Comparison of Four Trap and Lure Combinations to Monitor Consperse Stink Bug in Pears

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Design

- 4 treatment combinations
  - traps: APT Pyramid, Aldrich double-cone
  - lures: APT IPM Lure, Trece Pherocon
- 4 orchards (3 pear, 1 apple)
- RCBD, 3 reps per orchard


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9/8
9/13
9/19
10-12-2
10-18-2
10-27-2

Trapping Methods

- Traps placed in late May (late due to rain)
- Placed 2nd row in from edge, down row, 25’ apart
- Double-cone in tree crotch, pyramid anchored to ground with rebar
- Checked weekly, CSB removed
- Lures changed every 45 days

Orchard #3, Kelseyville, Lake County

Additional Methods

- Beating tray samples, 50 trees in transect across orchard
- Visual observations for CSB, damage
- Bin damage in relation to trap trees (2 orchards)
- Zalom-Cullen °D model (biofix May 26)
  - peak nymphal presence (1-3 instars) @ 590°D

Consperse Stink Bug Trap & Lure Combinations

Orchard #1, Kelseyville, Lake County - 2005

Trap + Lure	Total CSB/Season[1] (avg./3 reps)	
Pyramid + APT	56.3	A
Double-Cone + APT	42.7	B
Double-Cone + Trece	9.7	C
Pyramid + Trece	2.3	D

Transformed means separated by Tukey HSD, p=.05 (actual p=.0006)

[1] Danitol applied for CSB 7/18/05

Consperse Stink Bug Trap & Lure Combinations

Orchard # 2, Kelseyville, Lake County - 2005

Trap + Lure	Total CSB/Season
Pyramid + APT	84.7 A
Double-Cone + APT	27.0 B
Pyramid + Trece	14.3 C
Double-Cone + APT	9.0 D

(actual p=.0010)

Consperse Stink Bug Trap & Lure Combinations

Orchard # 3, Kelseyville, Lake County - 2005

Trap + Lure	Total CSB/Season
Double-Cone + APT	62.0 A
Pyramid + APT	20.0 B
Pyramid + Trece	2.6 C
Double-Cone + Trece	3.3 D

(actual p=.0007)

Consperse Stink Bug Trap & Lure Combinations

Orchard # 4 (apples), Lakeport, Lake County - 2005

Trap + Lure	**Total CSB/Season[1] (avg./3 reps)**
Double-Cone + APT	5.7
Pyramid + APT	1.7
Pyramid + Trece	0.7
Double-Cone + Trece	0.3
	NS

[1]Danitol applied for boxelder bug 6/7/05

Consperse Stink Bug Trap & Lure Combinations

All Orchards Combined, Kelseyville, Lake County - 2005

Trap + Lure	**Total CSB/Season (n=12)**	
Pyramid + APT	41	A
Double-Cone + APT	34	A
Double-Cone + Trece	5	B
Pyramid + Trece	5	B

(actual p=.0001)

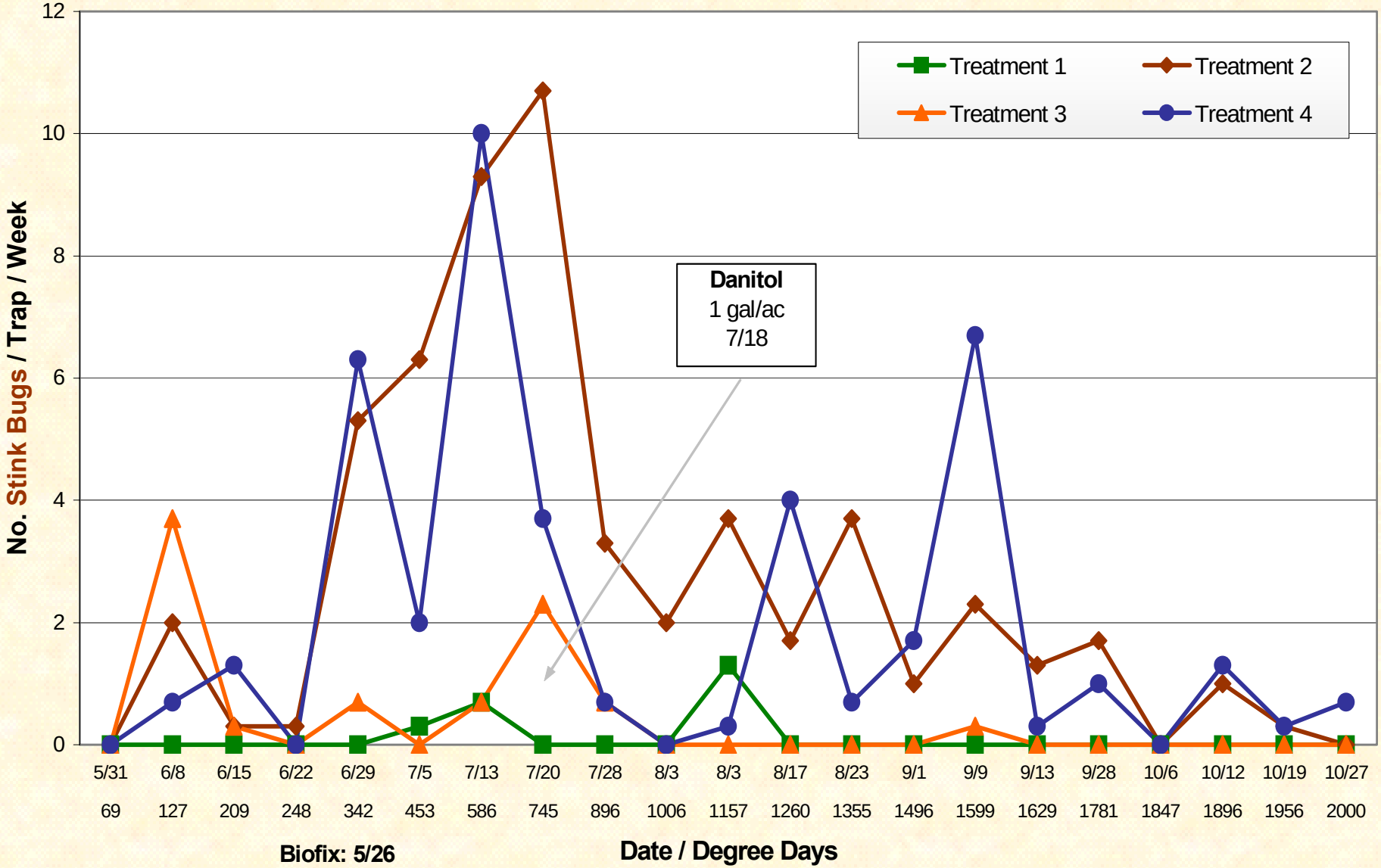
Separation of Trap versus Lure Type

	F-Ratio (n=24)	P-Value	LS mean	
Pyramid	.01	0.94	22.8	A
Double-Cone	-----	-----	19.7	A
APT	28.62	0.0000	37.4	A
Trece	-----	-----	5.2	B
Block	NS	>>.05	------	----

(Transformed means separated by Tukeys HSD, p=.05)

2005 Stink Bug Trap Catches
Weekly Average of 3 Traps
Orchard # 1, Kelseyville, Lake County

Treatment 1: Cone + Trece lure
Treatment 2: Cone + APT lure
Treatment 3: Jar + Trece lure
Treatment 4: Jar + APT lure



Damage Gradient Away From Traps
Orchard #1, Kelseyville, Lake County

Damage Gradient Away From Traps

Orchard #1, Kelseyville August 29, 2005

No. Rows from Trap	Damage (%/200 fruit)
Trap Row	23, 25, 28.5
1-2	
East	20,23,7.5*,2.5*,15
West	14
*>8 trees south of traps	
3-4	
East	-----
West	8,7
4-5	
East	13
West	-----
6-7	
East	19.5
West	3.5
≥8	
East	-----
West	2.0 (edge row)

Conclusions

- No significant difference between trap types
- Very highly significant difference between lure types
- Damage worst in trap trees, decreases with distance from traps
- Model coincided relatively well with peak CSB catches in two orchards (sprayed June 13-20)

2006 Plans

- Deploy traps by late March
- Place double cone traps with APT lures outside and inside orchard
- Monitor to determine if populations (and damage) can be directed outside the orchard
- Continue to run the Zalom-Cullen model
- Continue visual observation, damage counts (earlier biofix)
- No beating trays (poor results for 3 years)

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