Twospotted Spider Mite Management

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UC Statewide IPM Project
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Introduction

- Chemical management.
- Biological management.
- Cultural management.

Chemical Management of Mites

- Acaricides
- Oils

Chemical Rotations
IRAC Number

- Insecticide Resistance Action Committee
- Any miticide with the same IRAC number has the same mode of action and should therefore not be used back to back.
- Know your IRAC number when making insecticide and miticide rotation decisions.

The Chemicals

- Savey (10A)

  Ovicide, contact toxin on eggs and juveniles. Safe with predators.
- Acramite (25)

  Contact poison by unknown mechanism. Safe with predators.
- Oberon (23)

  Contact on all mite stages. Harmful to predatory mites.
- Zeal (10B)

  Contact toxin on eggs, sterilizes females and inhibits molting of juveniles. Renders male *Phytoseiulus persimilis* sterile, release ok 30 days after application.

The Chemicals

- Kanemite (20B)

  Contact toxin to eggs, juveniles and adults. Highest 31 oz rate is more effective. Safe with predators.

- Agrimek (6)

  Contact or ingestion toxin which paralyzes juveniles and adults. Death by starvation. Not safe with predators.

- Danitol (3)

  Nerve toxin to juveniles and adults – pyrethroid. Not safe with predators.

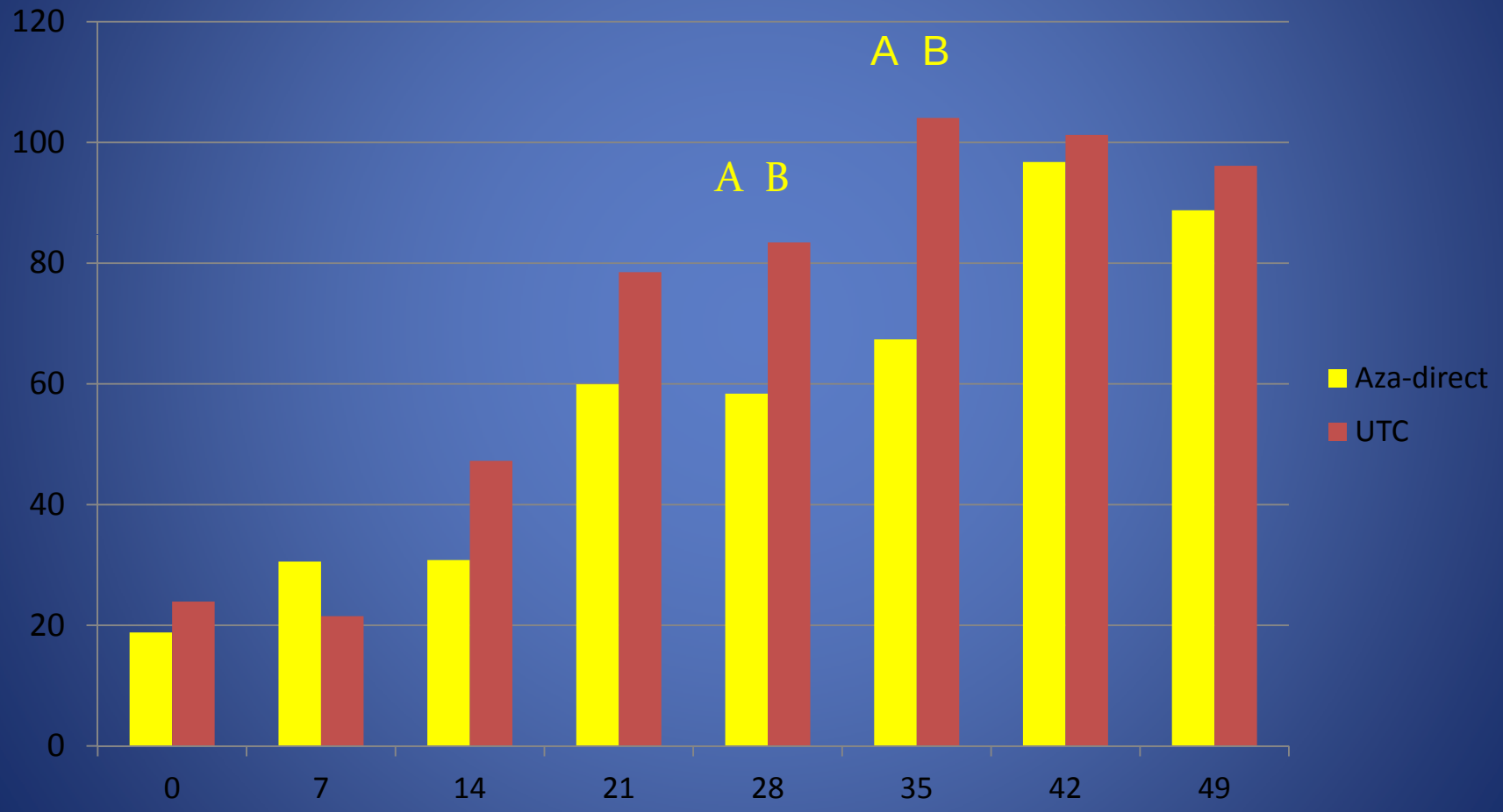
Oils

- GC Mite, Azadirect, JMS Stylet Oil, Golden Pest Spray oil, Omni Oil, Prevam

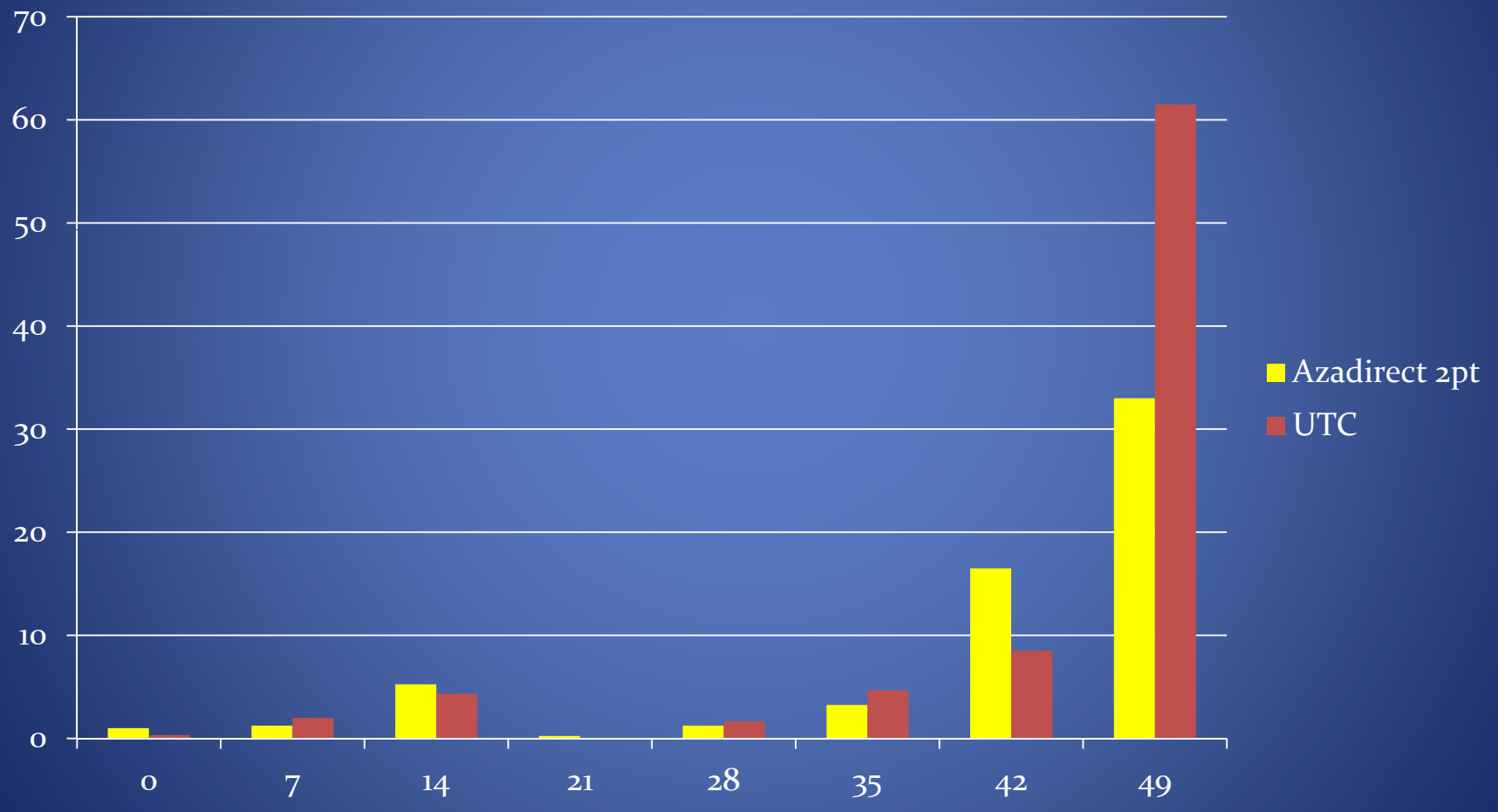
2006 Trial of Miticides

- Untreated control
- Azadirect (2 pt) applied 3 times

Aza-direct on Twospotted Spider Mite



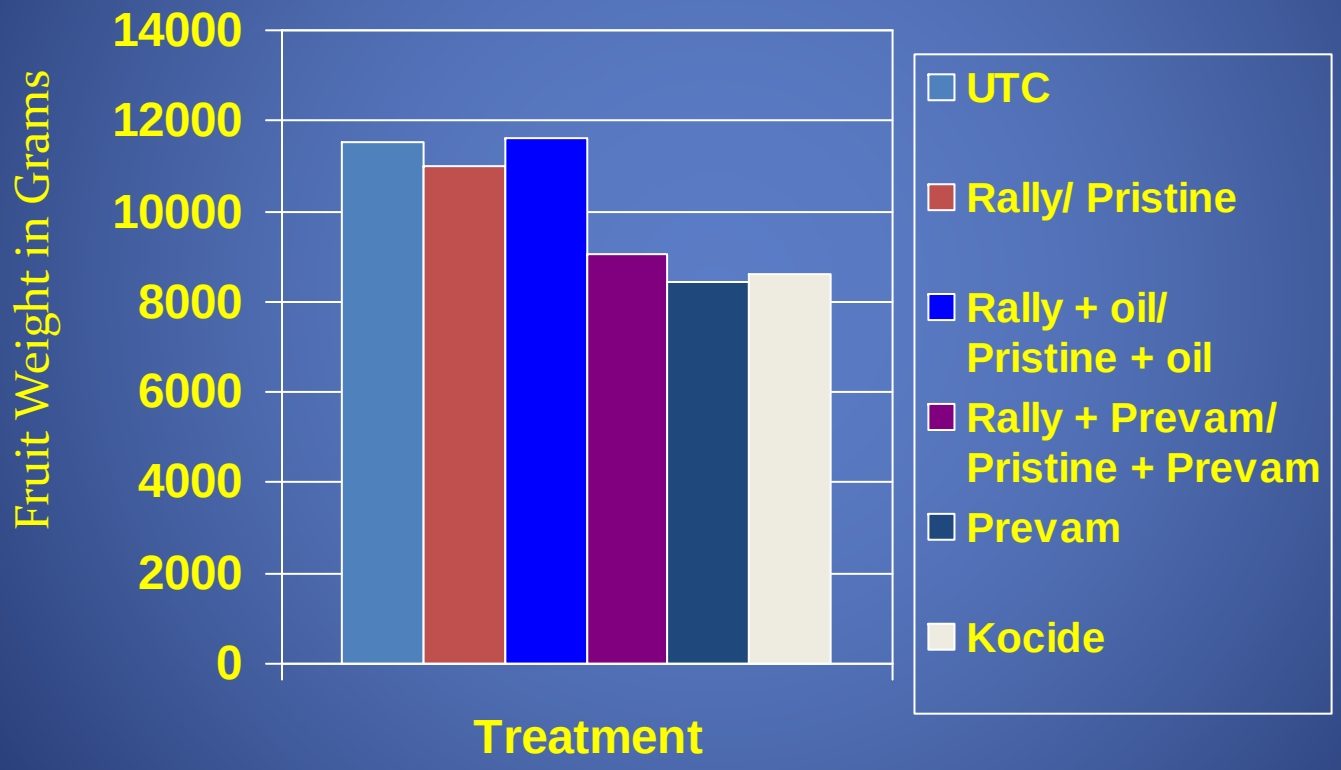
Predatory Mite Adults



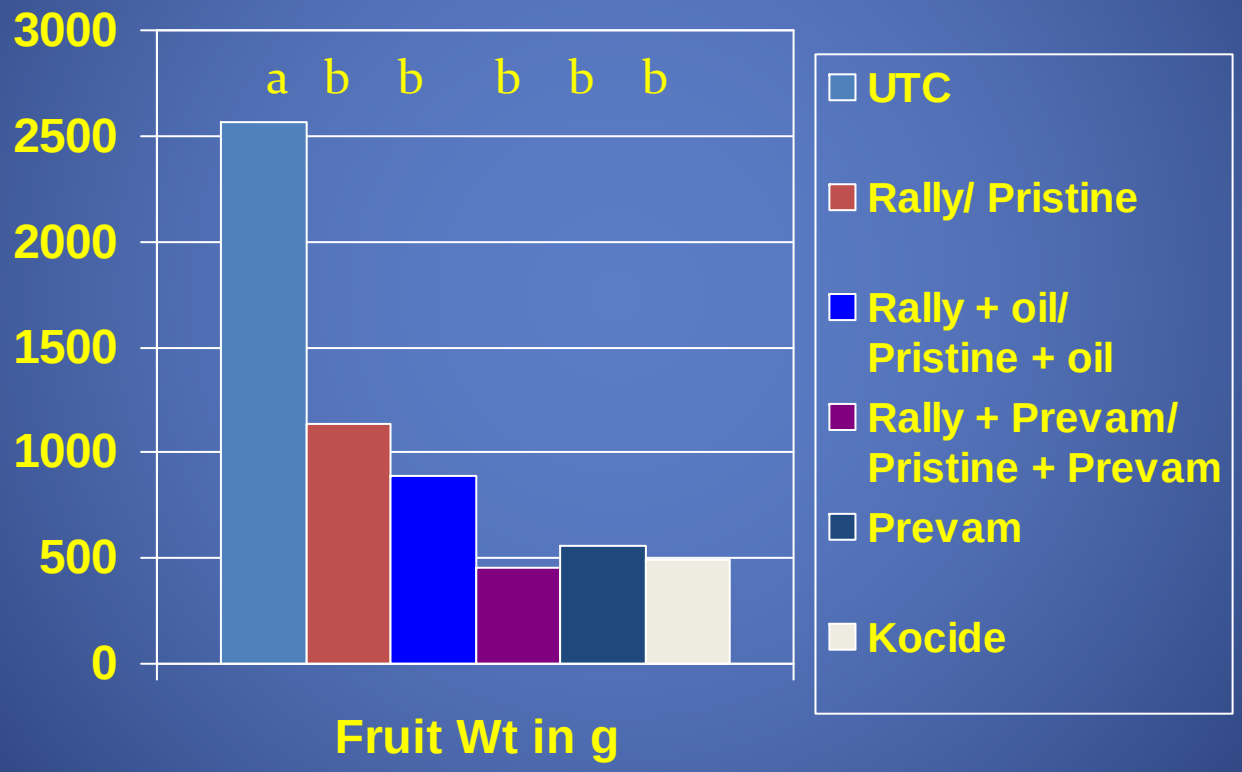
A Caution About Using Oils

- Six total applications in fall 2005 for yellow rust in raspberry, beginning August 12 and ending November 1.

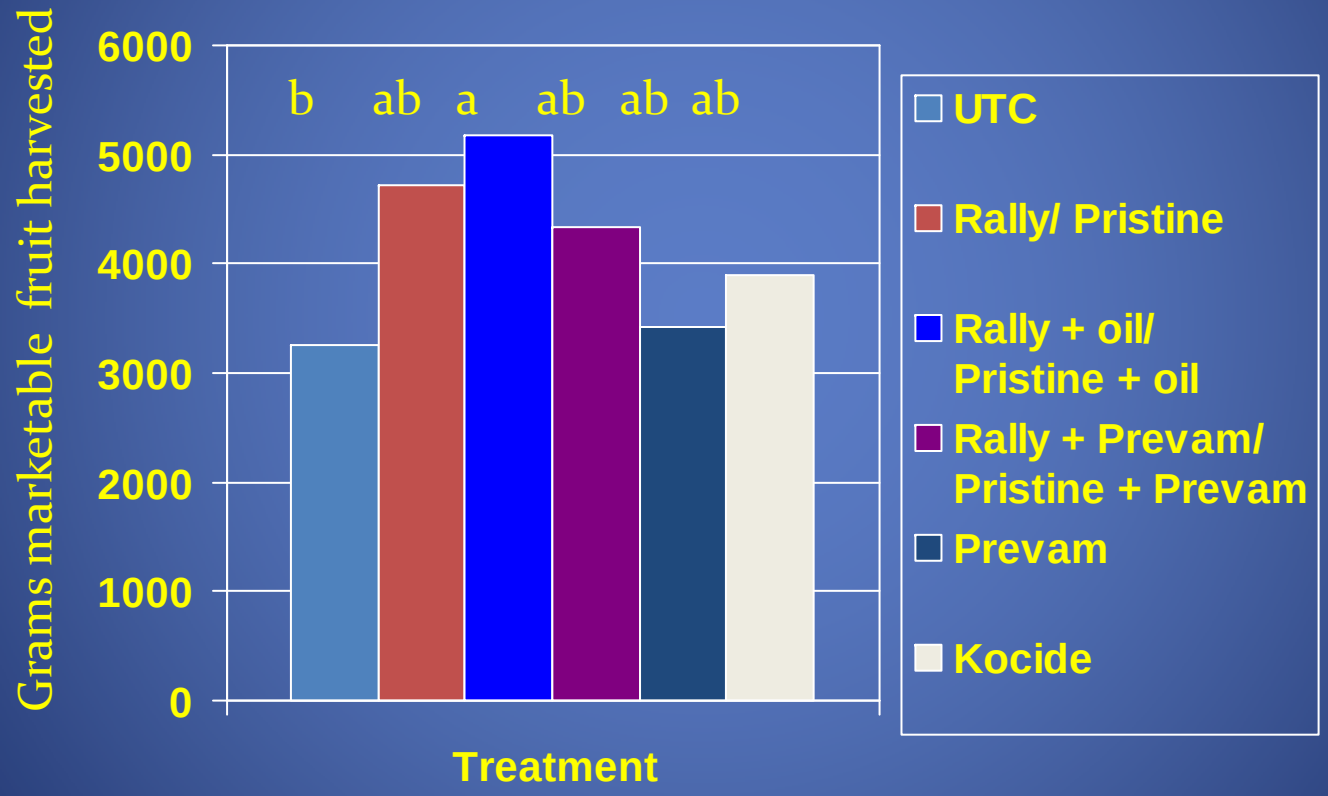
Control of Rust in Red Raspberry
Total Yield of Marketable Fruit
Fall 2005



Marketable Fruit Weight in Grams September 2005



Control of Rust in Red Raspberry
Yield of Marketable Fruit
November 2005



Another caution about using oils

- Golden Pest Spray oil applied every two weeks starting in April through the season for control of mites and mildew on strawberry.

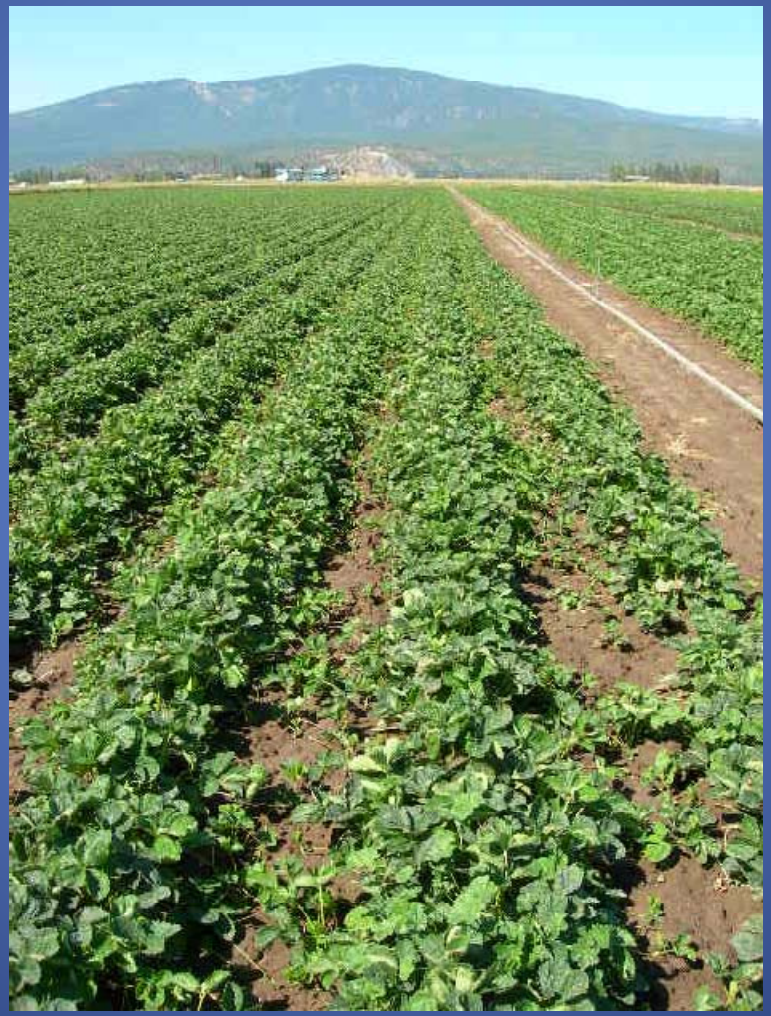
Oil for Control of Mildew in Organic Strawberries
Golden Pest Spray Oil (GPSO) at 0.5% and 1.0%

		Yield 6/18/2007 Mkt Box/A		Yield 9/6/2007 Mkt Box/A		Yield Mkt Box/A Total	
1	**Untreated control**	749.7	d	3076.9	a	3826.6	c
2	**GPSO @1%**	1395	c	3126.0	a	4521.8	b
3	**GPSO @ 0.5%**	1987	b	3298.6	a	5286.4	a
4	**Grower rotation**	2647	a	2957.4	a	5604.5	a

Cultural Management

- Use horticultural practices which benefit the plant.
  1. Adequate vigor.
  2. Adequate water.
  3. Water the farm roads.

Principles of Cold Conditioning



Adequate Vigor.
Proper Chill for Strawberries

Variety	Type	Supplemental chilling
Albion	Day neutral	10-18 days
Camarosa	Short day	0-7 days
Chandler	Short day	< 7 days
San Andreas	Day neutral	10-18 days
Portola	Day neutral	10-18 days
Monterey	Day neutral	10-18 days

Adequate Water

Water Farm Roads

- Dust = Mites