

Optimal Insecticide Resistance Management Rotations for Chili Thrips

Characterizing Impacts on Populations and Fruit Quality

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Background

Full-Season Thrips Management

- **The Problem:** Thrips populations often build up within the first third of the season. Early season sprays can fail to prevent damage to foliage, blossoms, and fruit.
- **The Strategy:** Focus on **early intervention**. Product application during the first month of establishment—before the canopy closes—improves coverage and delays population buildup.
- **Current Research:** Field trials were conducted at the **Dover FSGA Research Site** to refine season long product applications under real-world conditions. We also revisited sampling technique (i.e. destructive vs. passive sampling)





Methodology

- 'Ember' planted 10/20/2025
- Applications – (weekly, 12/2 through 4/26)
- Assessments
 - Thrips counts on leaves (10 emerging trifoliate) & flowers (10 blooms per plant, alcohol bath, microscope counts)
 - Fruit evaluations (% incidence, severity, marketable fruit)

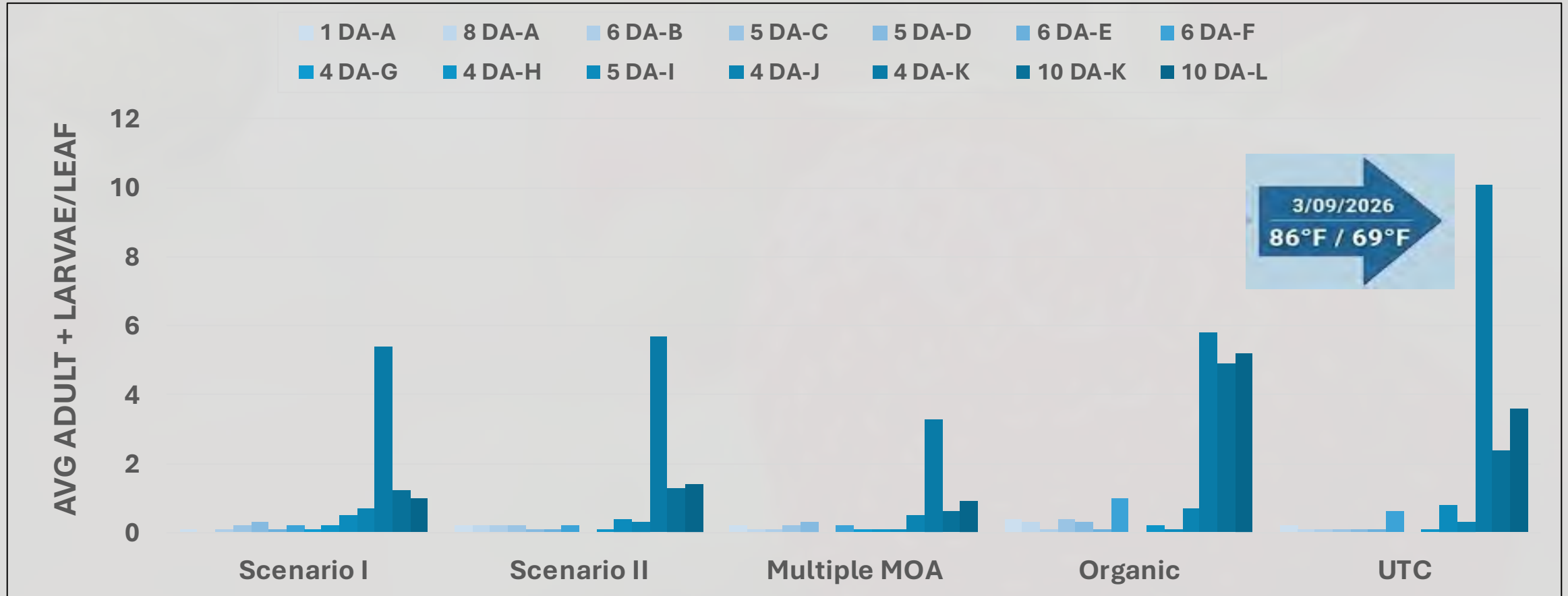


	Scenario I		Scenario II		Multiple MOA		Organic
Early Season	Admire Pro (1.3 fl oz/a)	4a	Entrust (6 fl oz/a)	5	Knack (10 fl oz/a)	7c	Entrust (6 fl oz/a) 5
	Radiant (10 fl oz/a)	5	Rimon (12 fl oz/a)	15	Exirel (20.5 fl oz/a)	28	Entomo. Nematode
	Exirel (20.5 fl oz/a)	28	Sivanto Prime (14 fl oz/a)	4d	Movento (10 fl oz/a)	23	Captiva Prime (2 pt/a)
	Assail 30 SG (6.9 fl oz/a)	4a	Timectin (16 fl oz/a)	6	Rimon (12 fl oz/a)	15	PFR-97 (28 oz wt/100 gal)

Fruiting to Mid-Late Season	Admire Pro (1.3 fl oz/a)	4a	Entrust (6 fl oz/a)	5	Knack (10 fl oz/a)	7c	Entrust (6 fl oz/a) 5
	Radiant (10 fl oz/a)	5	Rimon (12 fl oz/a)	15	Exirel (20.5 fl oz/a)	28	Entomo. Nematode
	Exirel (20.5 fl oz/a)	28	Sivanto Prime (14 fl oz/a)	4d	Movento (10 fl oz/a)	23	Captiva Prime (2 pt/a)
	Assail 30 SG (6.9 fl oz/a)	4a	Timectin (16 fl oz/a)	6	Rimon (12 fl oz/a)	15	PFR-97 (28 oz wt/100 gal)
	Rimon (12 fl oz/a)	15	Transform WG (2.25 oz/a)	4c	Assail 30 SG (6.9 fl oz/a)	4a	Beneficial Mite
	Sivanto Prime (14 fl oz/a)	4d	Radiant (10 fl oz/a)	5	Timectin (16 fl oz/a)	6	Green Lacewing larvae
	Transform WG (2.25 oz/a)	4c			Apta (27 fl oz/a)	21a	Beneficial Mite
	Soil app then foliar		VS		All Foliar - Assail - Exirel + Entrust + Timectin		

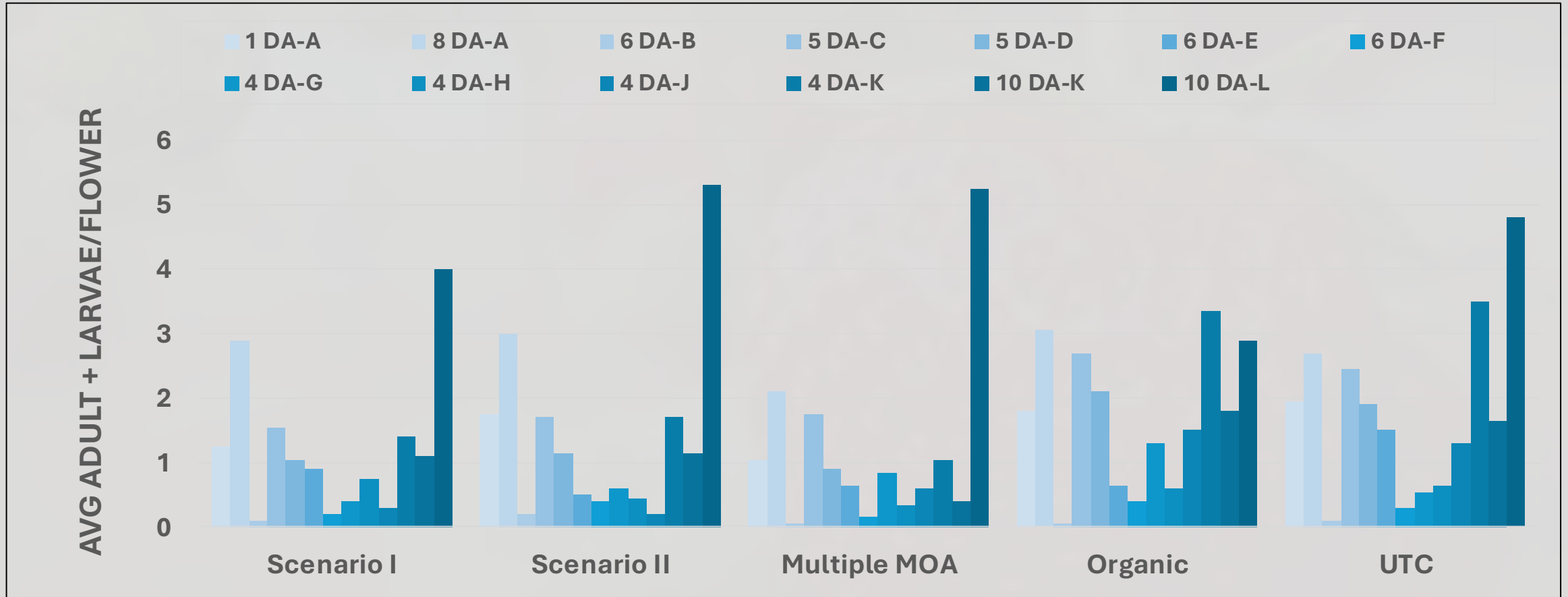


Impact on Thrips Populations - Foliage



- **Multiple MOA** provided the best foliar control, keeping populations below 4 thrips/leaf.
- **Organic** saw significant late-season failures, with UTC exceeding 10/lf at peak pressure

Impact on Thrips Populations - Flowers



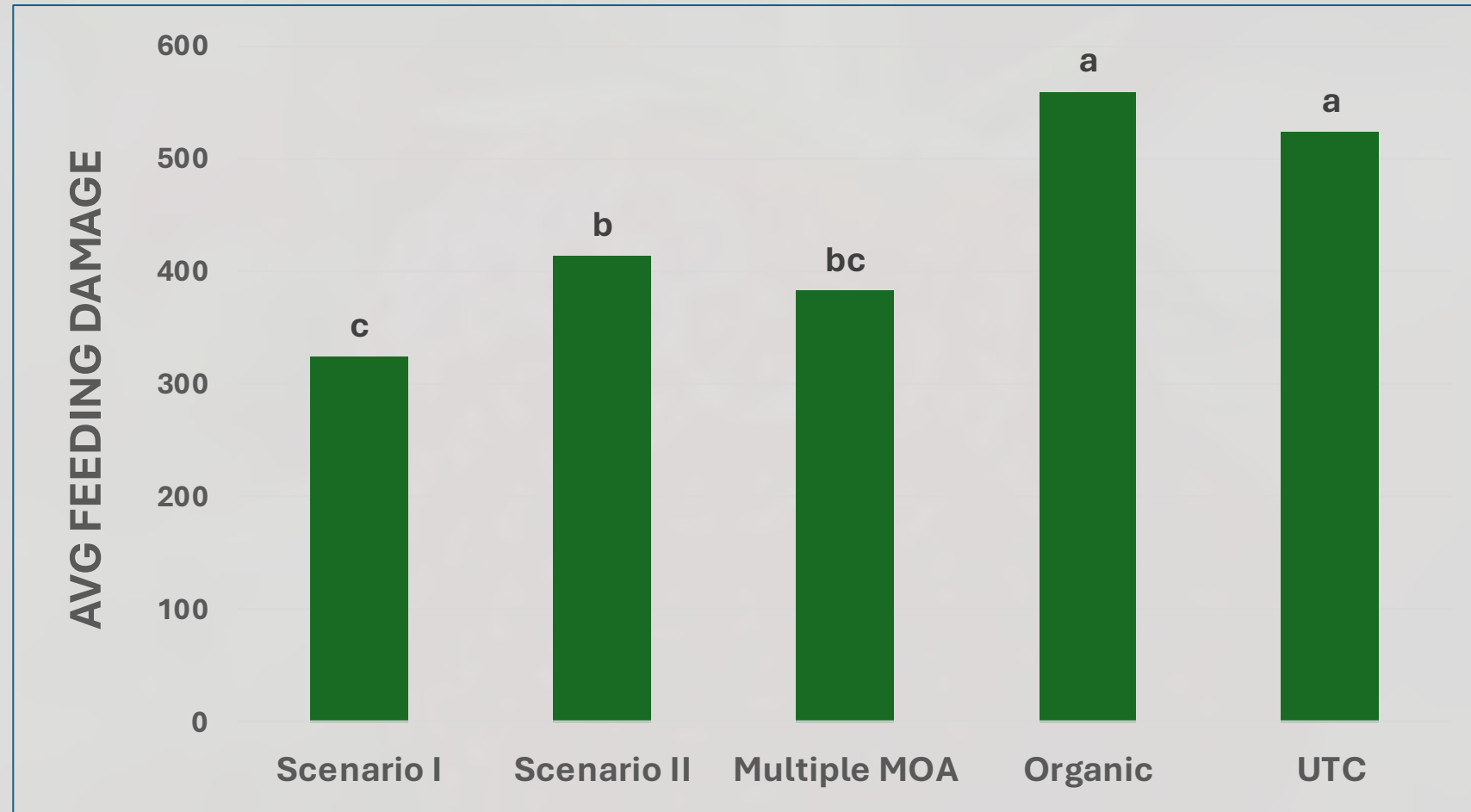
- **Scenario I** maintained the lowest population levels throughout the season.
- Population surge at **55 DA-F**, but **Scenario I** suppressed the peak most effectively.

Impact on Harvested Fruit -- Feeding Severity

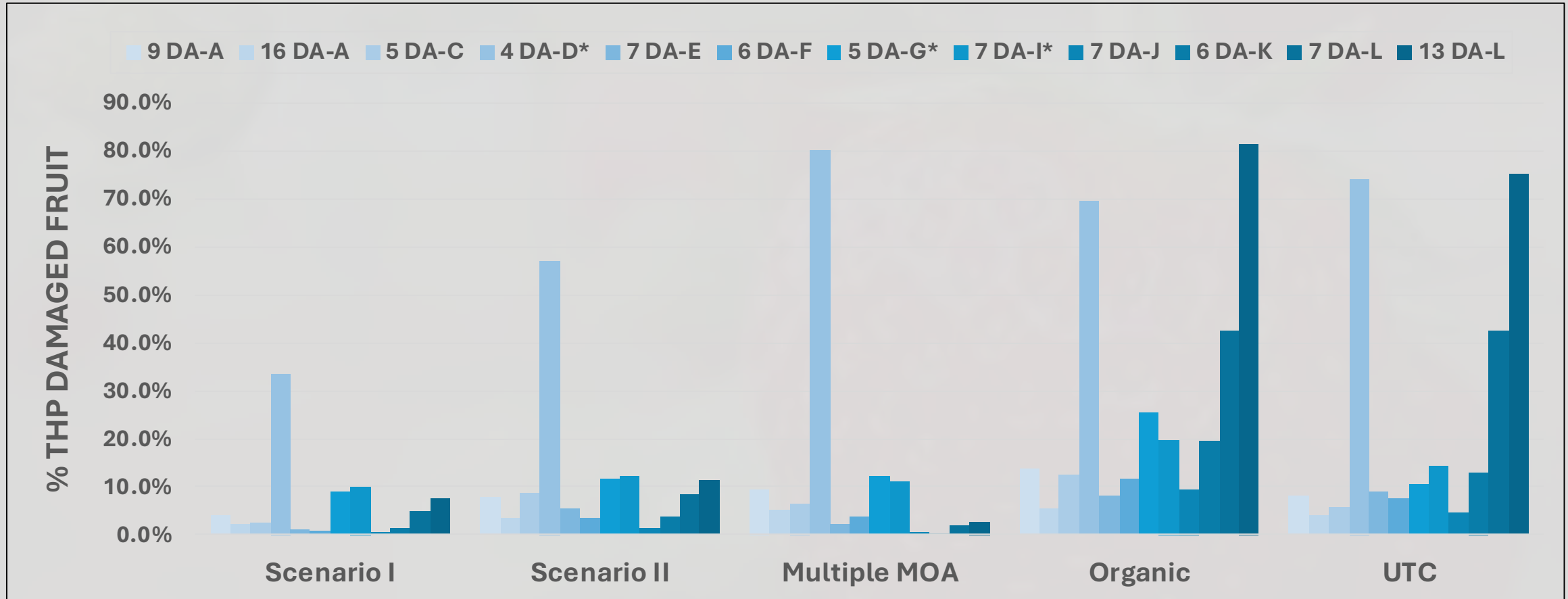
Damage severity (0-10)

Time weighted average of repeated severity measurements; considers time in between treatments

- **Scenario I** significantly reduced feeding damage compared to all other treatments
- **Organic** failed to reduce damage relative to the **UTC**



Impact on Harvested Fruit -- % Feeding Incidence



- **Scenario I** and **Multiple MOA** provided the most consistent protection against infestation.
- **Organic** treatments peaked at **>80% infestation**, statistically similar to the **UTC**

Impact on Marketable Yields -- Harvested Fruit

	Total Harvested Fruit Count	Total Harvested Weight (lbs)	Est Yield (lbs/acre)
Scenario I	1545.50 a	92.0 a	11957 a
Scenario II	1396.10 ab	86.3 ab	11220 ab
Multiple MOA	1613.50 a	94.0 a	12224 a
Organic	1080.30 c	66.0 c	8574 c
UTC	1155.30 bc	72.0 bc	9358 bc

- **Multiple MOA** and **Scenario I** produced the highest marketable fruit
- **Organic** program resulted in the lowest total marketable yield

Conclusions & Summary

- Number of thrips in trifoliate generally were low, increasing as season progressed
- Thrips in flowers were more variable throughout the study
- **Under the conditions in this trial, Scenario I (soil + foliar) and (Scenario III/MOA) provided equivalent control and protected marketable yield significantly more than foliar applications only and the organic program.**
- Sampling only trifoliate may underestimate population levels and scouting decisions need to consider whole plant samples