Tomato spotted wilt virus: Thrips Control and Variety Comparison Update

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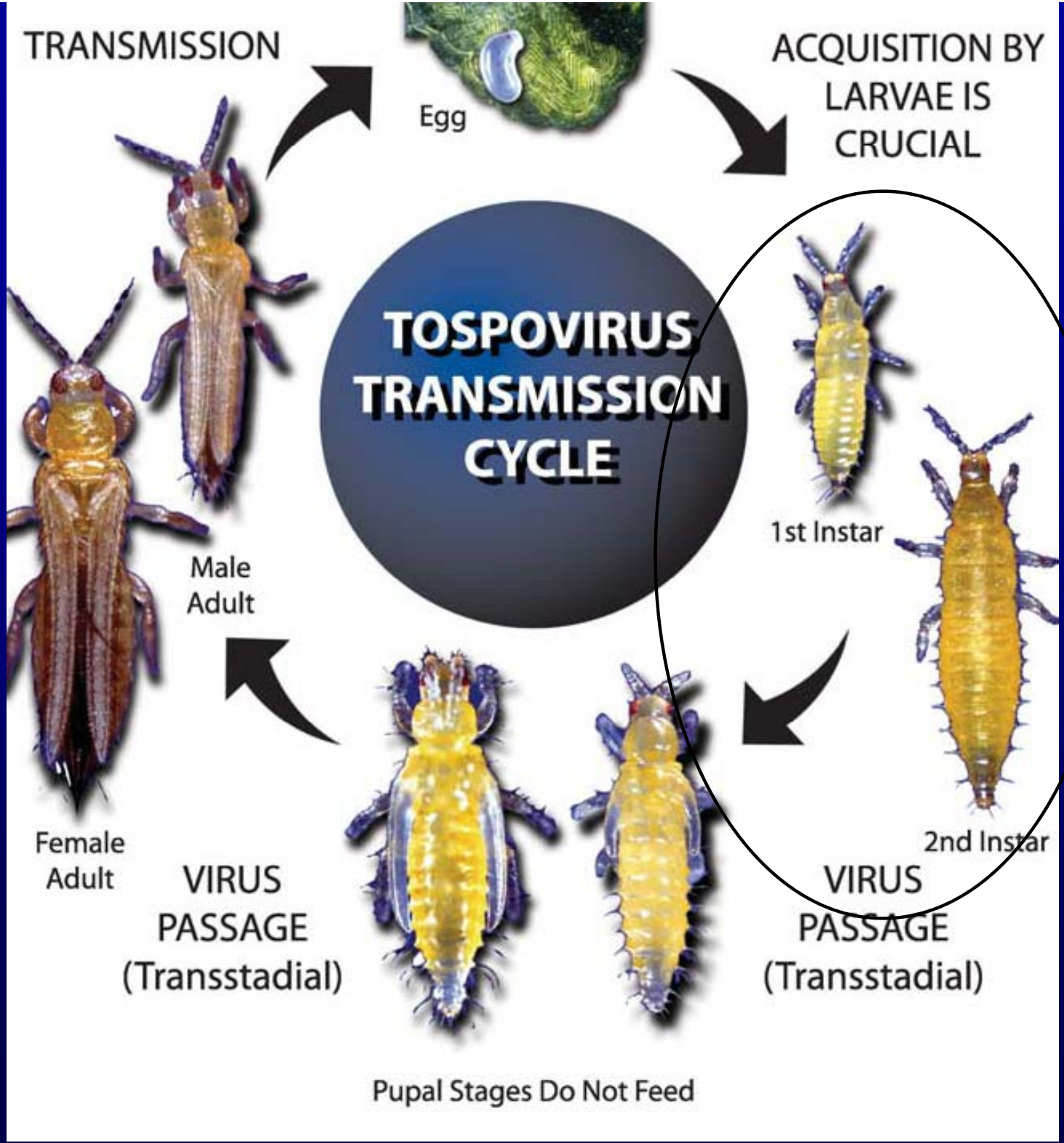
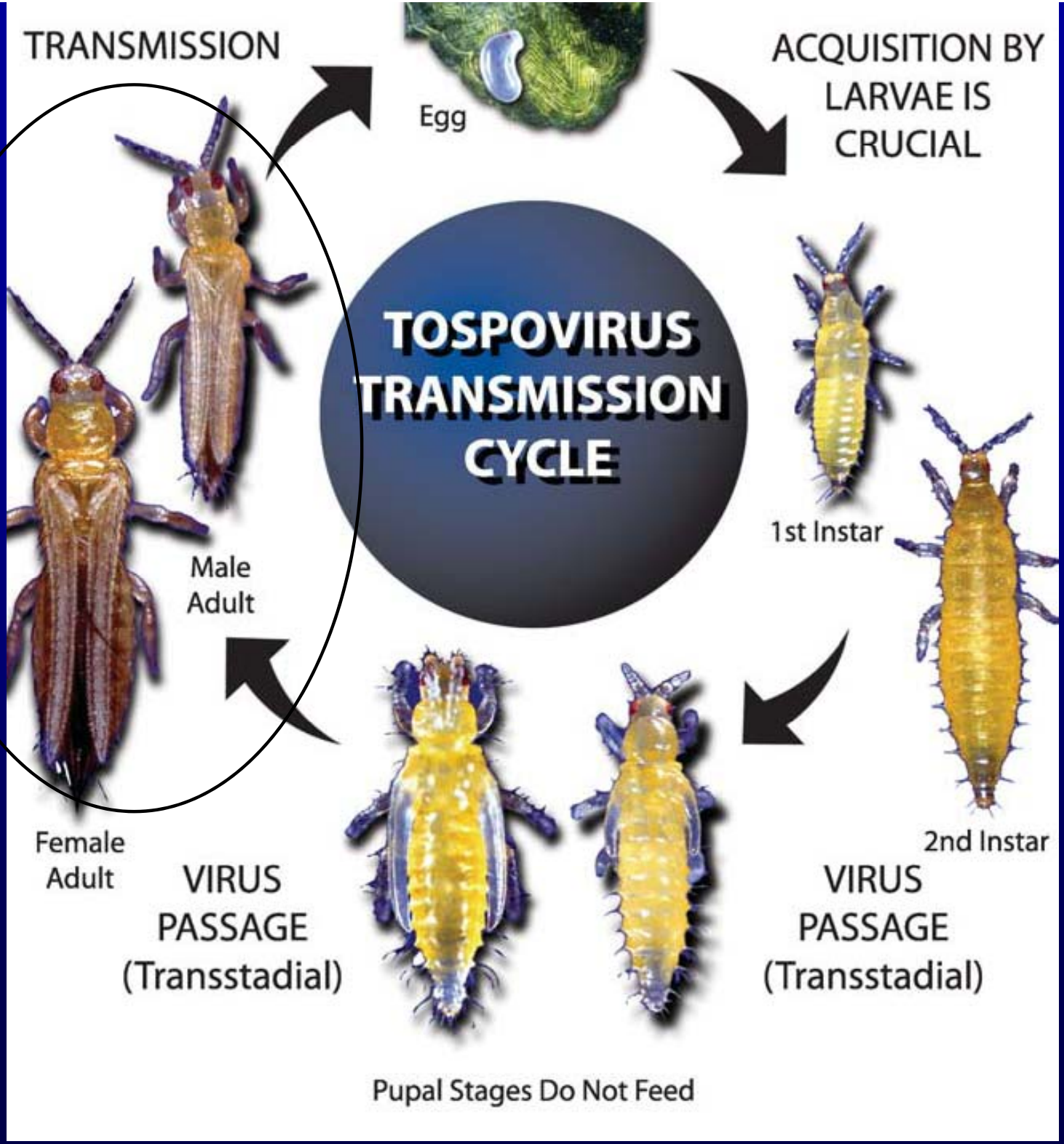
Recent Fresno County Processing Tomato TSWV/Thrips Management Studies

- Insecticide comparisons for thrips control
- Comparison of insecticide programs
- Processing tomato variety comparisons



TSWV must be acquired by the larvae to be transmissible.

A. E.Whitfield, D. E. Ullman, and T L. German. 2005. **TOSPOVIRUS-THRIPS INTERACTIONS.** Annu. Rev. Phytopathol. 2005. 43:459–89



Adults emerge and resume feeding on flowers, buds, and terminal foliage.

Adults can live 30 to 45 days and transmit the viruses to plants throughout their life.

Limitations of Thrips Control with Insecticides

- Thrips behavior
- High fecundity
- Short duration of control
- Disruption of IPM
- Resistance development

Thrips Control Comparisons, 07-09

Plant date	Variety	Planting method	Irrigation	App. date
9 Mar 2007	H 9997	direct seed	furrow	1 Jun
9 Apr 2008	H 9665	direct seed	furrow	24 Jul
14 May 2009	H 8004	transplant	drip	17 Jun
30 Apr 2010	H 8004	transplant	drip	16 Jul

Experimental design: 4 rep randomized complete block

Some materials tested may not be registered on tomatoes. All applicable labels should be read before writing a pesticide recommendation.

Summary Table Efficacy Trials (07-10)

Treatment rate per acre	Thrips counts											
	1 Jun 2007 app. 5 Jun 10 flower sample			24 Jul 2008 app.: 28 Jul 10 shoot sample			17 Jun 2009 app. shoot sample 21 Jun 2009			16 Jul 2010 app.: 20 Jul 25 flower sample nymphs		
Radiant 6.0 fl oz	8.8	c	(1)	0.3	bc	(3)	0.8	f	(1)	0.3	c	(1)
Dimethoate 4EL 1pt	9.0	c	(2)	0.0	c	(1)				2.0	c	(3)
Lannate SP 1 lb	9.2	c	(3)	0.5	bc	(4)						
HGW86 10SE 13.5 fl oz + Brigade 6.4 fl oz							2.3	ef	(2)			
Hero EW 11.2 fl oz							3.5	def	(3)	3.7	c	(6)
HGW86 10 SE (Cyazypur) 13.5 fl oz										10.0	ab	(11)
Mustang 4.3 fl oz + Beleaf 50SG 2.8 oz	9.3	c	(4)	0.3	bc	(2)						
Beleaf 50SG 2.8 oz							4.0	cdef	(4)	4.3	c	(8)
Surround 25 lbs				0.5	bc	(5)	4.0	cdef	(4)	5.0	bc	(9)
Assail 30SG 4.0 oz	9.5	bc	(5)							5.3	abc	(10)
Success 6.0 fl oz + Ecozin Plus 8.0 oz	11.5	abc	(6)									
Success 6.0 fl oz	13.3	abc	(7)									
Agrimek 12 oz							6.0	bcde	(5)			
Requiem 2.0 qts							7.5	abcd	(6)			
Leverage 5.1 fl oz				1.3	abc	(6)	8.5	abc	(7)			
Requiem 2.0 qts + Dimethoate 4EL 1.0 pt										3.7	c	(5)
Baythroid XL 2.8 floz + Diazinon A G500 4 qts				1.8	abc	(7)						
Brigadier 9.85 oz										3.3	c	(4)
Venom 70DG 4 oz	14.5	ab	(8)	3.3	ab	(9)				1.3	c	(2)
Mustang 4.3 fl oz	15.2	abc	(10)	1.3	abc	(6)						
Movento 5.0 oz	16.3	a	(11)	2.8	ab	(8)						
Microthiol 6.0 lbs	16.5	a	(12)									
Requiem 3.0 qts							10.0	ab	(8)	4.3	c	(7)
Untreated Control	14.9	ab	(9)	4.3	a	(10)	11.0	a	(9)	10.7	a	(12)

Treatments Providing Control (07-10)

Treatment rate per acre	Thrips counts											
	1 Jun 2007 app. 5 Jun 10 flower sample			24 Jul 2008 app.: 28 Jul 10 shoot sample			17 Jun 2009 app. shoot sample 21 Jun 2009			16 Jul 2010 app.: 20 Jul 25 flower sample nymphs		
Radiant 6.0 fl oz	8.8	c	(1)	0.3	bc	(3)	0.8	f	(1)	0.3	c	(1)
Dimethoate 4EL 1pt	9.0	c	(2)	0.0	c	(1)				2.0	c	(3)
Lannate SP 1 lb	9.2	c	(3)	0.5	bc	(4)						
Cyazypur 13.5 fl oz + Brigade 6.4 fl oz							2.3	ef	(2)			
Hero EW 11.2 fl oz							3.5	def	(3)	3.7	c	(6)
Mustang 4.3 fl oz + Beleaf 50SG 2.8 oz	9.3	c	(4)	0.3	bc	(2)						
Beleaf 50SG 2.8 oz							4.0	cdef	(4)	4.3	c	(8)
Surround 25 lbs				0.5	bc	(5)	4.0	cdef	(4)	5.0	bc	(9)
Untreated Control	14.9	ab	(9)	4.3	a	(10)	11.0	a	(9)	10.7	a	(12)

2010 Thrips Efficacy

	21 Jul, 2010 (leaf wash, 10 shoots)		19 Jul, 2010 (flower counts, 25 flowers				22 Jul, 2010 (flower counts, 25 flowers)			
Treatment, rate/acre[z]	Adults	Nymphs	Adults		Nymphs		Adults		Nymphs	
Radiant 6.0 fl oz	72.5	23.3	35.7	b	0.3	c	25.3	b	0.8	c
Venom 70 4.0oz	63.5	37.8	43.7	b	1.3	c	27.8	ab	6.5	a
Dimethoate 4EL 1.0 pt	39.0	66.0	44.0	b	2.0	c	40.8	ab	1.3	bc
Brigadier 9.85 oz	57.3	41.5	42.0	b	3.3	c	30	ab	3.5	abc
Requiem 2.0 qts + Dimethoate 4EL 1.0 pt	34.3	40.3	48.7	ab	3.7	c	29.3	ab	2.0	bc
Hero EW 11.2 fl oz	38.0	55.8	45	b	3.7	c	45.5	a	4.8	ab
Requiem 3.0 qts	67.8	84	36	b	4.3	c	32.8	ab	4.3	ab
Assail 30SG 4.0 oz	46.0	68.0	35.3	b	4.3	c	38	ab	4.3	ab
Beleaf 50SG 2.8 oz	62.3	25.5	40.7	b	5.0	bc	24	b	1.5	bc
Surround 25 lbs	56.0	46.8	43.0	b	5.3	abc	29	ab	2.8	abc
HGW86 10 SE 13.5 fl oz	54.5	26.3	61.7	a	10.0	ab	39	ab	1.3	bc
Untreated control	54.0	45.8	49.3	ab	10.7	a	33.8	ab	2.5	bc

Materials Showing Efficacy Against Thrips in Multiple Fresno Co. Trials

- Dimethoate (3/3)
- Lannate (2/2)
- Radiant (4/4)
- Beleaf + Mustang (2/2)
- Beleaf (2/2)
- Surround (3/3)

Recent Fresno County Processing Tomato TSWV/Thrips Management Studies

- Insecticide comparisons for thrips control
- Comparison of insecticide programs

Insecticide Programs

8004 transplanted on 14 May 2009

Main Plot Treatments (drip injected into three 66 in bed, 315 ft long

- Platinum 11 fl oz (3 Jun)
- Platinum 11 fl oz (3 Jun) and Venom 3.0 fl oz (7 Jul)
- Untreated

Sub-plot treatments (applied in 20 gal water/acre @ 30psi)

# apps.	17 Jun	1 Jul	16 Jul	21 Jul
4	Radiant 6 fl oz	Dimethoate 4EL 1pt	Lannate WP 1lb	Radiant 6 fl oz
3 early	Radiant 6 fl oz	Dimethoate 4EL 1pt	Lannate WP 1lb	
3 late		Dimethoate 4EL 1pt	Lannate WP 1lb	Radiant 6 fl oz
Untreated				

Insecticide Programs

8004 transplanted on 30 Apr 2010

Main Plot Treatments (drip injected into three 66 in bed, 315 ft long

- Platinum 75SG 3.67 oz (25 May) & Venom 3.0 fl oz (30 Jun): Actigard 7 to 10 days from 25 May to 21 Jul (7x)
- Platinum 75SG 3.67 oz (25 May) & Venom 3.0 fl oz (30 Jun)
- Untreated

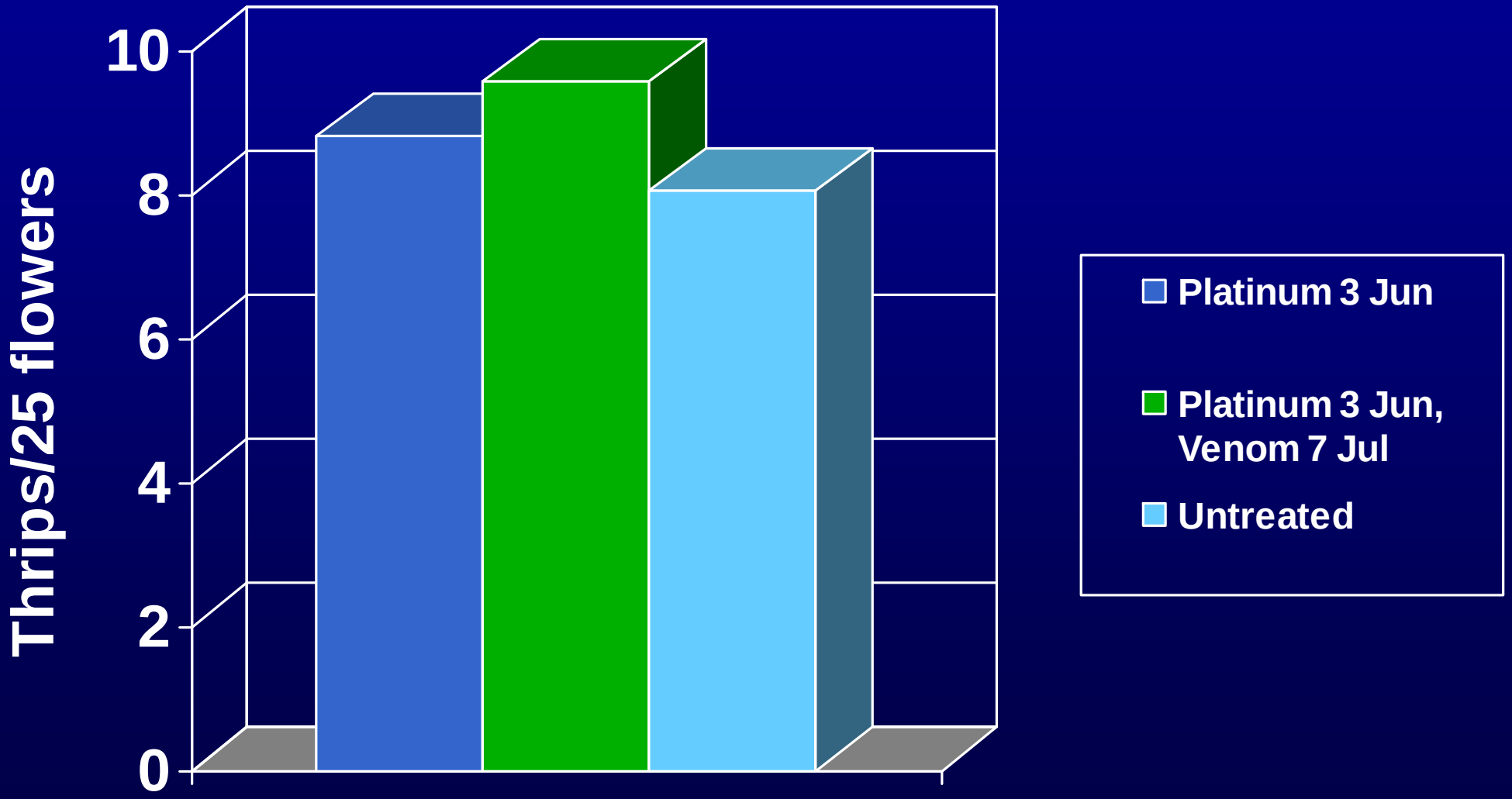
Foliar treatments (applied in 20 gal water/acre @ 30psi)

# apps.	Transplnt drench	9 Jun	23 Jun	7 Jul	16 Jul
3	Cyazypur	Radiant 6 fl oz	Dimethoate 4EL 1pt		
2		Radiant 6 fl oz	Dimethoate 4EL 1pt		
4		Radiant 6 fl oz	Dimethoate 4EL 1pt	Radiant 6 fl oz	Dimethoate 4EL 1pt
Untreated					

Five Replication Split-Plot Experimental Design

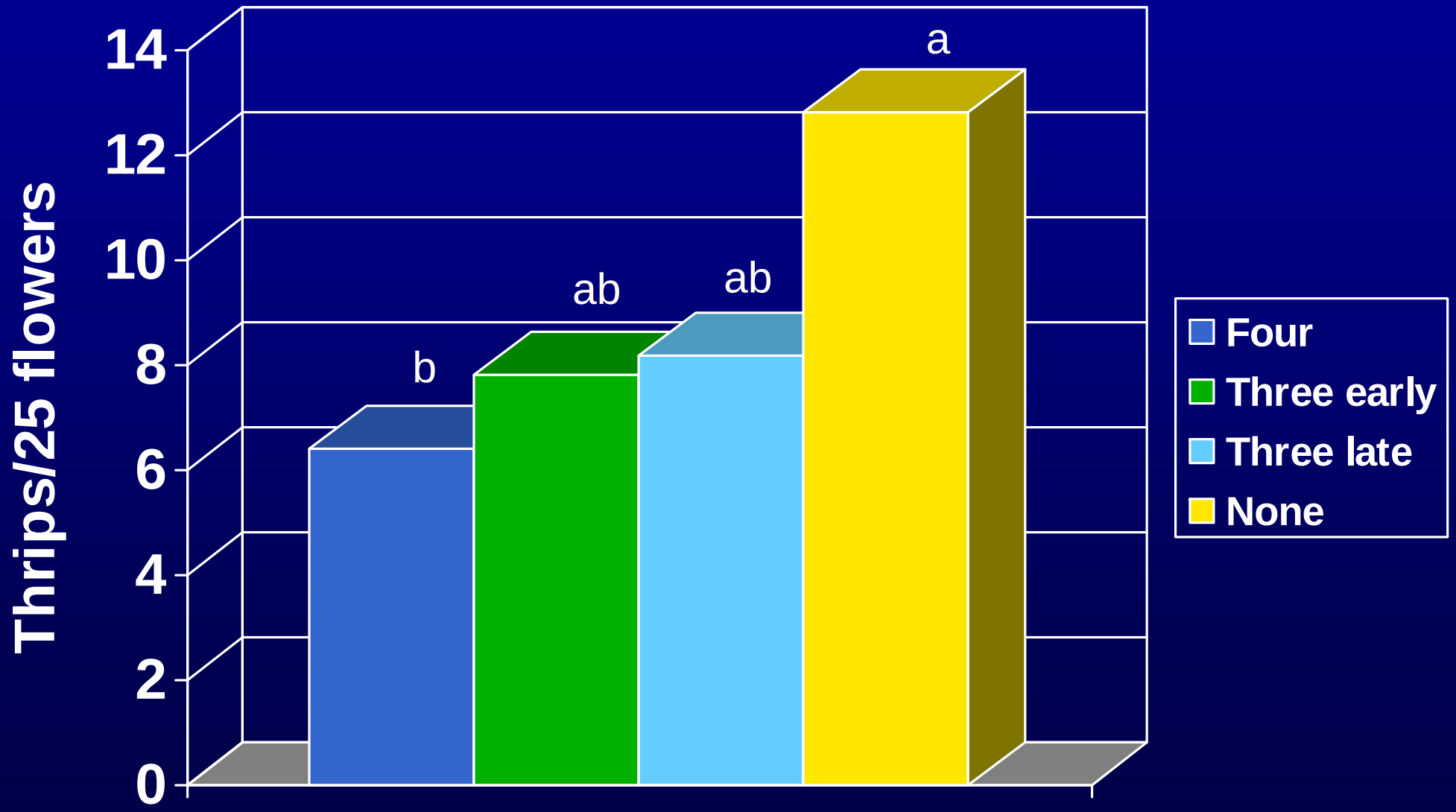
	REP 1			REP 2			REP 3			REP 4			
	Drip 1	Drip 3	Drip 2	Drip 3	Drip 2	Drip 1	Drip 1	Drip 3	Drip 2	Drip 1	Drip 3	Drip 2	
75’	IF 4	IF 2	IF 3	IF 5	IF 1	IF 4	IF 2	IF 5	IF 1	IF 3	IF 1	IF 4	
75’	IF 1	IF 5	IF 1	IF 3	IF 4	IF 2	IF 5	IF 2	IF 5	IF 4	IF 2	IF 5	
75’	IF 3	IF 1	IF 4	IF 2	IF 2	IF 1	IF 4	IF 3	IF 4	IF 1	IF 3	IF 2	
75’	IF 5	IF 4	IF 2	IF 4	IF 5	IF 5	IF 1	IF 1	IF 2	IF 2	IF 5	IF 3	

Thrips Densities
Soil-Applied Insecticide
(flowers collected 15 Jul)

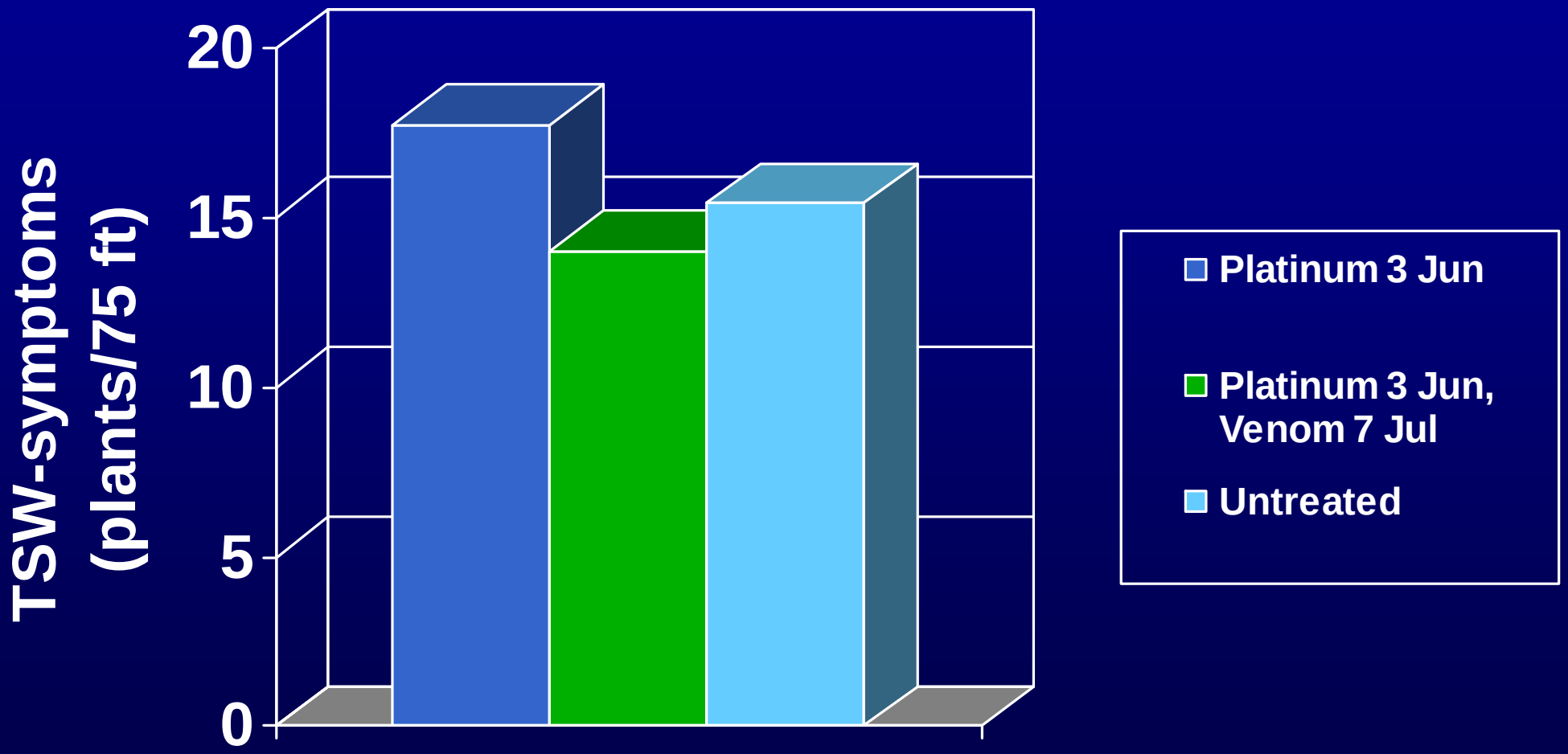


NO SIGNIFICANT DIFFERENCE P=0.05

Thrips Densities
Foliar-Applied Insecticide
(flowers collected 15 Jul)

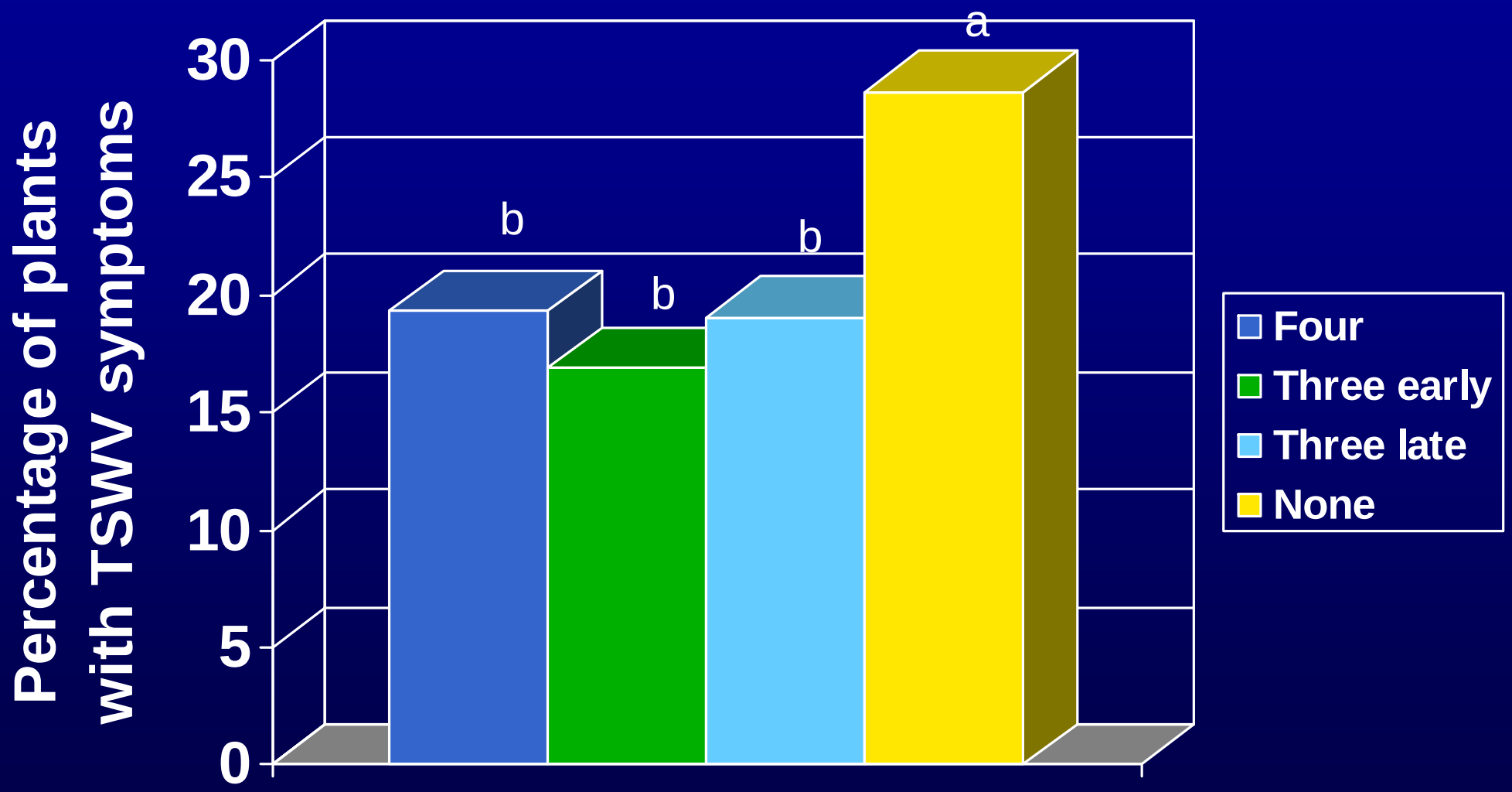


TSW-Symptom Incidence
Soil-Applied Insecticide



NO SIGNIFICANT DIFFERENCE P=0.05

TSW-Symptom Incidence
Foliar-Applied Insecticide Programs



2010 Program
Thrips Populations and TSWV

Treatment					Thrips/25 flowers				Plants with TSWV symptoms (%)	
Injections into drip irrigation system buried to 10 in					2 Jul		27 Jul		3 Aug	27 Aug
					nymph	adult	nymph	adult		
Platinum75SG 3.67 oz (25 May), Venom 6.0 oz (30 Jun) Actigard (25 May, 8,15,22, 30 Jun, 9, 21 Jul)					2.833	35.500	2.583	32.083	38.131	43.256
Platinum75SG 3.67 oz (25 May), Venom 6.0 oz (30 Jun)					2.417	28.083	2.333	20.833	29.373	36.944
Untreated					1.667	24.583	1.333	21.750	36.876	44.462
Drip injection, probability					NS	NS	NS	NS	NS	NS
Foliar applications					Thrips/25 flowers				Plants with TSWV symptoms (%)	
Trans. drench 29 Apr	9 Jun	23 Jun	7 Jul	16 Jul	2 Jul		27 Jul		3 Aug	27 Aug
					nymph	adult	nymph	adult		
HGW	Radiant 6.0 fl oz	Dimtht 4EL 1pt.			2.778	34.222	2.000	29.333	31.604	39.356
	Radiant 6.0 fl oz	Dimeth 4EL 1pt.			2.111	24.111	2.000	24.556	36.716	38.196
	Radiant 6.0 fl oz	Dimeth 4EL 1pt.	Radiant 6.0 fl oz	Dimeth 4EL 1pt.	1.222	27.111	1.556	22.111	31.444	39.524
Untreated					3.111	32.111	2.778	23.556	39.410	49.141
Foliar application, probability					NS	0.0184	NS	NS	NS	NS

2010 Yield and Quality

Treatment Injections into drip irrigation system buried to 10 in	Yield (tons/ acre)	Fruit quality (% by weight)					
		red	grn	rot	Sun burn	B E rot	TSWV
Platinum75SG 3.67 oz (25 Jun), Venom 6.0 oz (30 Jul) Actigard (25 May, 8,15,22, 30 Jun, 9, 21 Jul)	34.8	59.2	14.2	2.0	1.2	2.1	21.3
Platinum75SG 3.67 oz (25 Jun), Venom 6.0 oz (30 Jul)	31.8	59.1	15.8	1.8	1.1	5.0	17.7
Untreated	33.1	57.3	18.9	3.2	0.6	2.4	22.5
Drip injection, probability	NS	NS	NS	NS	NS	NS	NS

Foliar applications					Yield (tons/ acre)	Fruit quality (% by weight)					
Trans. drench 29 Apr	9 Jun	23 Jun	7 Jul	16 Jul		red	grn	rot	Sun burn	B E rot	TSWV
HGW86-435	Radiant 6.0 fl oz	Dimeth 4EL 1pt.			35.1	61.4	16.4	1.3	1.4	2.8	16.7
	Radiant 6.0 fl oz	Dimeth 4EL 1pt.			33.6	57.9	15.1	2.1	0.5	3.3	21.1
	Radiant 6.0 fl oz	Dimeth 4EL 1pt.	Radiant 6.0 fl oz	Dimeth 4EL 1pt.	34.7	60.3	15.6	3.8	0.9	2.6	16.9
Untreated					29.6	54.6	11.5	2.3	1.0	3.3	27.4
Foliar application, probability					NS	NS	NS	NS	NS	NS	NS

Overview of Programs Trials

- Under 2007-09 trial conditions, plots receiving foliar insecticides had lower TSWV incidence
- Plots receiving drip injections were similar to the untreated.
- In 2010, no notable differences were detected among treatments

Recent Fresno County Processing Tomato TSWV/Thrips Management Studies

- Insecticide comparisons for thrips control
- Comparison of insecticide programs
- Processing tomato variety comparisons

Variety Trials at WSREC 07-10

Trial Year	Plant date	Planting method	TSWV rated	Harvest date
2007	8 Mar	direct seed	3 Aug	7 Aug
2008 #1	16 Apr	transplant	18 Aug	21 Aug
2008 #2	13 May	transplant	16 Sep	18 Sep
2008 #3	13 May	direct seed	23 Sep	24 Sep
2009	22 May	transplant	21 Sep	22 Sep
2010 #1	16 Apr	transplant	3 Jun	27 Aug
2010 #2	20 May	transplant	3 Jul	16 Sep
2010 #3	18 Apr	transplant	9 Aug	--------

Tomato cultivar	Plants with TSWV symptoms **%**																				
	Direct seeded 8 Mar, rated 3 Aug 2007			Transplanted 16 Apr, rated 18 Aug 2008			Transplanted 13 May, rated 16 Sep 2008			Direct Seeded 13 May, rated 23 Sep 2008			Transplanted 22 May, rated 21 Sep 2009			Transplanted 16 Apr, rated 3 Jun 2010			Transplanted 20 May, rated 3 Jul 2010			Transplanted 22 Apr, rated 9 Sep 2010		
PX 002*[z]													**0.0**	e[y]	(16)[x]									
AB 8058*	**0.3**	f	(08)	**0.0**	e	(13)	**0.5**	f	(13)	**0.3**	e	(13)												
H 5608*																**0.0**	c	(14)	**0.6**	e	(13)	**0.0**	f	(12)
N 6394*																**0.0**	c	(14)	**0.0**	e	(14)	**6.9**	f	(10)
N 6385*																**0.6**	bc	(12)	**0.0**	e	(14)	**2.7**	f	(11)
HMX 7883													**18.2**	d	(15)									
SUN 6368	**6.5**	cde	(06)	**2.7**	de	(12)	**5.3**	def	(11)	**2.0**	de	(12)												
H 5508																**0.6**	bc	(12)	**0.0**	e	(14)			
HMX 5893	**4.3**	ef	(07)																					
N 6390													**24.7**	abcd	(11)									
UG 19406																**0.7**	bc	(11)	**1.8**	cde	(11)			
UG 4305				**8.7**	c	(05)	**3.0**	ef	(12)	**3.0**	d	(09)												
H 4007				**7.7**	c	(06)	**10.0**	bcd	(09)	**2.8**	de	(10)	**25.8**	abcd	(10)	**2.7**	bc	(07)	**0.9**	de	(12)	**26.5**	e	(09)
H 2005	**13.3**	ab	(02)	**4.3**	cde	(11)	**7.8**	cde	(10)	**3.0**	d	(08)												
PX 1723				**7.3**	c	(08)	**11.5**	abcd	(08)	**3.8**	cd	(06)												
BQ 205																**1.3**	bc	(10)	**2.3**	bcde	(08)			
H 9780	**6.5**	cde	(06)	**7.0**	cd	(09)	**12.8**	abc	(06)	**2.8**	de	(11)	**20.4**	cd	(13)	**3.8**	ab	(03)	**4.7**	ab	(02)	**33.6**	de	(07)
HMX 7885													**34.5**	ab	(04)	**0.0**	c	(14)	**1.9**	bcde	(10)	**50.2**	bc	(04)
CXD 255													**30.2**	abcd	(07)	**2.0**	bc	(09)	**3.8**	abc	(06)	**32.1**	de	(08)
BQ 163																**2.7**	bc	(07)	**1.9**	bcde	(09)			
H 2506	**7.0**	cde	(05)																					
HMX 6903													**29.2**	abcd	(08)									
AB 2	**7.0**	cde	(05)	**6.0**	cd	(10)	**13.3**	abc	(05)	**3.8**	cd	(07)	**27.6**	abcd	(09)	**3.2**	bc	(05)	**3.9**	abc	(04)	**74.3**	a	(01)
SUN 6366													**18.5**	d	(14)	**3.9**	ab	(02)	**3.9**	abc	(05)	**37.4**	bc	(04)
CXD 282													**31.8**	abc	(05)	**3.1**	bc	(06)	**3.5**	abcd	(07)	**46.0**	bcd	(05)
NDM 5578				**13.3**	b	(04)	**12.0**	abc	(07)	**4.5**	cd	(04)												
PX 650													**30.5**	abcd	(06)									
RED SPRING	**11.5**	bc	(03)																					
NUN 672				**14.0**	b	(03)	**15.0**	ab	(03)	**4.3**	cd	(05)												
H 2601	**9.8**	bcd	(04)	**7.3**	c	(07)	**17.2**	a	(01)	**8.0**	b	(02)	**35.8**	ab	(03)									
AB 3													**25.1**	bcd	(12)	**7.3**	a	(01)	**5.3**	abc	(01)	**60.4**	ab	(02)
H 8504													**36.4**	ab	(02)	**3.4**	bc	(04)	**4.2**	abc	(03)	**56.7**	b	(03)
HM 6898				**18.7**	a	(02)	**13.8**	abc	(04)	**6.0**	bc	(03)	**37.7**	a	(01)									
H 8004	**18.0**	a	(01)	**20.3**	a	(01)	**16.0**	ab	(02)	**11.3**	a	(01)												

SW5 or Lower Incidence Varieties

Tomato cv	Plants with TSWV symptoms %							
	DS 8 Mar, RATE 3 Aug 2007	TRANS 16 Apr, RATE 18 Aug 2008	TRANS 13 May, RATE 16 Sep 2008	DS 13 May, rated 23 Sep 2008	TRANS May, RATE 21 Sep 2009	TRANS 16 Apr, RATE 3 Jun 2010	TRANS 20 May, RATE 3 Jul 2010	Transplanted 22 Apr, rated 9 Sep 2010
PX 002*					**0.** e (16)			
AB 8058*	**0.3** f (08)	**0.0** e (13)	**0.5** f (13)	**0.3** e (13)				
H 5608*						**0.0**c (14)	**0.6** e (13)	**0.0** f (12)
N 6394*						**0.0**c (14)	**0.0** e (14)	**6.9** f (10)
N 6385*						**0.6**bc (12)	**0.0** e (14)	**2.7** f (11)
HMX 7883					**18.** d (15)			
SUN 6368	**6.5** cde (06)	**2.7** de (12)	**5.3** def (11)	**2.0** de (12)				
H 5508						**0.6**bc (12)	**0.0** e (14)	
HMX 5893	**4.3** ef (07)							
N 6390					**24.** abcd (11)			
UG 19406						**0.7**bc (11)	**1.8** cde (11)	
UG 4305		**8.7** c (05)	**3.0** ef (12)	**3.0** d (09)				
H 4007		**7.7** c (06)	**10.0** bcd (09)	**2.8** de (10)	**25.** abcd (10)	**2.7**bc (07)	**0.9** de (12)	**26.5** e (09)

Varieties with Medium or Variable Incidence

	Plants with TSWV symptoms **%**																							
Tomato cv	DS 8 Mar, RATE 3 Aug 2007			TRANS 16 Apr, RATE 18 Aug 2008			TRANS 13 May, RATE 16 Sep 2008			DS 13 May, rated 23 Sep 2008			TRANS May, RATE 21 Sep 2009			TRANS 16 Apr, RATE 3 Jun 2010			TRANS 20 May, RATE 3 Jul 2010			TRANS 22 Apr, RATE 9 Sep 2010		
H 2005	**13.3**	ab	(02)	**4.3**	cde	(11)	**7.8**	cde	(10)	**3.0**	d	(08)												
PX 1723				**7.3**	c	(08)	**11.5**	abcd	(08)	**3.8**	cd	(06)												
BQ 205																**1.3**	bc	(10)	**2.3**	bcde	(08)			
H 9780	**6.5**	cde	(06)	**7.0**	cd	(09)	**12.8**	abc	(06)	**2.8**	de	(11)	**20.4**	cd	(13)	**3.8**	ab	(03)	**4.7**	ab	(02)	**33.6**	de	(07)
HMX 7885													**34.5**	ab	(04)	**0.0**	c	(14)	**1.9**	bcde	(10)	**50.2**	bc	(04)
CXD 255													**30.2**	abcd	(07)	**2.0**	bc	(09)	**3.8**	abc	(06)	**32.1**	de	(08)
BQ 163																**2.7**	bc	(07)	**1.9**	bcde	(09)			
H 2506	**7.0**	cde	(05)																					
HMX 6903													**29.2**	abcd	(08)									
AB 2	**7.0**	cde	(05)	**6.0**	cd	(10)	**13.3**	abc	(05)	**3.8**	cd	(07)	**27.6**	abcd	(09)	**3.2**	bc	(05)	**3.9**	abc	(04)	**74.3**	a	(01)
SUN 6366													**18.5**	d	(14)	**3.9**	ab	(02)	**3.9**	abc	(05)	**37.4**	bc	(04)
CXD 282													**31.8**	abc	(05)	**3.1**	bc	(06)	**3.5**	abcd	(07)	**46.0**	bcd	(05)
NDM 5578				**13.3**	b	(04)	**12.0**	abc	(07)	**4.5**	cd	(04)												
PX 650													**30.5**	abcd	(06)									

Varieties with High Incidence

Tomato cv	Plants with TSWV symptoms %																							
	DS 8 Mar, RATE 3 Aug 2007			TRANS 16 Apr, RATE 18 Aug 2008			TRANS 13 May, RATE 16 Sep 2008			DS 13 May, rated 23 Sep 2008			TRANS May, RATE 21 Sep 2009			TRANS 16 Apr, RATE 3 Jun 2010			TRANS 20 May, RATE 3 Jul 2010			Transplanted 22 Apr, rated 9 Sep 2010		
RED SPRING	**11.5**	bc	(03)																					
NUN 672				**14.0**	b	(03)	**15.0**	ab	(03)	**4.3**	cd	(05)												
H 2601	**9.8**	bcd	(04)	**7.3**	c	(07)	**17.2**	a	(01)	**8.0**	b	(02)	**35.8**	ab	(03)									
AB 3													**25.1**	bcd	(12)	**7.3**	a	(01)	**5.3**	abc	(01)	**60.4**	ab	(02)
H 8504													**36.4**	ab	(02)	**3.4**	bc	(04)	**4.2**	abc	(03)	**56.7**	b	(03)
HM 6898				**18.7**	a	(02)	**13.8**	abc	(04)	**6.0**	bc	(03)	**37.7**	a	(01)									
H 8004	**18.0**	a	(01)	**20.3**	a	(01)	**16.0**	ab	(02)	**11.3**	a	(01)												

Variety Rankings Based on TSWV Incidence

Genetic resistance (SW5)		Low		Variable or Medium		High	
AB 8058	paste	SUN 6368	peel, solids	H 2005	multi use	NUN 672	viscosity
H 5608	paste	UG 4305	multi use	PX 1723	dice, peel	H 2601	pear
N 6394	multi use	H 4007	multi use	H 9780	multi use	AB 3	multi use
N 6385	peel, solids			HMX 7885	pear	H 8504	paste
				CXD 255	multi use	HM 6898	multi use
				AB 2	multi use	H 8004	multi use
				SUN 6366	multi use		
				CXD 282	multi use		
				NDM 5578	multi use		

Summary

- Materials that demonstrated thrips efficacy include Radiant, dimethoate, Lannate, Beleaf with Mustang and Surround.
- Foliar applications of effective insecticides reduced TSWV incidence in replicated trials under moderate pressure in 2007 - 2009, but not under the conditions of the 2010 trial.
- If growing tomatoes in area with history of the TSWV or in close proximity to known source consider growing resistant variety.
- Relative variety susceptibility can be considered in assessing risk of severe TSWV.

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