

Update and Management of the Asian Citrus Psyllid on Orange Jasmine



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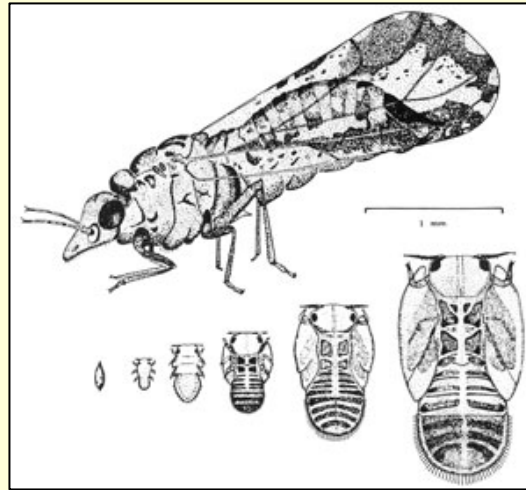
Asian Citrus Psyllid

(*Diaphorina citri*)



- Vectors one of the most serious diseases of citrus (bacteria)
 - Transmission of the bacteria happens within hours
 - Transmission can happen with grafted plants
- Pest of citrus and closely related plants
 - A preferred host is orange jasmine
- Eggs are laid on new flush and hatch in 2-4 days
- Life cycle ranges from 15-47 days
- Females may lay as many as 800 eggs in a lifetime

Asian Citrus Psyllid



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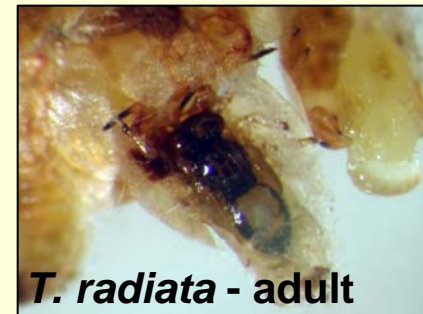




Management in the landscape



- Level of damage in the landscape may not warrant control
 - Plant damage may occur as a result of high populations
 - Moderate leaf distortion and large amounts of honeydew have been observed
 - May cause more severe damage on some citrus
- Numerous predators and parasites
 - Several naturally occurring natural enemies (coccinellids, chrysopids, syrphids)
 - Introduced parasites - *Tamarixia radiata* (Eulophid ectoparasite) and *Diaphorencyrtus aligarhensis* (Encyrtid endoparasite)





Regulatory Status

(as of May 3, 2006)



- Federal restrictions to prevent movement of citrus greening
- FDACS has established quarantine counties and areas
 - Broward, Martin, Miami-Dade, Monroe, Palm Beach Counties and portions of Collier, DeSoto, Hendry, Sarasota, and St. Lucie.
- Movement of nursery plants – compliance agreement
 - Specified treatments and conditions (intra or inter state)
 - No movement to citrus growing states (Alabama, American Samoa, Arizona, California, Guam, Hawaii, Louisiana, Northern Mariana Islands, Puerto Rico, Texas, and the Virgin Islands)
- Movement of citrus greening disease hosts is prohibited outside the quarantine area. *Murraya paniculata* (orange jasmine) is likely to be proven as a host of the disease.

<http://www.doacs.state.fl.us/pi/chrp/greening/citrusgreening.html>



Quarantine Area Insecticide Control



(as of May 3, 2006)

- Compliance agreement for management of the psyllid on ornamental plants in nurseries (as of May 3, 2006)
 - Drench with imidacloprid (Marathon) (30 days prior to shipment)
 - Foliar spray with acetamiprid (TriStar), chlorpyrifos (i.e. Dursban), or fenpropathrin (Tame) (10 days prior to shipping)

Comparison of Insecticides

Control of the Asian Citrus Psyllid

- Test 1 – ornamental insecticides; foliar
- Test 2 – ornamental insecticides; foliar and drench
- Test 3 – agricultural insecticides; foliar (Conducted by J. Pena)
- Host plant – Orange jasmine





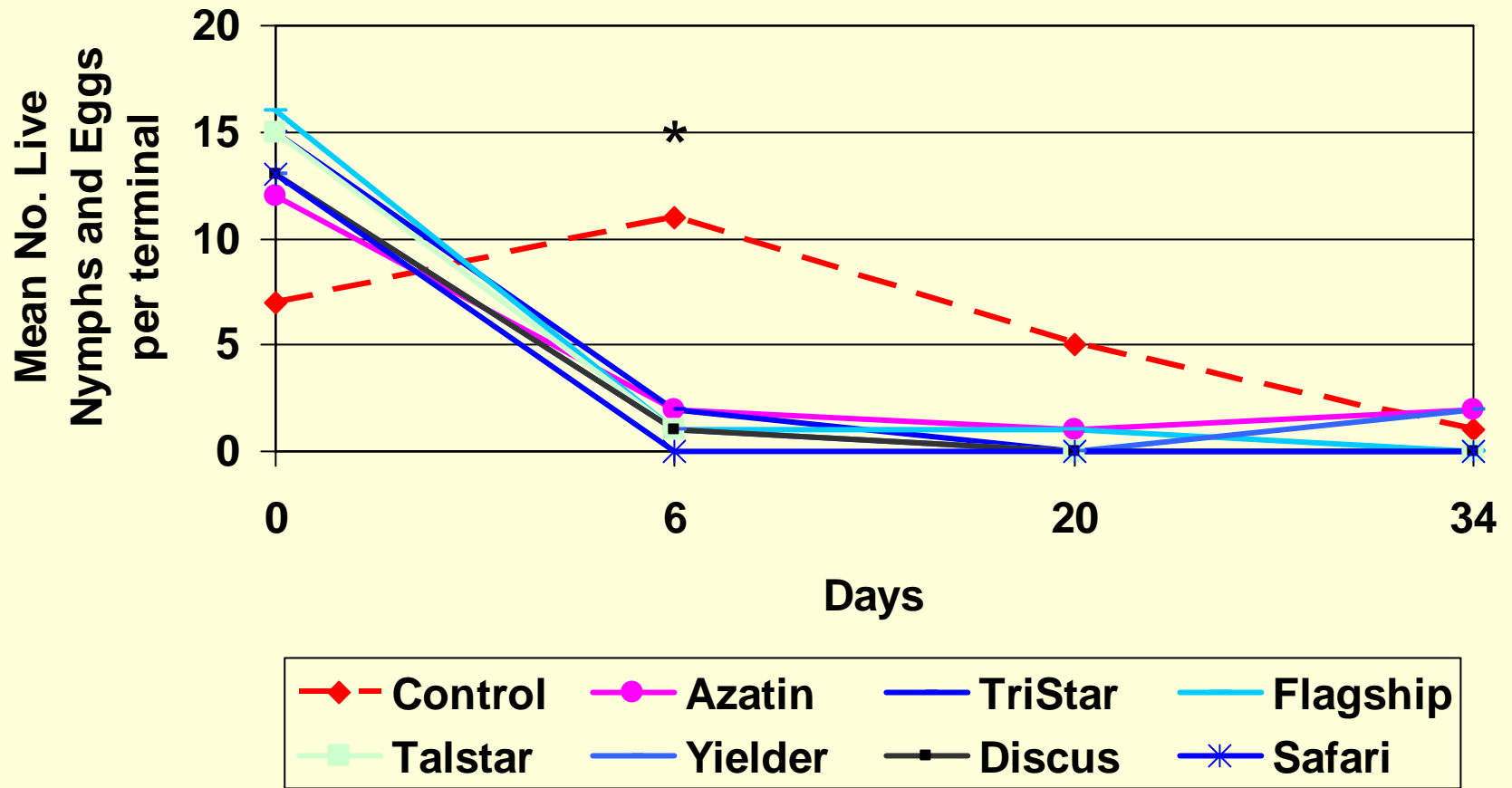
Test 1 - Treatments



Product	AI	Rate	App.
Azatin XL	Azadirachtin	14 oz/100 gal	Foliar
Discus	Imidacloprid + cyfluthrin	25 oz/100 gal	Foliar
Flagship	Thiamethoxam	8 oz/100 gal	Foliar
Safari	Dinotefuran	8 oz/100 gal	Foliar
Talstar	Bifenthrin	20 oz/100gal	Foliar
TriStar (+ Capsil)	Acetameprid	96 g/100 gal	Foliar
Yielder (+ Capsil) (=TriStar 30SG)	Acetameprid	224 g/100 gal	Foliar

Test 1

Asian Citrus Psyllid Control on Orange Jasmine Foliar Application



* Significant difference $P < 0.05$



Test 2 - Treatments

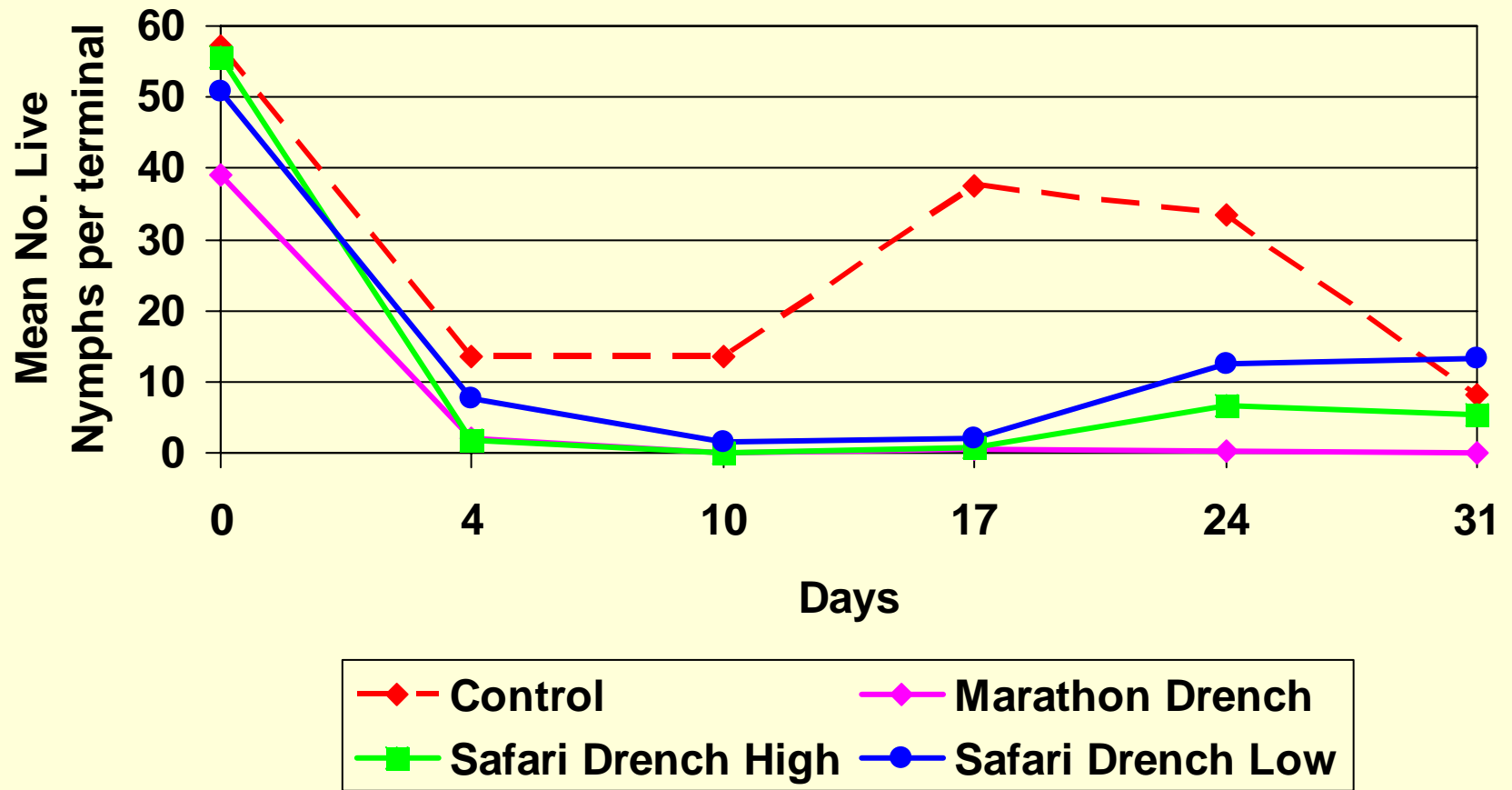


Product	AI	Rate	App.
Allectus	Imidacloprid + bifenthrin	10.7 oz/100 gal	Foliar
Azatin	Azadirachtin	14 oz/100 gal	Foliar
Deltagard T&O	Deltamethrin	8 oz/100 gal	Foliar
Discus	Imidacloprid + cyfluthrin	25 oz/100 gal	Foliar
Judo	Spiromesifen	2 and 4 oz/100 gal	Foliar
Flagship	Thiamethoxam	8 oz/100 gal	Foliar
Marathon II	Imidacloprid	1.7 oz/100 gal	Foliar
Marathon II	Imidacloprid	6 ml/cm diam	Drench
Safari	Dinotefuran	8 oz/100 gal	Foliar
Safari	Dinotefuran	12 and 24 oz/100 gal	Drench
Tempo Ultra	Cyfluthrin	5.4 oz/100 gal	Foliar
Talstar	Bifenthrin	20 oz/100gal	Foliar
TriStar (+ Capsil)	Acetameprid	96 g/100 gal	Foliar
Yielder (+ Capsil) (=TriStar 30SG)	Acetameprid	224 g/100 gal	Foliar

Test 2

Asian Citrus Psyllid Control on Orange Jasmine

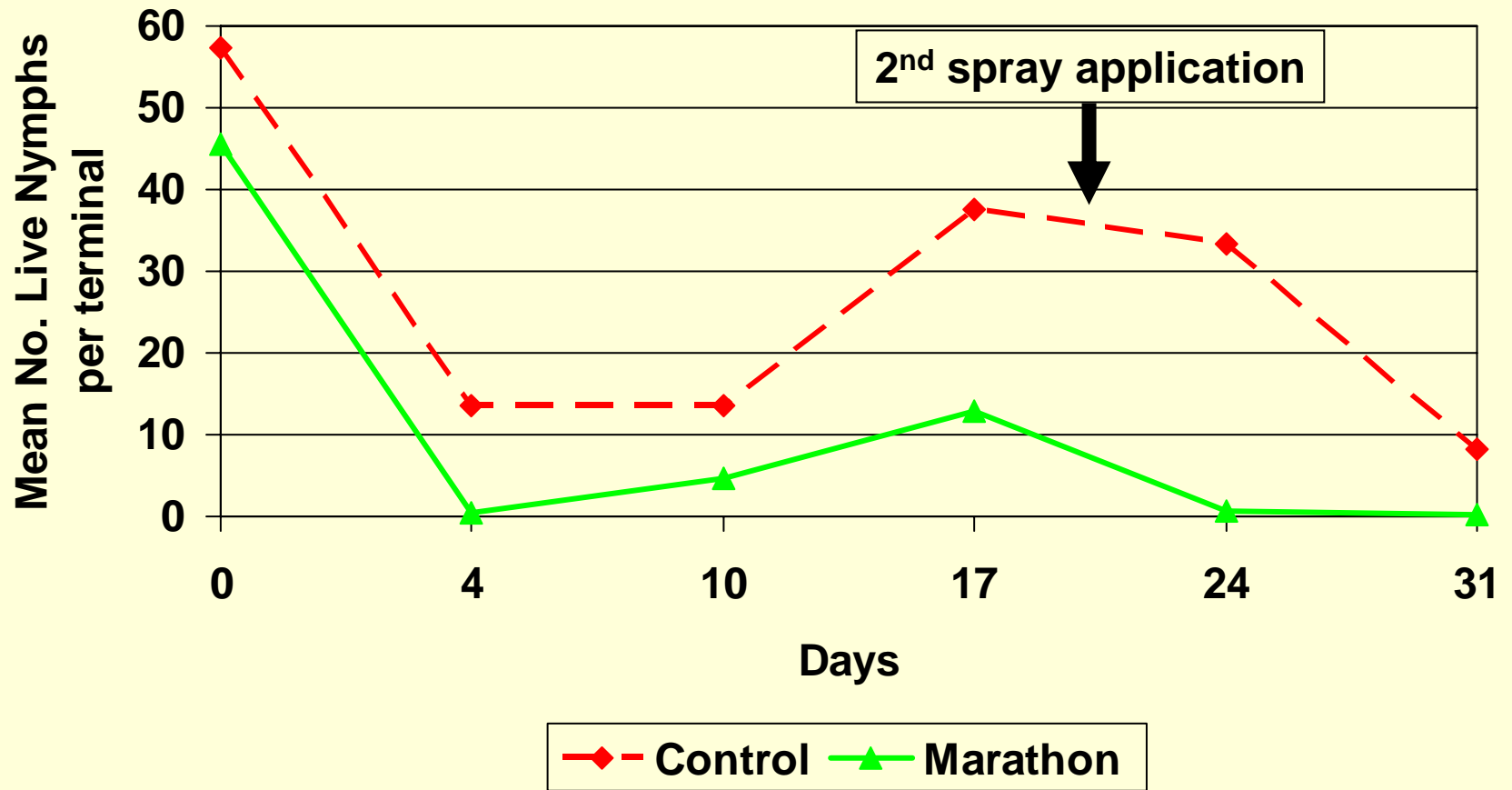
MoA Group 4A - Drench Application



Test 2

Asian Citrus Psyllid Control on Orange Jasmine

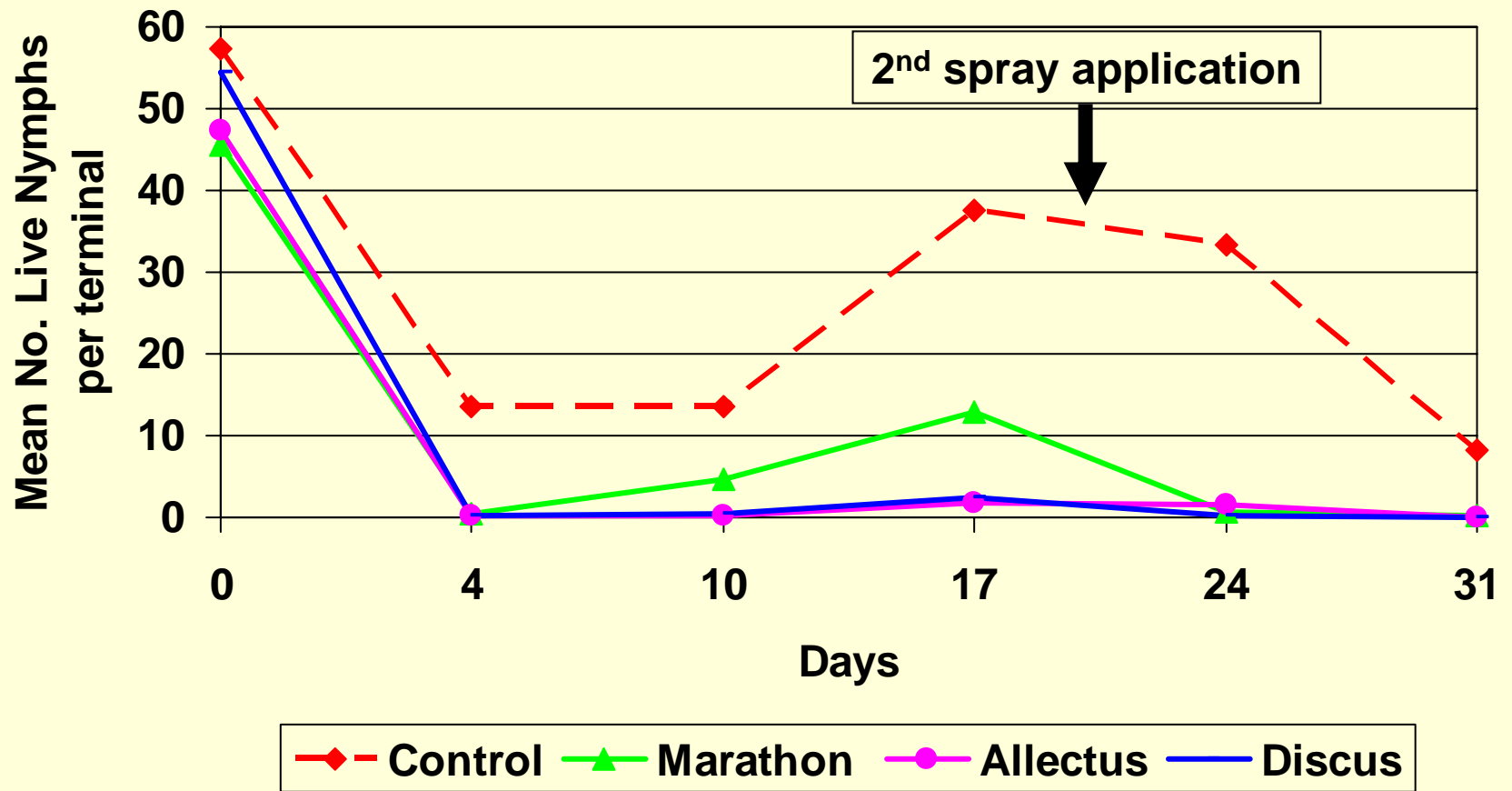
MoA Group 4A - Foliar Application



Test 2

Asian Citrus Psyllid Control on Orange Jasmine

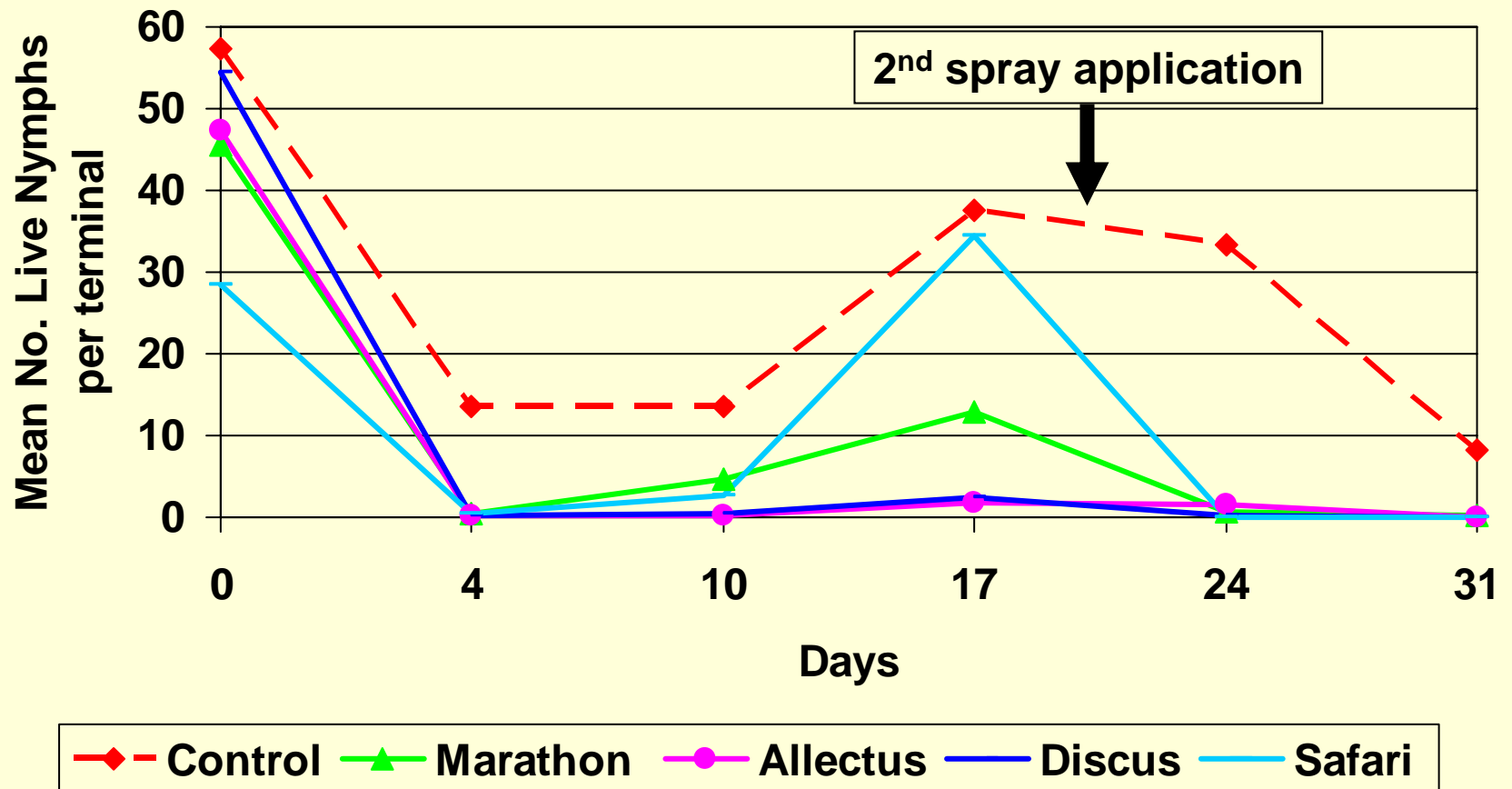
MoA Group 4A - Foliar Application



Test 2

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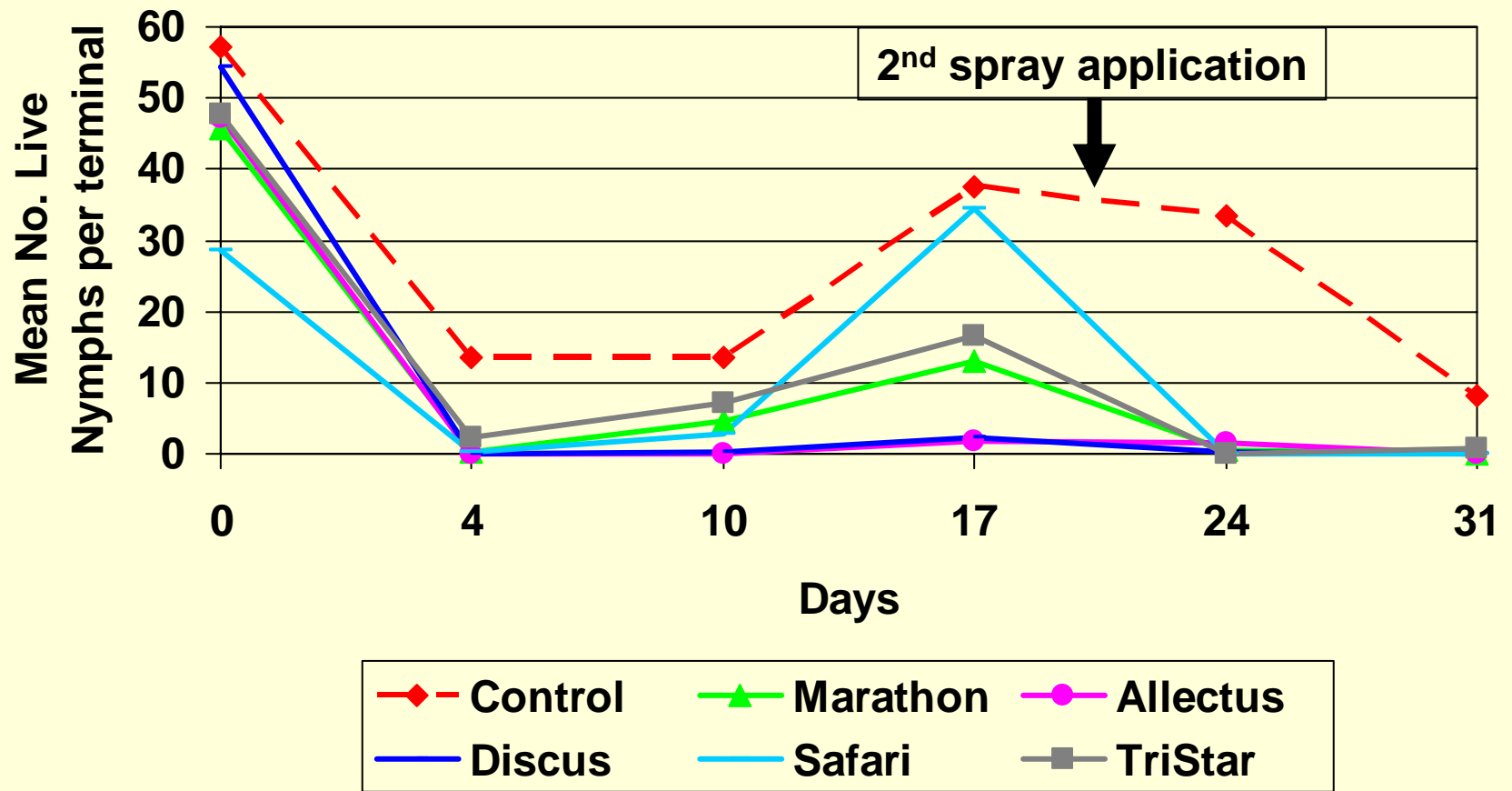
MoA Group 4A - Foliar Application



Test 2

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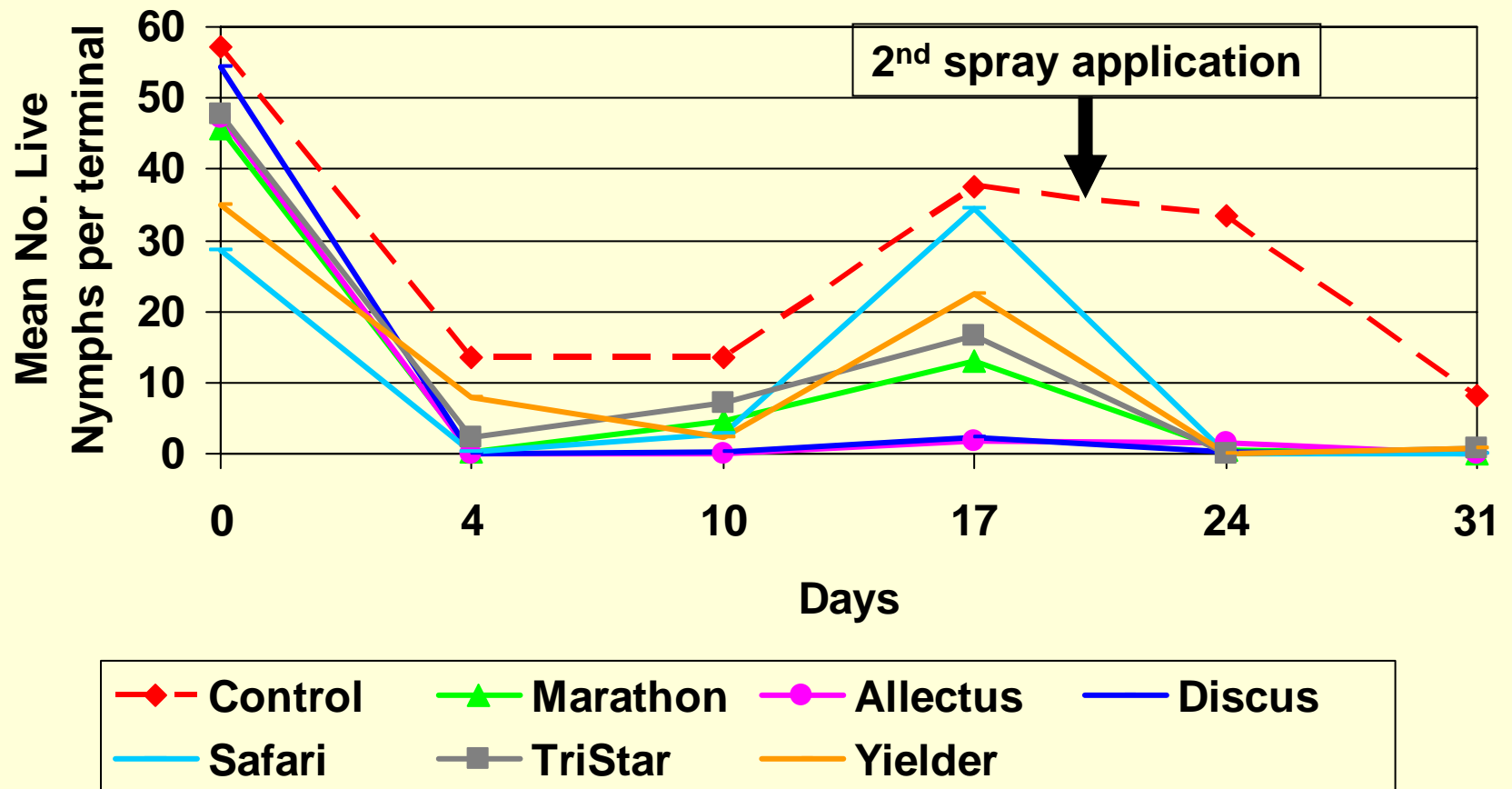
MoA Group 4A - Foliar Application



Test 2

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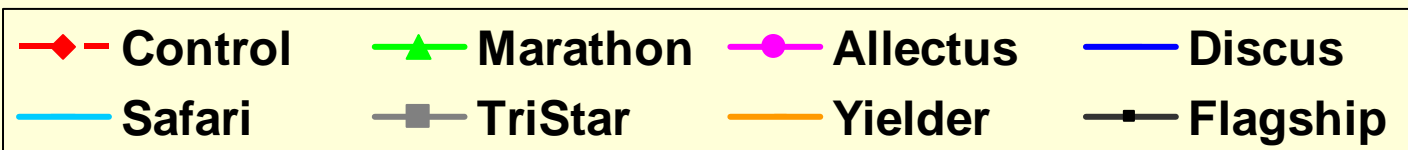
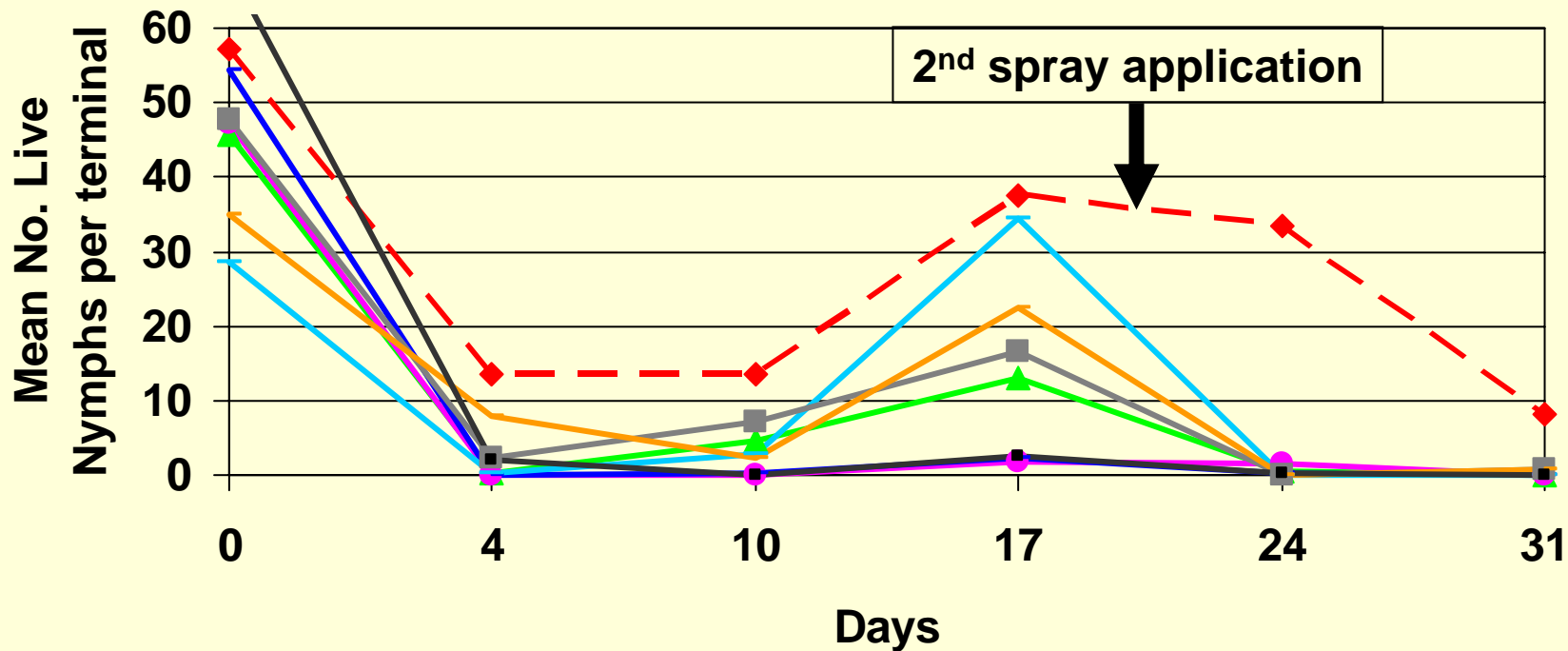
MoA Group 4A - Foliar Application



Test 2

Asian Citrus Psyllid Control on Orange Jasmine

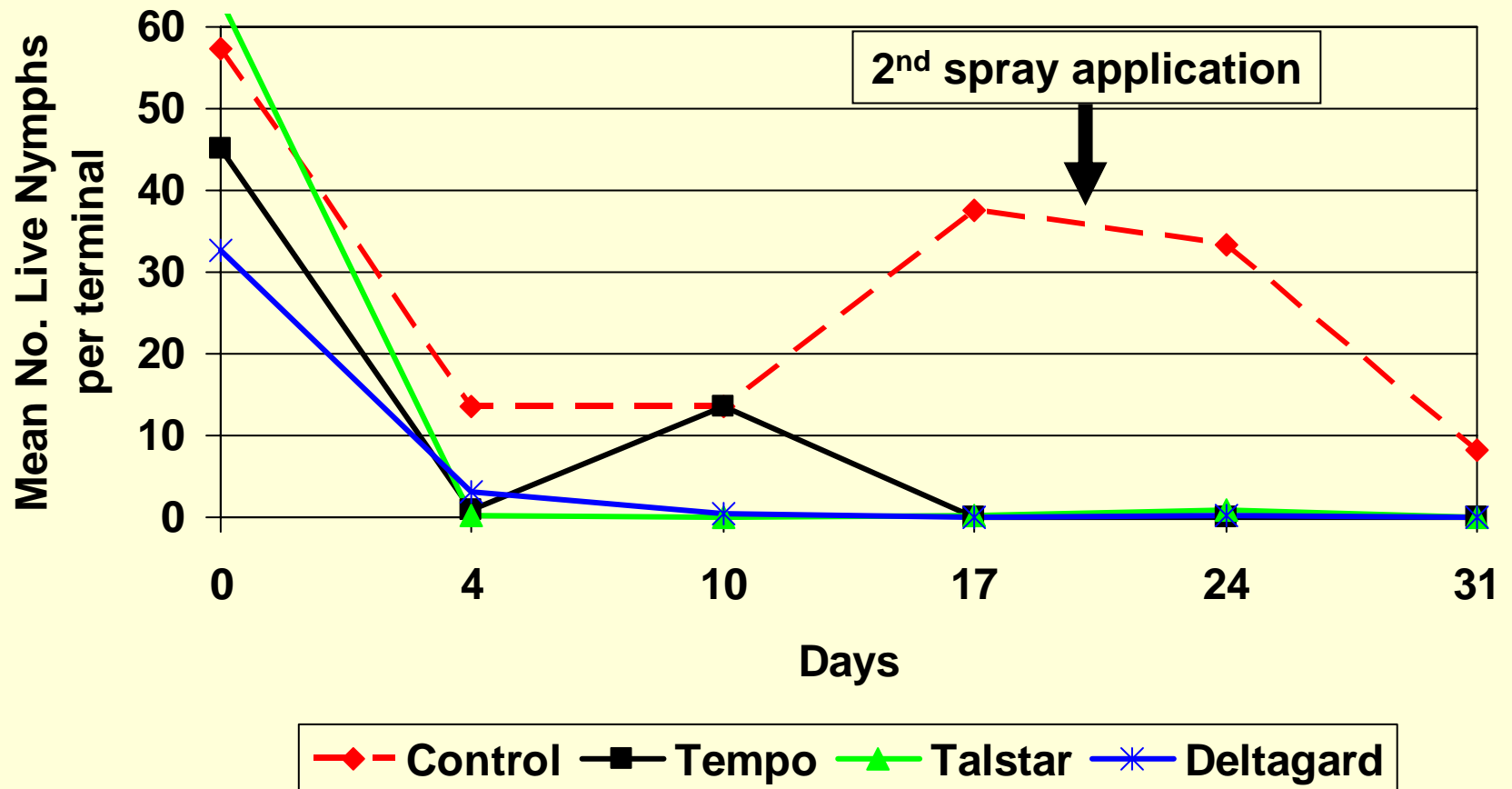
MoA Group 4A - Foliar Application



Test 2

Asian Citrus Psyllid Control on Orange Jasmine

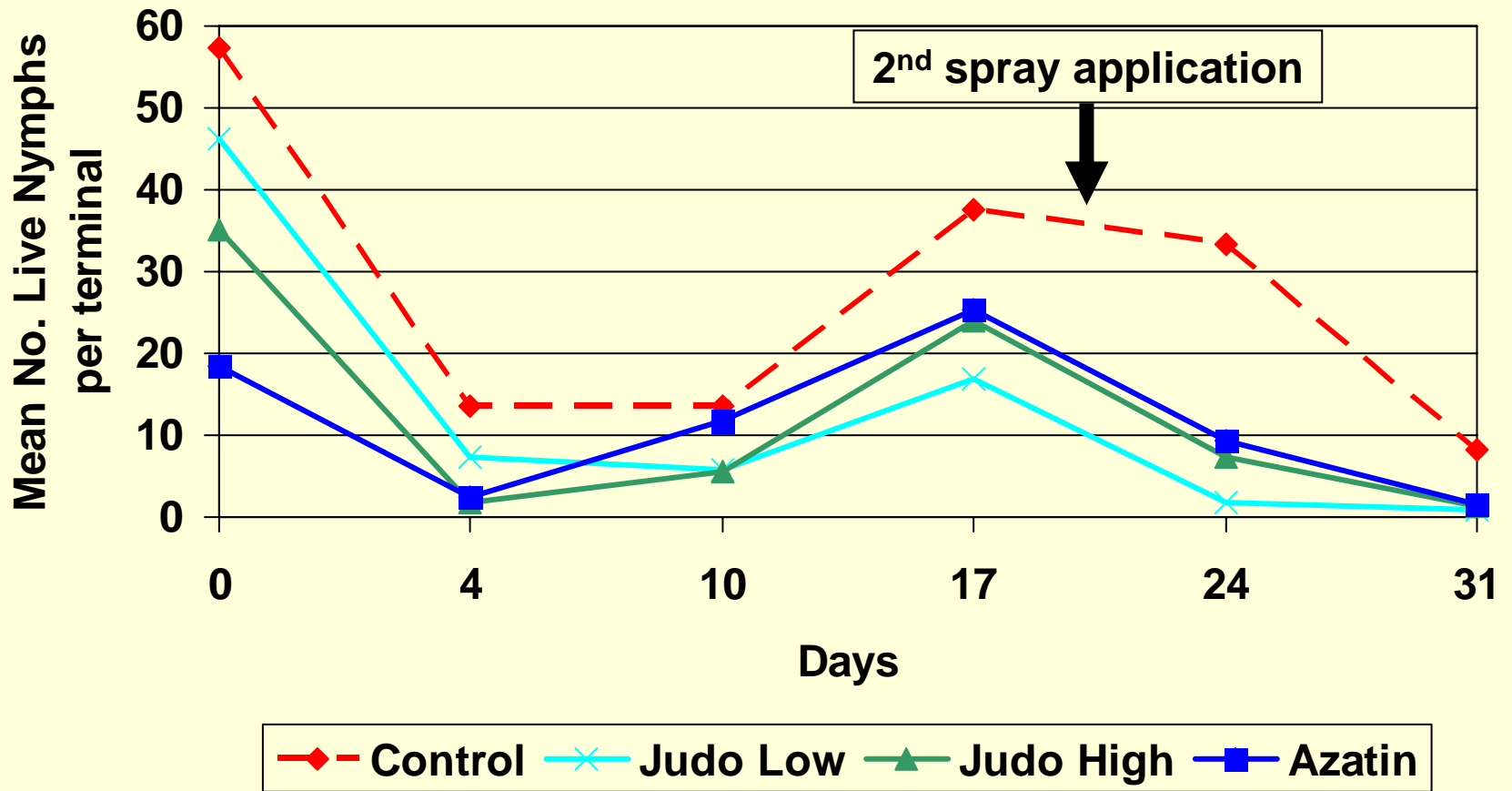
MoA Group 3 - Foliar Application



Test 2

Asian Citrus Psyllid Control on Orange Jasimine

MoA Groups 18B and 23 - Foliar Application



Test 3 - Treatments

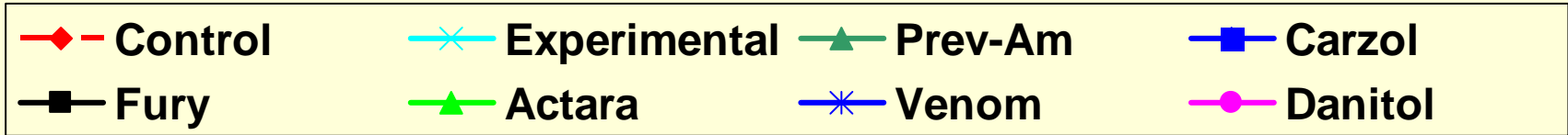
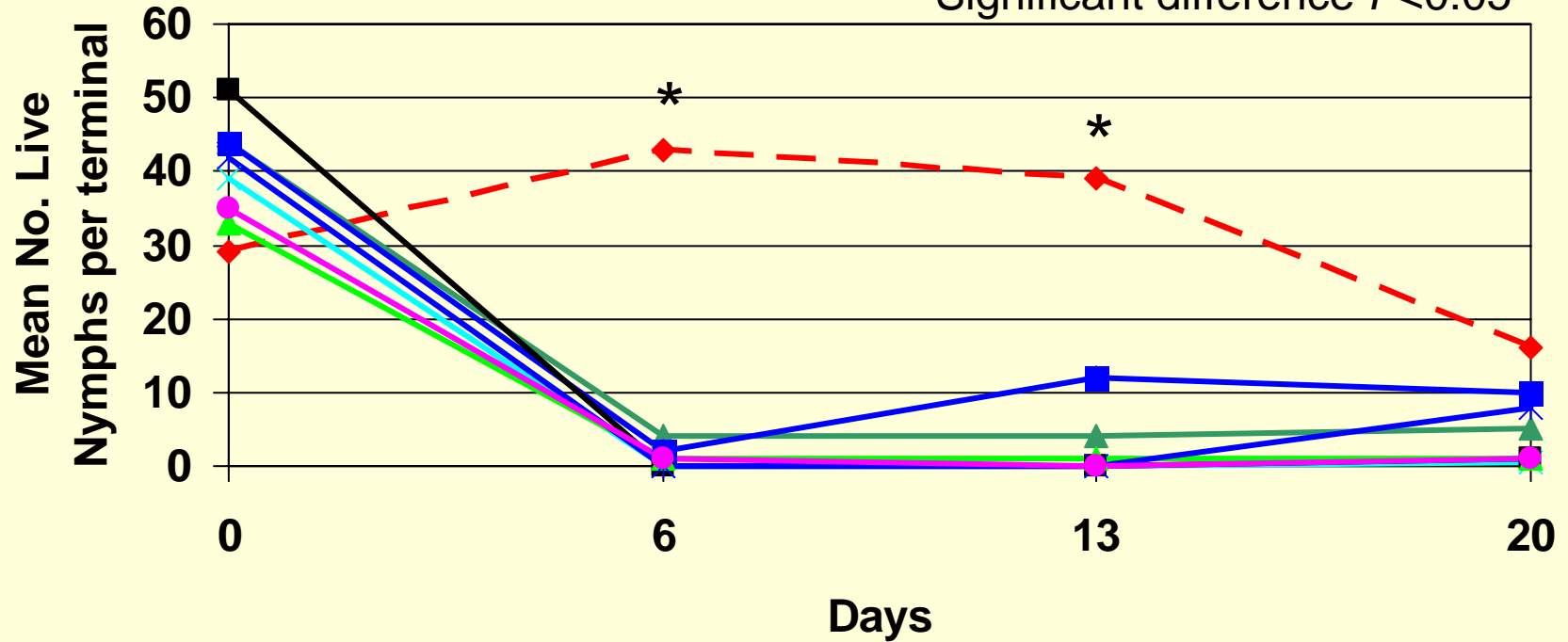
Product	AI	Rate	App.
Actara 25WG	Thiamethoxam	4 oz/100 gal	Foliar
Carzol SP	Formetanate hydrochloride	20 oz/100 gal	Foliar
Danitol 2.4 EC	Fenpropathrin	51 oz/100 gal	Foliar
Fury 1.5 EC	Zeta-cypermethrin	8 oz/100 gal	Foliar
Prev-Am	Sodium tetraborohydrate	64 oz/100 gal	Foliar
Venom 20 SG	Dinotefuran	14 oz/100 gal	Foliar
Experimental + Citrus Oil	--	6 oz/100 gal	Foliar

Test 3

Asian Citrus Psyllid Control on Orange Jasimine

Foliar Application - Ag Labels

* Significant difference $P < 0.05$





Management of the Asian Citrus Psyllid



- Most of the ornamental and agricultural products tested provided good to excellent control
 - Ornamental labels: Allectus (landscape), Azatin, Deltagard, Discus, Flagship, Judo, Marathon, Safari, Talstar, Tempo, TriStar (Best results: Drench – Marathon; Foliar – Discus; Allectus, Flagship, Talstar, Deltagard)
 - Agricultural labels: Actara, Carzol, Danitol, Fury, Prev-Am, Venom, Experimental (Best results: Actara, Danitol, Fury, Experimental)
- Several choices for management of the psyllid in more than one type of mode of action (important for insecticide resistance)
- Use products that are less detrimental to natural enemies
- Reservoir of psyllids in the landscape