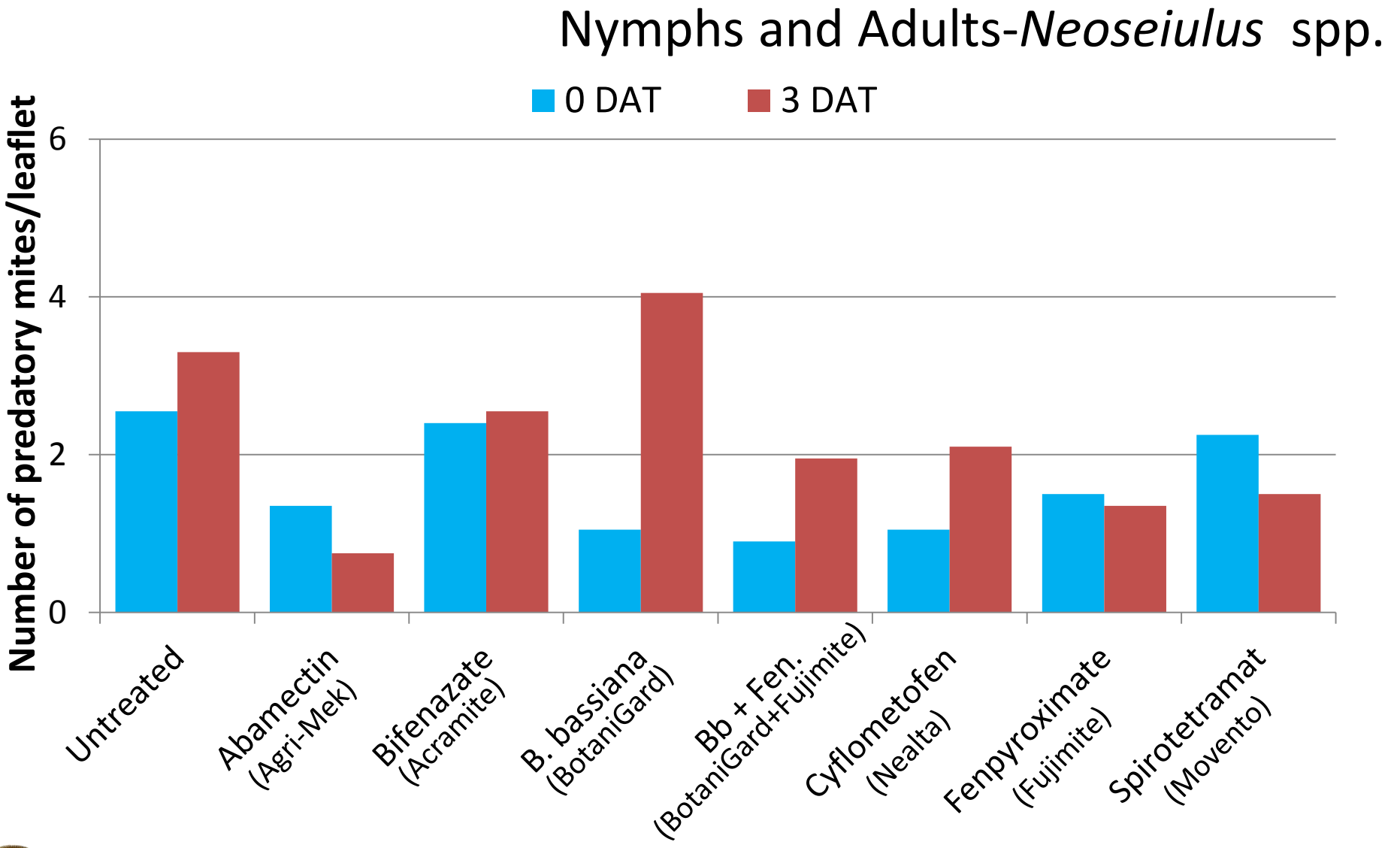


2012 field trial-Predatory mites

Eggs-*Neoseiulus* spp.



2012 field trial-Predatory mites



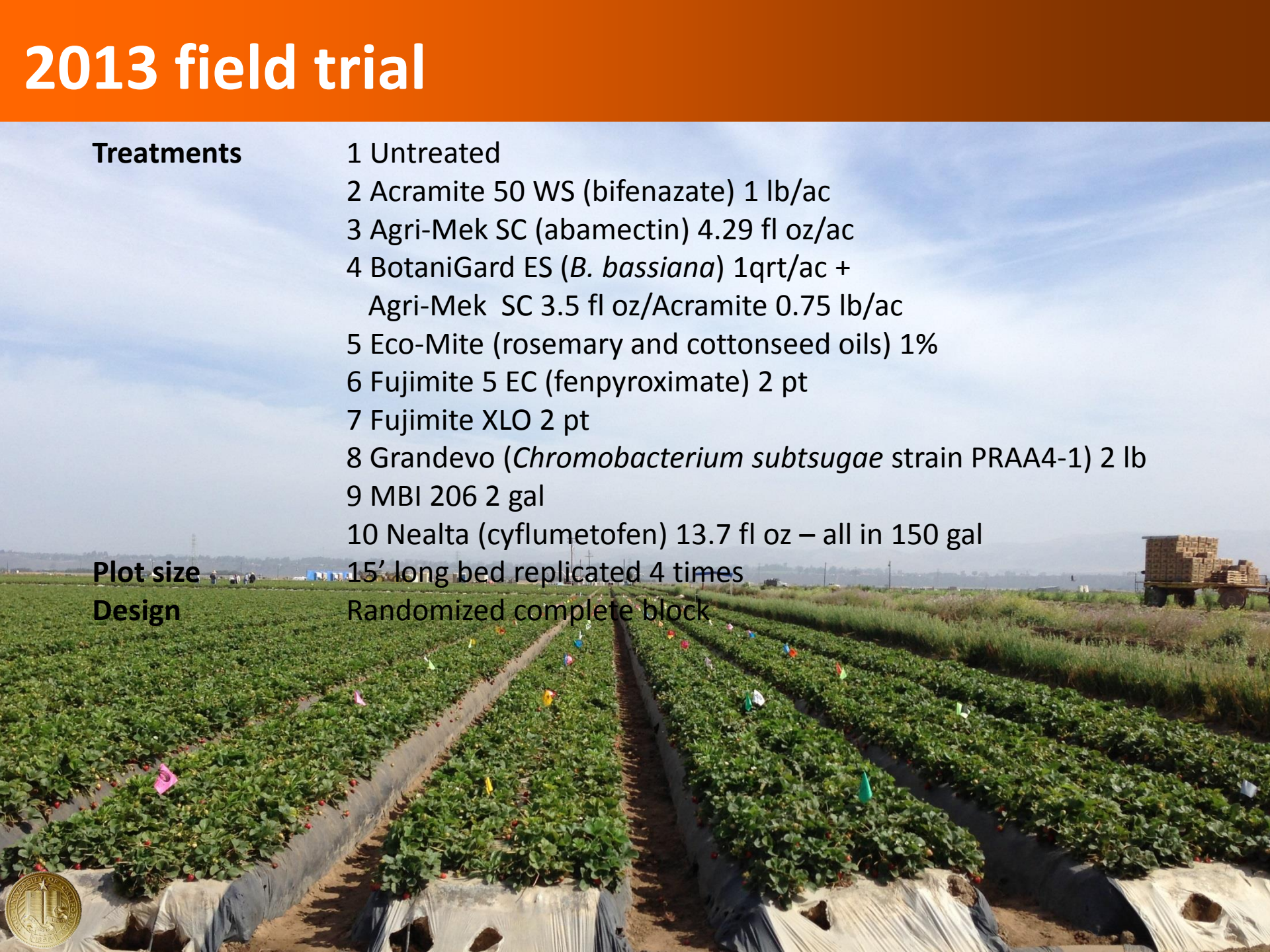
2013 field trial

Treatments

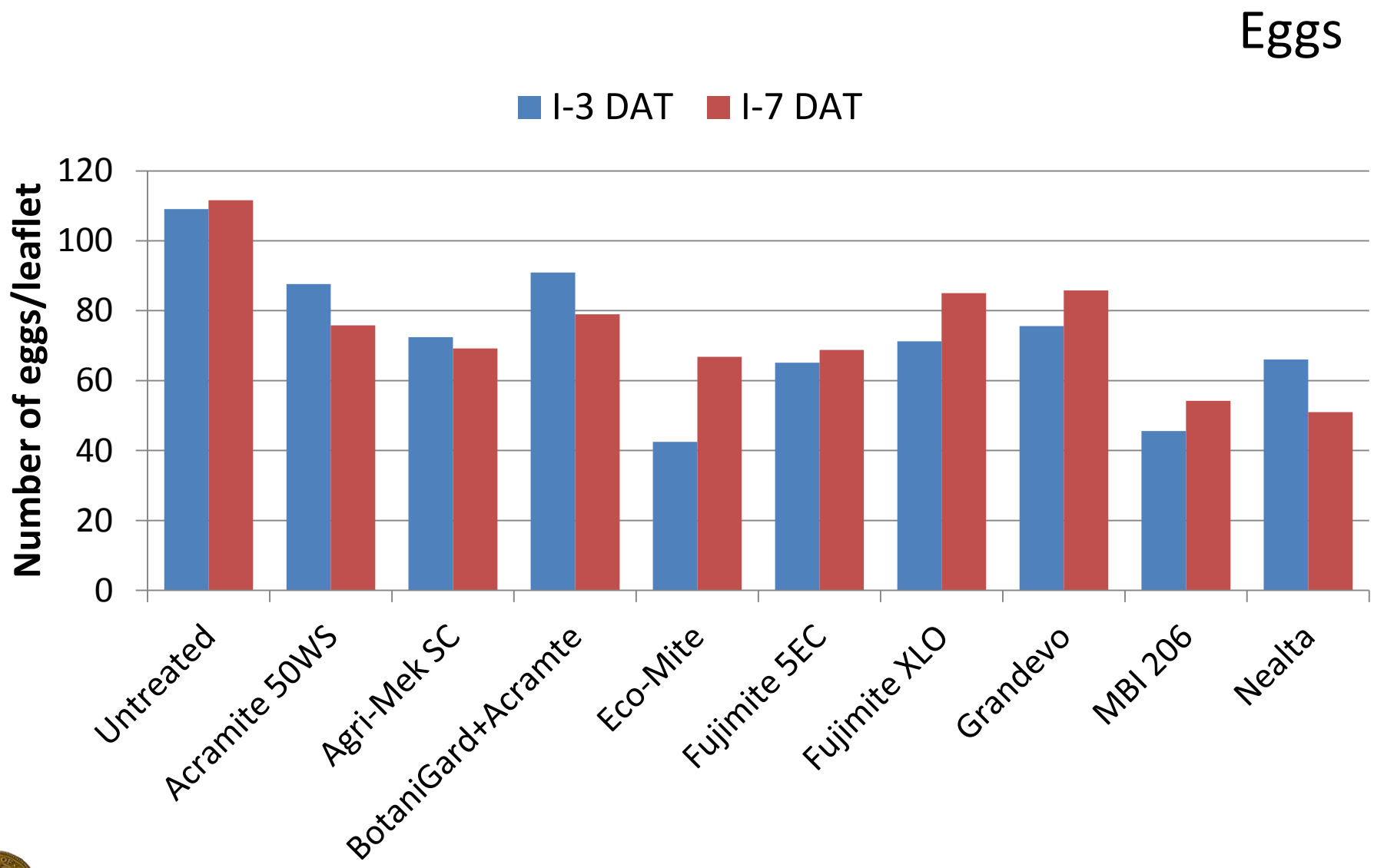
1 Untreated
2 Acramite 50 WS (bifenazate) 1 lb/ac
3 Agri-Mek SC (abamectin) 4.29 fl oz/ac
4 BotaniGard ES (*B. bassiana*) 1qrt/ac +
Agri-Mek SC 3.5 fl oz/Acramite 0.75 lb/ac
5 Eco-Mite (rosemary and cottonseed oils) 1%
6 Fujimite 5 EC (fenpyroximate) 2 pt
7 Fujimite XLO 2 pt
8 Grandevo (*Chromobacterium subtsugae* strain PRAA4-1) 2 lb
9 MBI 206 2 gal
10 Nealta (cyflumetofen) 13.7 fl oz – all in 150 gal

Plot size 15’ long bed replicated 4 times

Design Randomized complete block

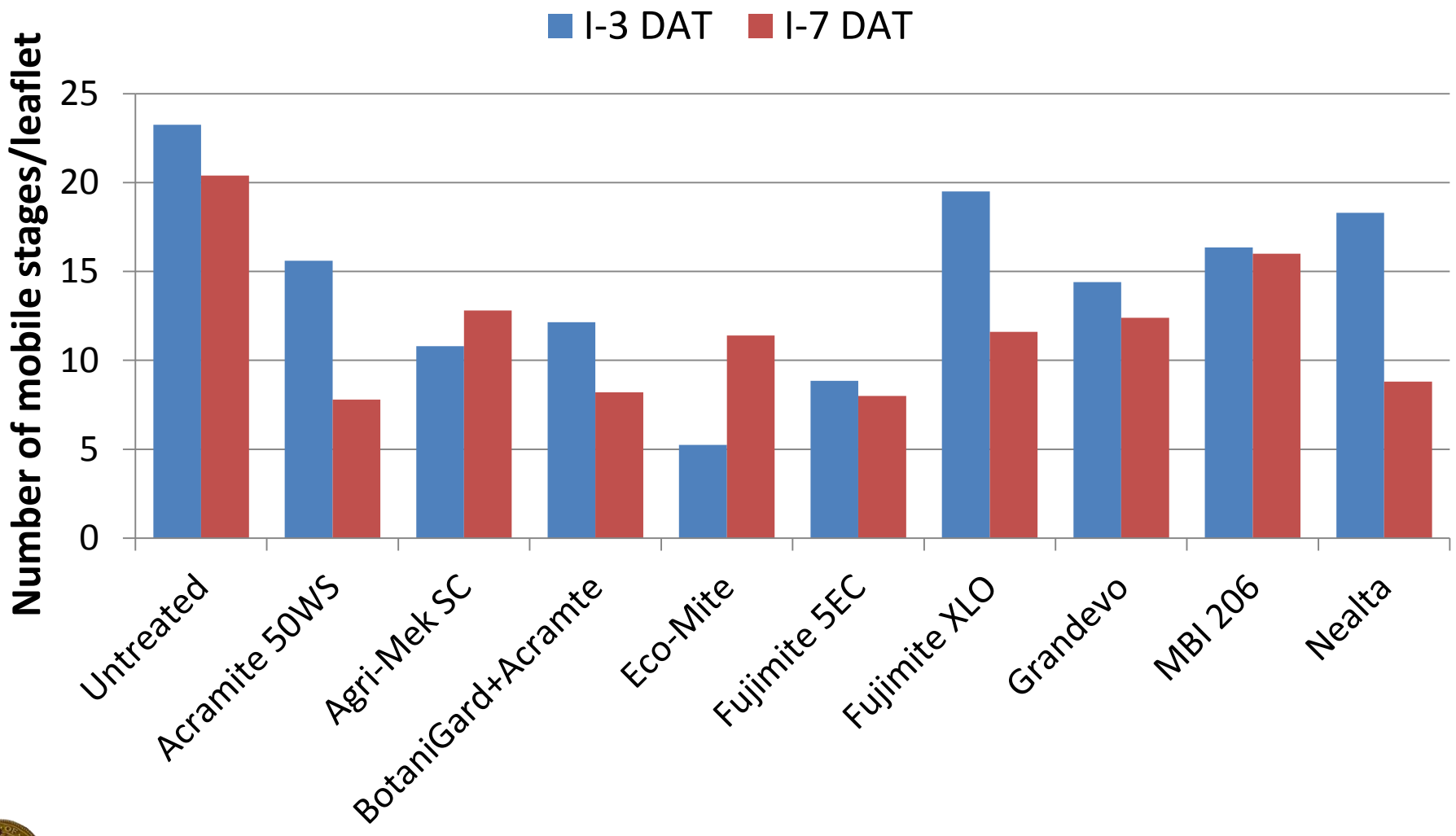


2013 field trial-first spray

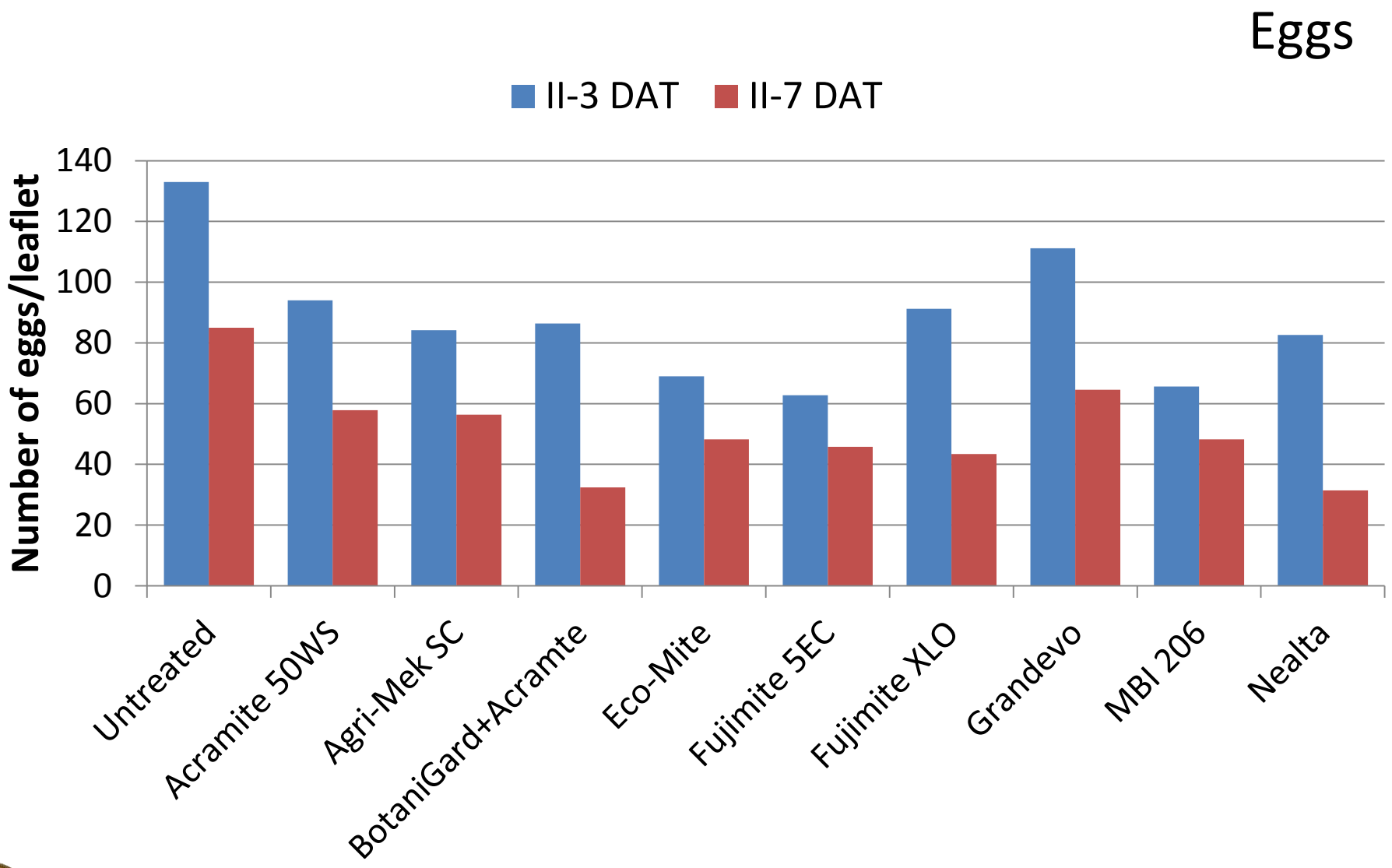


2013 field trial-first spray

Nymphs and adults

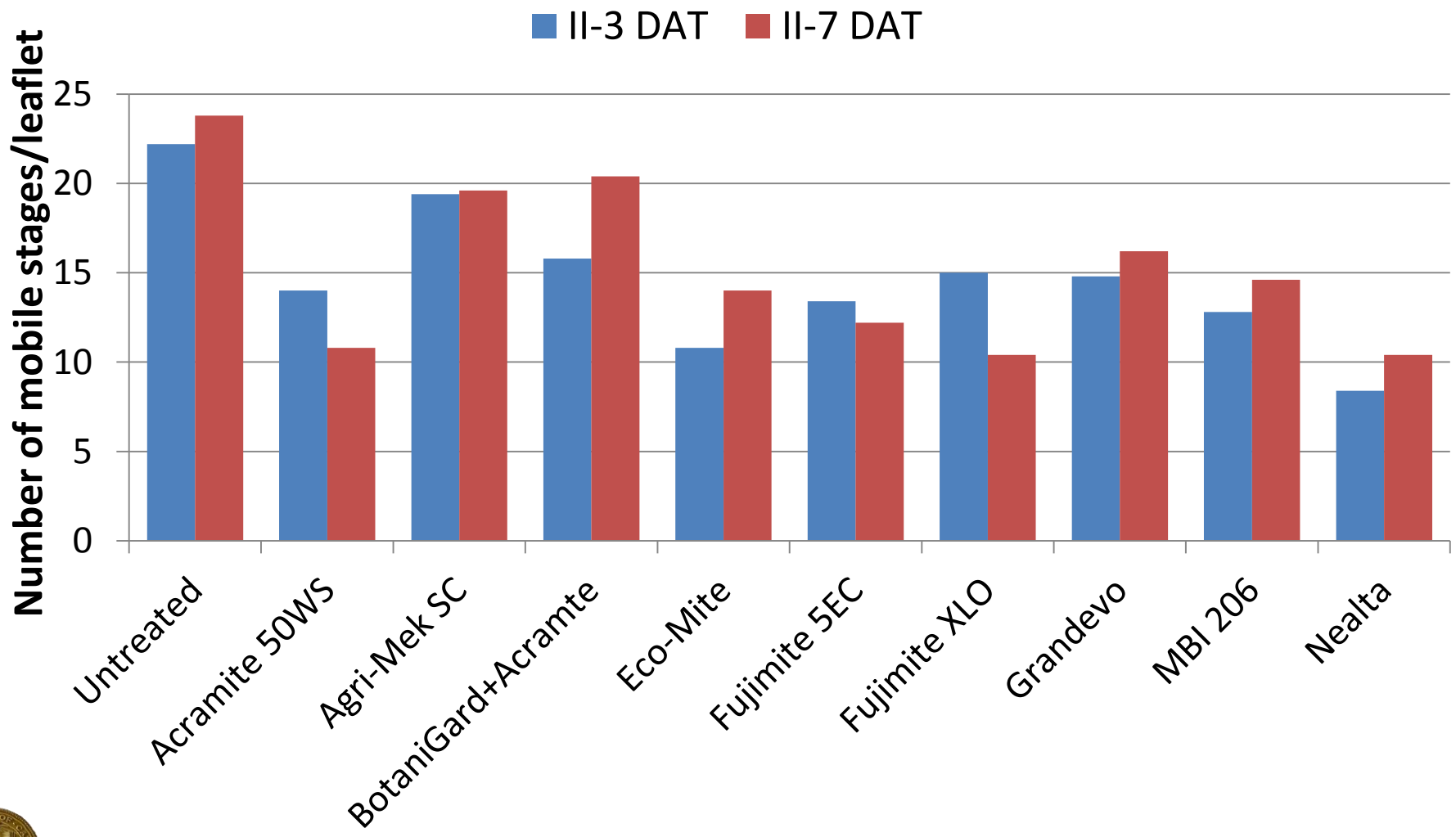


2013 field trial-second spray

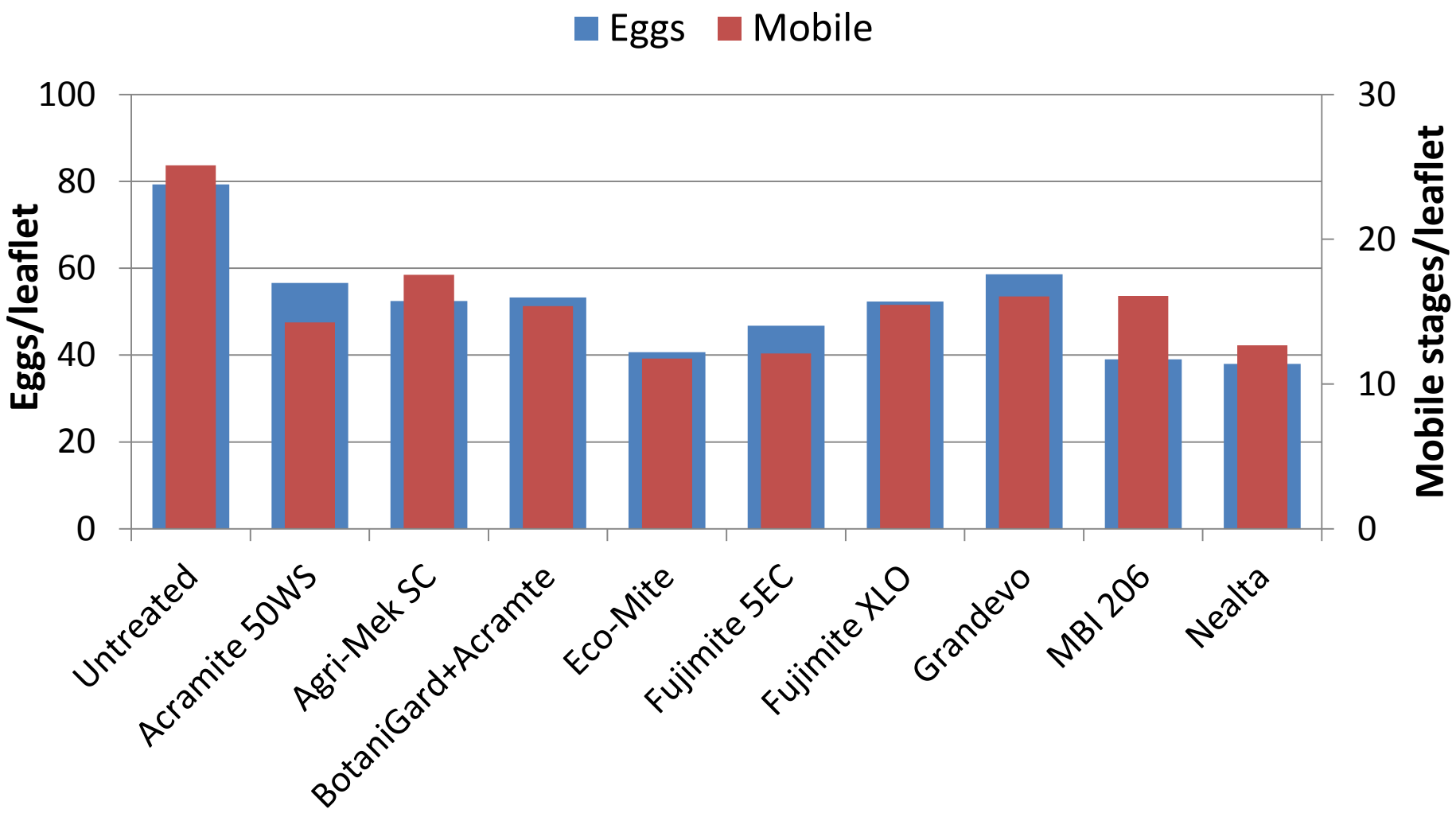


2013 field trial-second spray

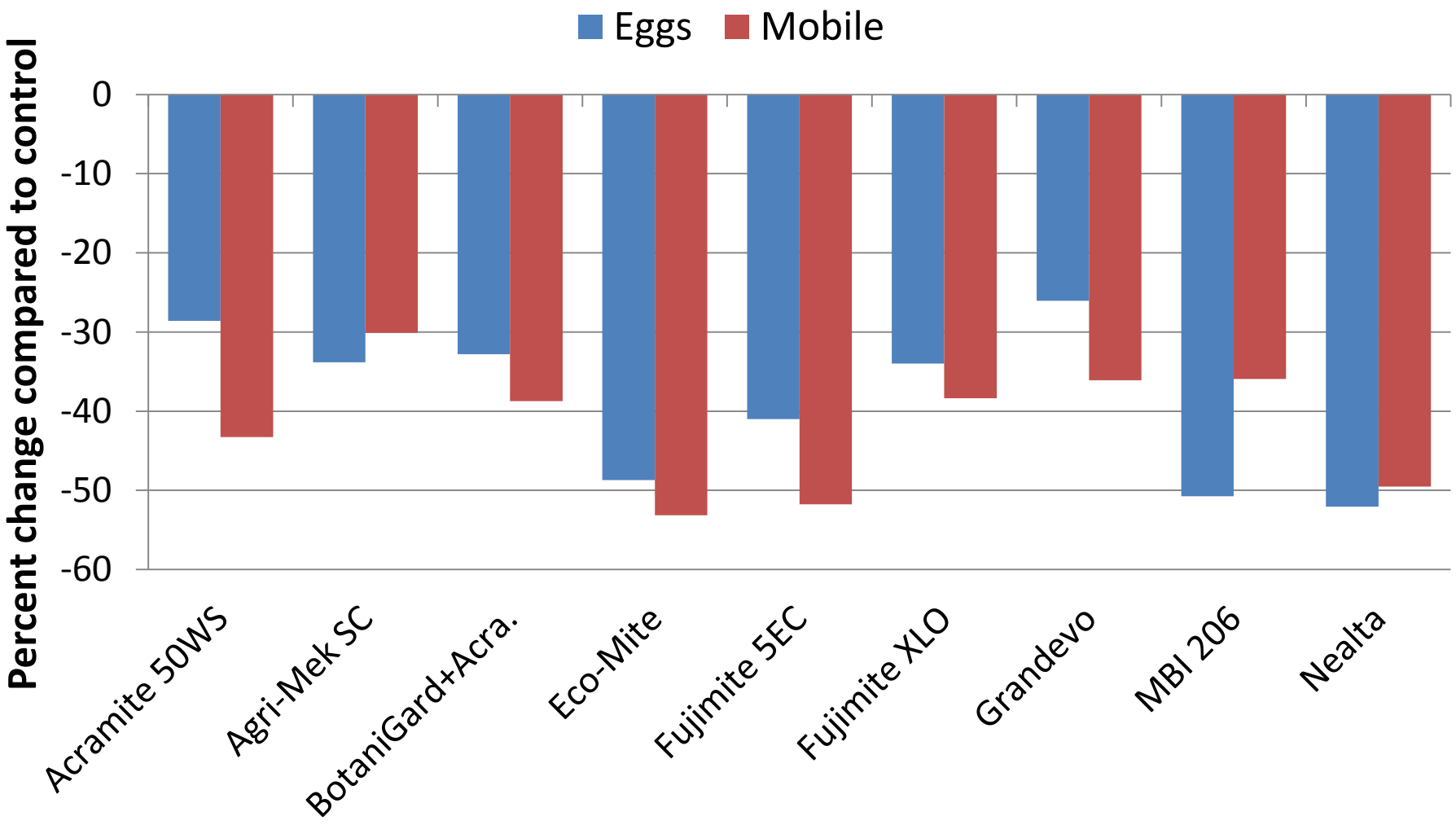
Nymphs and adults



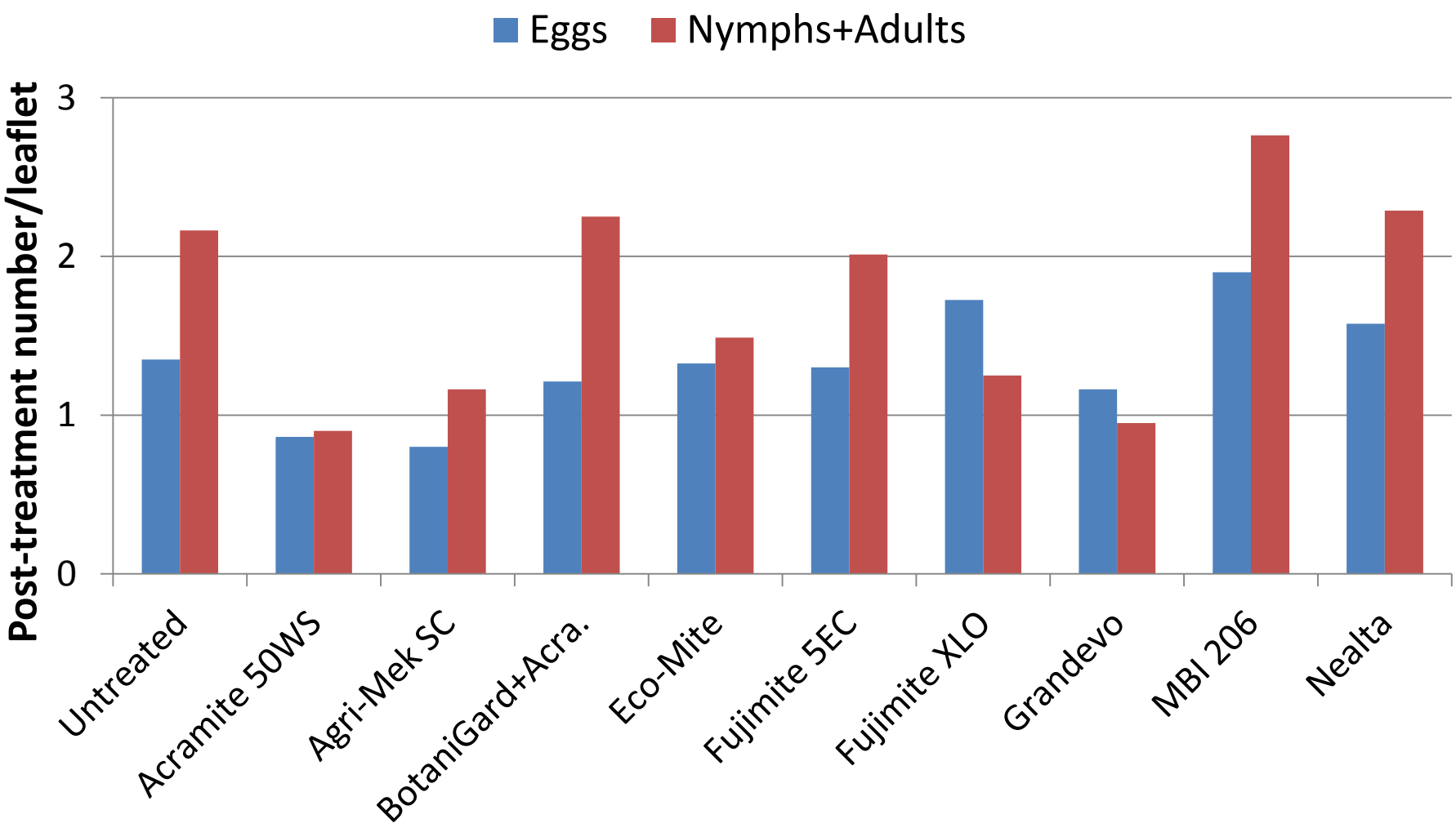
2013 field trial-post-treatment average



2013 field trial-post-treatment average



2013 field trial-Predatory mites



Conclusions

- Some new and existing miticides have good activity against twospotted spider mites.

- Microbial and botanical options have a good potential and comparable to chemical miticides in some instances. They also appear to be safer to predatory mites.

- Consider combinations of reduced rates of chemicals and other options for good IPM

Spider mite management

Regularly monitoring and making right treatment decisions

Adequate chilling, nitrogen and water management for healthy plant growth

Rotating chemicals from different classes

Judiciously using effective chemicals

Conserving natural enemies through dust control and using softer pesticides

Using microbial and botanical pesticides

Releasing predatory mites and proper timing and quantity

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