

# **Altacor vs. Delegate which should go first in pear pest management?**

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# Standard Methods

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- Toxicity & Longevity trials
  - 5 treatments replicated 4 times
  - Applied using hand-held orchard sprayer at 200 gal/ac
  - Applied at 1B timing (5/22) and 2A timing (6/26)

# Standard Methods: Treatments

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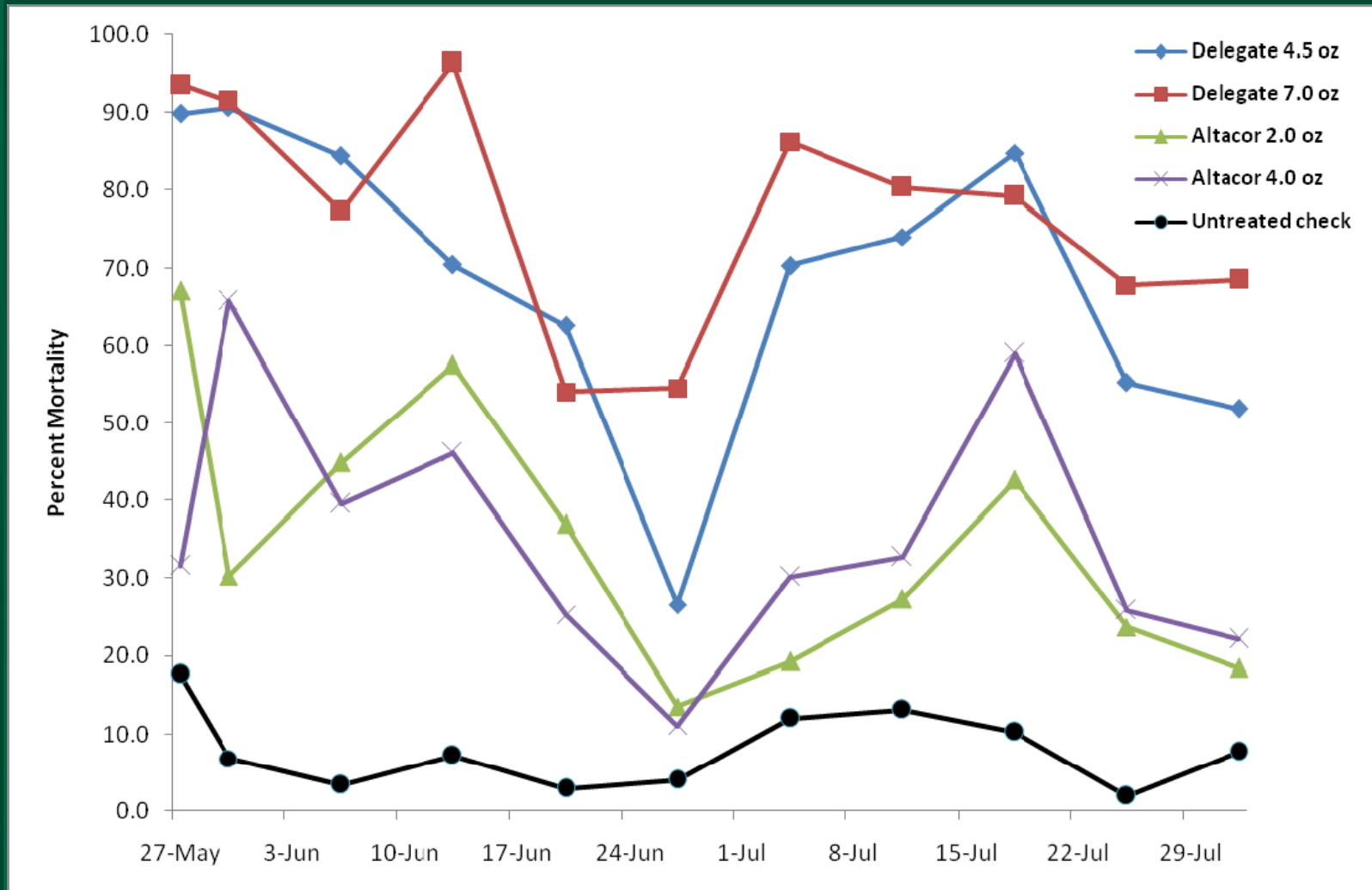
- CM Treatments
  - Delegate at 4.5 oz/ac applied at 1B & 2A
  - Delegate at 7.0 oz/ac applied at 1B & 2A
  - Altacor at 2.0 oz/ac applied at 1B & 2A
  - Altacor at 4.0 oz/ac applied at 1B & 2A
  - Untreated Check

# Evaluation Procedures

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- Treatments assessed weekly  
27 May-1 Aug
- Two capsules (containing 2 neonate CM larvae) were attached to the pear
- 13 fruit were infested per replicate
- Mortality determined after 24 hrs

# Mean CM Larval Mortality Over Time



# Conclusions

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- Delegate had significantly greater larval mortality compared to Altacor
- Delegate provided 21 days of control
- Little rate difference with either Delegate or Altacor

# Standard Methods: Altacor Ovicide Study

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- Altacor applied to apple halves prior to and after oviposition by dipping or spraying
- Applied 20 ppm prior to, 100 ppm after oviposition
- Applied using Potter spray tower

# Standard Methods: Altacor Ovicide Study

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- Min. of 10 eggs per fruit
- Apples held at 25°C with photoperiod 18:6 (L:D)
- Mortality determined after 6 days



# CM Insecticides

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Application Method	Rate/Form	Mean Mortality	
		Altacor	Control
Dip Before	20 ppm	59.7 b	13.0 a
Dip After	100 ppm	44.1 b	9.2 a
Spray Before	20 ppm	58.5 b	9.0 a
Spray After	100 ppm	42.7 b	14.3 a

# Conclusions:

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- Altacor is an effective ovicide.
- Maximum efficacy achieved with application prior to oviposition
- Similar mortalities achieved at 20 ppm prior and 100 ppm after oviposition.

# Standard Methods - Field Trial

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- CM Trials in Fairfield
  - 6 treatments replicated 4 times
  - Applied using hand-held orchard sprayer at 200 gal/ac
  - Applied at 1A & 1B timing (4/22 & 5/22) and 2A & 2B timing (6/26 & 7/17)

# Standard Methods: Treatments

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- CM Treatments
  - Delegate at 4.5 & 7.0 oz/ac applied 1A & 1B, Altacor at 2.0 & 4.0 oz/ac applied 2A & 2B
  - Altacor at 2.0 & 4.0 oz/ac applied 1A & 1B, Delegate at 4.5 & 7.0 oz/ac applied 2A & 2B

# Standard Methods: Treatments

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- CM Treatments
  - Grower Standard (Warrior II + Agri-Mek, Warrior II + Assail, Warrior II + Assail, Imidan)
  - Untreated Check

# CM Evaluation

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- Control of 1<sup>st</sup> gen on 8 Jun  
(125 fruit/rep)
- Control at harvest 5 Aug  
(250 fruit/rep)

# Secondary Pest Evaluation

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- Twospotted Spider Mites & Pear Psylla
  - 10 exterior & 10 interior leaves per week
  - Weekly examinations: 1<sup>st</sup> June to 27<sup>th</sup> July
  - Brushed and counted under magnification (20X)

# CM Insecticides

Treatment	lb(AI)/ac	No. Appl.	% Infestation
Delegate 25WG	4.5 oz	2	0.4 a
Altacor 35 WG	2.0 oz	2	
Delegate 25WG	7.0 oz	2	0.4 a
Altacor 35WG	4.0 oz	2	
Altacor 35WG	2.0 oz	2	0.7 a
Delegate 25WG	4.5 oz	2	
Altacor 35WG	4.0 oz	2	0.6 a
Delegate 25WG	7.0 oz	2	
Warrior II + Agri-Mek 0.15EC <sup>1</sup>	2.56 oz 16.0 oz	1	0.0 a
Assail 30WG + Warrior II	6.0 oz 2.56 oz	2	
Imidian 70WP <sup>2</sup>	5.5 lb	1	
Untreated Control	—	—	31.6 b

<sup>1</sup> Purespray Green horticultural oil was applied at 1.0% on 22 Apr at 288 DD from 1<sup>st</sup> biofix.

<sup>2</sup> Imidian was adjusted to a pH of less than 5.0.



# Secondary Pests (TSSM)

Treatment	Rate lb(AI)/ac	No. App.	Mean Total No. TSSM/20 Leaves		
			1 <sup>st</sup> Gen	2 <sup>nd</sup> Gen	Season
1.Delegate 25WG	4.5	2	11.0 ab	16.0 a	27.0 ab
Altacor 35WDG	2.0	2			
2.Delegate 25WG	7.0	2	14.0 ab	30.8 a	44.8 ab
Altacor 35WDG	4.0	2			
3.Altacor 35WDG	2.0	2	20.5 bc	30.0 a	50.5 b
Delegate 25 WG	4.5	2			
4.Altacor 35WDG	4.0	2	21.5 bc	38.0 a	59.5 b
Delegate 25WG	7.0	2			
5.Warrior II +	2.56	1	0.8 a	6.8 a	7.5 a
Agri-Mek 0.1EC <sup>1</sup>	16.0				
Assail 30WG +	6.0	2			
Warrior II	2.56				
Imidian 70WP <sup>2</sup>	88.0	1			
6.Untreated	—	—	31.5 c	35.0 a	66.5 b

<sup>1</sup> PureSpray Green horticultural oil was applied at 1% on 22 Apr at 288 DD from 1<sup>st</sup> biofix

<sup>2</sup> Treatment pH was adjusted to less than 5.5

# Secondary Pests (Pear Psylla)

Treatment	Rate	No.	Mean Total No. Pear Psylla/20 Leaves		
	lb(AI)/ac	App.	1 <sup>st</sup> Gen	2 <sup>nd</sup> Gen	Season
1.Delegate 25WG	4.5	2	55.8 ab	19.5 a	75.3 ab
Altacor 35WDG	2.0	2			
2.Delegate 25WG	7.0	2	57.0 ab	27.8 a	84.8 abc
Altacor 35WDG	4.0	2			
3.Altacor 35WDG	2.0	2	88.3 bc	53.5 ab	141.8 bcd
Delegate 25 WG	4.5	2			
4.Altacor 35WDG	4.0	2	94.8 c	78.5 b	173.3 d
Delegate 25WG	7.0	2			
5.Warrior II +	2.56	1	26.3 a	22.0 a	48.3 a
Agri-Mek 0.1EC <sup>1</sup>	16.0				
Assail 30WG +	6.0	2			
Warrior II	2.56				
Imidian 70WP <sup>2</sup>	88.0	1			
6.Untreated	—	—	90.3 bc	67.0 ab	157.3 cd

<sup>1</sup> PureSpray Green horticultural oil was applied at 1% on 22 Apr at 288 DD from 1<sup>st</sup> biofix

<sup>2</sup> Treatment pH was adjusted to less than 5.5

# Conclusions

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- CM control with Delegate and Altacor similar & independent of order.
- Delegate had lower pear psylla rates if applied first.