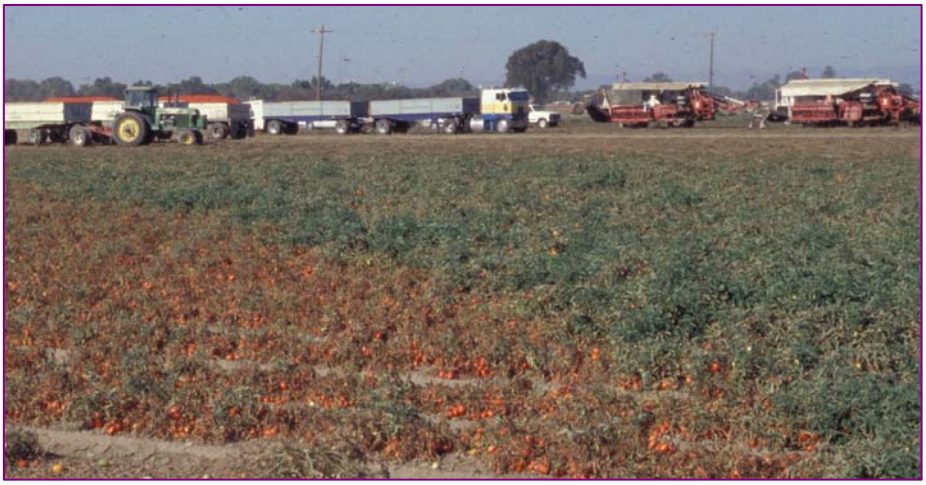
PROCESSING TOMATOES

IN SAN JOAQUIN COUNTY



2003 WEED, DISEASE & INSECT CONTROL TRIALS

University of California Cooperative Extension
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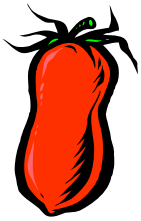

ANR UNIVERSITY of CALIFORNIA

2003 PROCESSING TOMATO WEED, DISEASE AND INSECT MANAGEMENT RESEARCH PROGRESS REPORT

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ACKNOWLEDGEMENTS

The 2003 tomato weed, disease and insect management research program in San Joaquin County was conducted with the cooperation and management assistance of the following growers and managers: Hal and Keith Robertson (Robertson Farms), Mark and John Bacchetti (Marca Bella Farms) and Bill Salmon, Ron and Dino Del Carlo (Del Carlo/Salmon Farms).

CAUTION

This report is a summary of processing tomato weed, disease and insect control studies conducted in San Joaquin County. **IT SHOULD NOT, IN ANY WAY, BE INTERPRETED AS A RECOMMENDATION OF THE UNIVERSITY OF CALIFORNIA**.

Chemical and common names of herbicides, fungicides, and insecticides are used in this report. NO endorsement of products mentioned or criticism of similar products is intended.

The rates of herbicides and fungicides in this report are always expressed as active ingredient (a.i.) of the material per treated acre, unless otherwise indicated.

	Trade Name	Common or Chemical Name	Manufacturer
HERBICIDES	Devrinol (2E)	napropamide	United Phosphorus Limited
	Matrix (25DF)	rimsulfuron	DuPont Chemical Co.
	CBA 362622 (75WG)	trifloxysulfuron	Syngenta Corporation
	Spartan (75DF)	sulfentrazone	FMC Corporation
	Dual Magnum (7.62E)	metolachlor	Syngenta Corporation
	Prowl (3.8CS)	pendimethalin	BASF Corporation
	Sandea (75WG)	halosulfuron	Gowan Chemical Co.
	Shark (2E)	carfentrazone	FMC Corporation
FUNGI-CIDES	Cabrio (20WG)	pyraclostrobin	BASF Corporation
	Pristine (38WG)	pyraclostrobin + nicobifen	BASF Corporation
	Bravo Weather Stik (65C)	chlorothalonil	Syngenta Corporation
	Quadris (2.08SC)	azoxystrobin	Syngenta Corporation
INSECTICIDES	Endura (70WG)	BAS 510	BASF Corporation
	Force (3G)	tefluthrin	Syngenta Corporation
	AG 600 WBC	diazinon	Platte Chemical Co.
	Diazinon (14G)	diazinon	Gowan Chemical Co.
	Calypso (480SC)	thiocloprid	Bayer Ag Products
	FO 570 (0.8 EW)	FO 570	FMC Corporation
	Warrior (1CS)	lambda-cyhalothrin	Syngenta Corporation
	Danitol (2,4EC)	fenpropathrin	Valent USA Corporation
	Renounce (20WP)	cyfluthrin	Bayer Ag Products

In 2003, three weed control studies were conducted in processing tomatoes in San Joaquin County, evaluating eight herbicides and/or combination treatments for preemergence and postemergence weed control and tomato crop safety. The first two trials were pre-transplant, preemergence studies where the five candidate herbicides, or combinations thereof, were soil incorporated two to three inches deep with the growers' rotary power tiller. In both trials the crop was transplanted into the field two to three days later with furrow irrigation following five to seven days later. Materials evaluated in both preemergence trials included Dual Magnum (metolachlor), Matrix (rimsulfuron), Devrinol (napropamide), Prowl (pendimethalin), and Spartan (sulfentrazone). In the postemergence trial, treatments were begun when the tomato transplants were 6 to 8 inches tall and the weed spectrum included cotyledon to second true leaf black and hairy nightshade (Solanum nigrum and Solanum sarrachoides), 3 to 4 true leaf yellow nutsedge (Cyperus esculentus), 0.5 to 1.5 inch tall barnyardgrass (Echinochloa crus-galli), cotyledon to second true leaf annual sowthistle (Sonchus oleraceus) and seedling to first true leaf common purslane (Portulaca oleracea). Single versus double applications of Sandea (halosulfuron) + X-77 and Matrix + X-77 were compared as well as combinations of the two herbicides together as a single application. Directed sprays of different rates of CGA 362622 (trifloxysulfuron) + X-77 and Shark (carfentrazone) were also evaluated.

One disease management trial, for control of Blackmold (Alternaria alternata), was established where Cabrio (pyraclostrobin), Pristine (pyraclostrobin + nicobifen), Endura (BAS 510) and Bravo Weather Stik (chlorothalonil) fungicides were evaluated. Two applications of each of the candidate fungicides were made as foliar sprays over and into the tomato crop.

A trial to evaluate seven candidate insecticides for the control of Garden symphylid (Scutigerella immaculata) in transplanted processing tomato variety, H-9780, was conducted near Tracy, California. Existing transplants in the trial area were pulled and destroyed. Treatments were then applied and soil incorporated prior to putting in new tomato transplants and/or applied as soil drenches following transplanting. Live plant stand counts and crop vigor ratings were made at 7 to 10 day intervals. Fresh weight harvest of all surviving plants in each treatment were taken 45 days after trial establishment.

Detailed descriptions of each trial follow, along with yield data. Additionally, the weed control trials have weed control and crop vigor/crop phytotoxicity ratings. The disease trial has data showing the percent of Blackmold infected fruit present in each treatment. Additional work on weed, disease and insect problems in tomatoes is planned for the 2004 season.

PROCESSING TOMATO
WEED MANAGEMENT TRIALS

A Pre-Transplant Incorporated Weed Control Trial in Processing Tomatoes

Robert Mullen, Scott Whiteley, Don Colbert and Nick Prichard

A pre-transplant incorporated preemergence weed control trial in processing tomatoes, evaluating five herbicides and/or combination treatments, was established at Marca Bella Farms (Mark and John Bacchetti) on Fabian Tract near Tracy, California, on May 7, 2003. All treatments were applied to the soil surface of the beds using a handheld CO_2 backpack sprayer with 8002 nozzles at 40 psi in a spray volume of 30 gallons per acre water. The soil type at the trial site was a Sacramento clay loam. There were four replications of each treatment in a randomized complete block design. The treatments were incorporated with the grower's tractor-pulled rotary tiller; soil incorporation depth was 2 to 3 inches deep. The field was transplanted three days later to the variety H-9663, with furrow irrigation following five days after that.

Weed control efficacy and crop vigor rating were taken on June 3, 2003. Best control of the population of yellow nutsedge (Cyperus esculentus) and black and hairy nightshade (Solanum nigrum and Solanum sarrachoides) occurred with the combination of Matrix (rimsulfuron) plus Dual Magnum (metolachlor) and Dual Magnum alone. All treatments exhibited excellent crop safety. The trial was harvested on August 27, 2003 and all treatments outyielded the untreated control, although not significantly, led by the Dual Magnum alone and the high rate of Matrix alone.

2003 Processing Tomato Preemergence Weed Control
Marca Bella Farms; Tracy, California

Treatment	Rate Lb/Acre A.I.	Weed Control [1] Black & Hairy Nightshade 6/03/03	Weed Control [1] Yellow Nutsedge 6/03/03	Crop [1] Vigor 6/03/03	Yield [2] Tons/Acre
Matrix (25DF)	0.031	8.3	7.3	9.5	37.1
Matrix	0.062	9.1	7.1	9.1	39.6
Matrix + Dual Magnum (7.62E)	0.062 + 1.43	9.3	8.9	9.3	34.2
Dual Magnum + Devrinol (50DF)	1.43 + 2.00	8.1	8.3	9.3	35.6
Matrix + Devrinol	0.062 + 2.00	8.9	7.6	9.5	36.7
Dual Magnum	1.43	8.3	9.0	9.3	43.1
Spartan (75DF)	0.25	6.9	7.3	9.1	30.9
Prowl (3.8CS)	1.50	8.1	7.6	9.5	31.0
Untreated Control	----	2.5	2.0	9.3	29.8

LSD @ 5%: n.s.
C.V. = 28.3%

[1] Average of four replications:
Weed Control – 0 = no weed control; 10 = complete weed control
Crop Vigor - 0 = crop dead; 10 = crop growing vigorously

[2] Average of four replications

Note:

1. The combination treatment of Matrix + Dual Magnum, both rates of Matrix alone and the combination of Matrix + Devrinol gave excellent control of a limited population of green foxtail and volunteer sunflower present in the trial.

A Pre-Transplant Incorporated Weed Management Study in Processing Tomatoes

Robert Mullen, Benny Fouché, Scott Whiteley, Don Colbert and Brenda Villalpando

A pre-transplant soil incorporated preemergence weed management study in processing tomatoes, evaluating five herbicides and/or combination treatments, was established at Robertson Farms (Hal Robertson) off Linne Road, southeast of Tracy, California, on May 6, 2003. All treatments were applied to the soil surface of the beds using a handheld CO_2 backpack sprayer with 8002 nozzles at 40 psi in a spray volume of 30 gallons per acre water. The soil type at the trial site was a Sorrento silty clay and there were four replications of each treatment in a randomized complete block design. The treatments were soil incorporated 2 to 3 inches deep using a tractor-pulled Performer rotary tiller. The field was transplanted four days later to the variety H-9663, with furrow irrigation following 5 or 6 days after that.

Weed control and crop vigor ratings were taken June 2, 2003. Best control of the heavy population of yellow nutsedge (Cyperus esculentus) and a moderate population of black and hairy nightshade (Solanum nigrum and Solanum sarrachoides) occurred with the combination treatment of Prowl (pendimethalin) plus Dual Magnum (metolachlor) followed by the combination treatment of Matrix (rimsulfuron) plus Dual Magnum, and Dual Magnum alone. All treatments gave excellent crop safety. The trial was harvested on September 5, 2003. Yields were below normal due to the presence of some Phytophthora root rot in the field, but all treatments outyielded the untreated control, led by the combination treatment of Prowl plus Dual Magnum and the high rate of Matrix alone.

2003 Processing Tomato Preemergence Weed Control
Hal Robertson Farms; southeast of Tracy, California

Treatment	Rate Lb/Acre A.I.	Weed Control [1] Yellow Nutsedge 6/03/03	Weed Control [1] Black & Hairy Nightshade 6/03/03	Crop [1] Vigor 6/03/03	Yield [2] Tons/Acre
Matrix (25DF)	0.031	5.3	8.9	9.4	25.4
Matrix	0.062	5.9	9.5	9.3	29.4
Matrix + Dual Magnum (7.62E)	0.062 + 1.43	8.2	9.1	9.1	26.3
Dual Magnum + Devrinol (50DF)	1.43 + 2.00	7.6	8.8	9.1	23.3
Matrix + Devrinol	0.062 + 2.00	5.1	9.0	9.3	24.3
Dual Magnum	1.43	8.6	8.3	9.3	24.3
Spartan (75DF)	0.25	3.0	7.9	9.3	24.8
Prowl (3.8CS)	1.50	2.5	8.8	9.3	24.5
Prowl + Dual Magnum	1.50 + 1.43	8.8	9.3	9.3	29.6
Untreated Control	----	2.0	1.8	9.1	21.9

LSD @ 5%: 7.0
C.V. = 18.9%

[1] Average of four replications:
Weed Control – 0 = no weed control; 10 = complete weed control
Crop Vigor - 0 = crop dead; 10 = crop growing vigorously

[2] Average of four replications

A Postemergence Weed Control Trial in Transplanted Processing Tomatoes.
Robert Mullen, Scott Whiteley, Don Colbert and Nick Prichard

A postemergence weed control trial in transplanted processing tomatoes, evaluating four herbicides and/or combination treatments, was established on June 11, 2003, at Marca Bella Farms (Mark and John Bacchetti) off Lammers Road north of Tracy, California. With selected treatments, second applications of the same rate of the same herbicide were made on June 17, 2003. All treatments were applied using a handheld CO_2 backpack sprayer with 8002 nozzles at 40 psi in a spray volume of 30 gallons per acre water. There were four replications of each treatment in a randomized complete block design. The soil type at the trial site was a Sacramento clay loam and the field variety was ENP 113. Weeds present at the initial treatment date were 3 to 4 true leaf yellow nutsedge (Cyperus esculentus), cotyledon to second true leaf black and hairy nightshade (Solanum nigrum and Solanum sarrachoides), 0.5 to 1.5 inch tall barnyardgrass (Echinochloa crus-galli), cotyledon to second true leaf annual sowthistle (Sonchus oleraceus) and seedling to first true leaf common purslane (Portulaca oleracea); the tomato crop was 6 to 8 inches tall. Weed control efficacy and crop phytotoxicity ratings were taken on June 17, 2003 and again on June 23, 2003. Best control of the weed species present occurred with the combination treatment of Sandea (halosulfuron) at the higher rate, plus Matrix (rimsulfuron) + X-77. Two applications of Matrix + X-77 gave good to excellent control of all weed species except yellow nutsedge. Sandea + X-77 at two applications gave very good yellow nutsedge control but was weak or only partially effective on the remaining weed species. The combination of Matrix plus Sandea, at the lower rate + X-77, gave good control of all weeds but was a bit weak on annual sowthistle. Shark (carfentrazone) gave good control of all broadleaf weed species but was weak on yellow nutsedge and barnyardgrass. All treatments exhibited excellent crop safety except Shark which caused considerable crop burn as a directed spray as the rate tested increased. For Shark to attain registration in tomatoes it would have to be applied as a shielded spray with the crop completely protected. The trial was harvested on September 12, 2003 and all treatments, except the two higher rates of Shark, outyielded the untreated control. The two higher rates of Shark had over 30% green fruit at harvest compared to 14.1% green fruit in the untreated control, indicating the amount of maturity delay from the earlier crop burn damage with Shark.

2003 Processing Tomato Postemergence Weed Control
Marca Bella Farms; north of Tracy, California

Treatment	Rate Lb/Acre		# of App's	Weed Control[1] Yellow Nutsedge 6/17	Yellow Nutsedge 6/23	Black & Hairy Nightshade 6/17	Black & Hairy Nightshade 6/23	Barnyardgrass 6/17	Barnyardgrass 6/23	Annual Sowthistle 6/17	Annual Sowthistle 6/23	Common Purslane 6/17	Common Purslane 6/23	Crop[1] Phyto 6/17	Crop[1] Phyto 6/23	Yield[2] Tons/ Acre	%[2] Red Fruit	%[2] Green Fruit
Matrix (25DF) + X-77	0.031 + ¼%		1	6.1	5.5	8.3	7.6	8.5	8.1	7.6	7.5	7.6	7.5	0.6	0.7	56.3	88.3	9.7
Matrix + X-77	0.031 + ¼%		2	6.0	6.3	7.9	8.6	8.6	9.3	7.9	8.1	8.0	8.0	0.8	0.9	54.1	89.3	7.6
Sandea (75WG) + X-77	0.032 + ¼%		1	7.8	7.9	5.0	3.5	6.0	5.8	7.4	7.3	5.9	5.5	1.3	0.9	53.8	88.2	9.8
Sandea + X-77	0.032 + ¼%		2	8.1	8.5	5.6	4.0	4.9	5.6	7.3	7.1	5.1	6.1	1.5	1.7	48.7	83.8	14.4
Matrix + Sandea + X-77	0.031 + 0.032 + ¼%		1	8.3	8.4	8.5	8.6	8.9	8.8	8.0	7.8	8.0	7.6	1.5	1.1	56.4	86.9	11.8
Matrix + Sandea + X-77	0.031 + 0.016 + ¼%		1	8.1	7.8	8.1	7.8	8.5	7.8	8.3	7.5	8.3	7.8	1.4	1.1	55.7	87.5	10.5
CGA 362622 (75WG) + X-77	0.007 + ¼%	directed spray	1	7.1	7.3	6.9	6.4	7.5	7.0	7.4	7.3	8.1	7.8	1.6	1.2	54.5	88.8	9.9
CGA 362622 + X-77	0.0035 + ¼%	directed spray	1	6.4	6.5	6.5	5.5	5.5	5.3	6.1	5.9	6.9	6.5	1.5	1.1	52.3	89.1	9.6
Shark (2EC)	0.01	directed spray	1	3.5	2.8	9.3	9.0	6.9	6.8	8.8	7.3	9.0	8.4	4.1	2.5	50.7	83.3	15.1
Shark	0.02	directed spray	1	3.5	3.5	9.9	9.4	7.6	7.4	9.8	9.1	10.0	9.5	6.4	5.5	31.0	69.0	30.6
Shark	0.03	directed spray	1	4.1	3.5	10.0	9.5	8.1	7.5	10.0	9.8	10.0	9.4	7.4	6.4	25.4	66.0	33.7
Untreated Control	----		1	0.0	0.0	0.0	0.0	00	0.0	0.0	0.0	0.0	0.0	0.8	0.6	44.8	83.5	14.1
																LSD @ 0.05:	8.0	4.6
																C.V. =	11.5%	21.9%

[1] Average of four replications:
Weed Control – 0 = no weed control; 10 = complete weed control
Crop Phyto – 0 = no crop injury; 10 = crop dead

[2] Average of four replications

PROCESSING TOMATO DISEASE CONTROL TRIAL

A Blackmold (*Alternaria alternata*) Control Trial in Processing Tomatoes

Robert Mullen, Mike Davis, Scott Whiteley, Don Colbert and Nick Prichard

A Blackmold (*Alternaria alternata*) control trial in processing tomatoes, evaluating four fungicides, was established at Del Carlo/Salmon Farms (Ron and Dino Del Carlo, Bill Salmon) on Union Island west of Stockton, California, on July 29, 2003. There were four replications of each treatment in a randomized complete block design. The soil type at the trial site was an Egbert muck and the field variety was Halley 3155. The field was furrow irrigated throughout the season. All treatments were applied over and into the crop using a handheld CO_2 backpack sprayer with 8004 nozzles at 30 psi in a spray volume of 50 gallons per acre water. A second application of all fungicides tested was made on August 11, 2003. The trial was harvested on August 26, 2003. The percent of Blackmold infected fruit was measured. Best reduction of the disease occurred with the high rate of Cabrio (pyraclostrobin), followed by Pristine (pyraclostrobin + nicobifen), the low rate of Cabrio, the low rate of Endura (BAS 510), and Bravo Weather Stik (chlorothalonil). All treatments gave better control than the untreated control. There was no significant difference in yield although all treatments, led by the low rate of Cabrio, outyielded the untreated control.

2003 Processing Tomato Blackmold Disease Control Trial
Del Carlo / Salmon Farms; Union Island west of Stockton, California

Treatment*	Rate Lb/Acre A.I.	Yield ** Tons/Acre	Percent** Blackmold Infected Fruit	% ** Red Fruit
Cabrio (20WG)	0.10	39.4	6.7	86.7
Cabrio	0.15	38.9	4.3	87.7
Endura (70WG)	0.10	37.3	7.8	83.1
Pristine (38WG)	0.20	37.1	5.9	87.2
Bravo Weather Stik (6SC)	1.50	37.9	8.2	85.0
Untreated Control	----	34.7	11.4	81.7
	LSD @ 5%:	n.s.	3.2	
	C.V. =	18.9%	28.6%	

*Treatments made 7/29/03 and 8/11/03

**Trial harvest date : 8/26/03
Average of four replications

PROCESSING TOMATO INSECT CONTROL TRIAL

Control of Garden Symphylid, *Scutigerella immaculata* in Tomato Fields

- Benny Fouche, Bob Mullen, Scott Whiteley, Don Colbert, Brenda Villalpando, Amy Smith,UCCE, S.J. County
- Hal & Keith Robertson Farms,Tracy, CA
- Charles Rivara, CTRI

Garden Centipedes, *Scutigerella immaculata*

- **Adults, small 5-8mm long white or yellowish shin, long antennae, 12 pairs of legs, live for several years**
- **Eggs laid in spring, adults in 2-6 months**
- **Seasonal or daily vertical migrations in soil, up to 50 cm deep**
- **Feed on algae, fungi, seeds and young roots**

Hosts

- **Beans, Asparagus, Peas, Beets, Potato, Corn**
- **Prefer damp soil with cracks, crevices, organic matter and tunnels**
- **Most damage done in early spring**

Detection

- **April, May and June**
- **Winter weeds good indicators, however many fields kept clean with roundup for early planting**
- **Dig into moist areas of field 6-8" deep with shovel and break apart clods. 5 or more/ shovel problems can result. PNW Guidelines. Dig fast!**
- **Float on surface of water**

Cultural Control

- **Flooding for 3-4 weeks in summer (Chaney & King) for control in fallow situations. Winter flooding in asparagus (Essig)**
- **Plant late spring when they move deeper than 6" for annual crops**

Standard Recommended Treatments

- **For Annual Crops**
- Dyfonate - Broadcast preplant
- Mocap - Beans, Cabbage, Corn, Cucumbers, Potato
- Diazinon - Broadcast & incorporate into soil
- **For Asparagus**
- Lorsban 15G-180 day phi, not effective timing

Treatment Materials

Product	Rate/Acre	Rate/100 Plants
1. F0570 (0.8EW)	0.05 Lb. A.I.	3.3 ml
2. Danitol (2.4EC)	0.40 Lb. A.I.	11.5 ml
3. Renounce (20WP)	0.044 lb A.I.	1.37 g
4. Force (3G)	5 oz product/ 1,000 ft of row	17.7 g
5. Diazinon (14G)	14 Lbs. product	87.0 g
6. Warrior	0.03 Lb. A.I.	1.6 ml

Treatment Materials

Product	Rate/Acre	Rate/100 Plants
7. Force (3G) + Calypso (480SC)	5 oz product/1,000 ft of row + 0.12 Lb A.I.	17.7g + 4.9 ml
8. Renounce (20WP) + Calypso (480SC)	0.044 Lb A.I. + 0.12 Lb. A.I.	1.37g + 4.9 ml
9. F0570 (0.8 EW)	0.05 Lb.A.I.	3.3 ml
10. Diazinon AG600	51 fluid oz product	21.0 ml
11. Calypso (480SC)	0.12 Lb. A.I.	4.9 ml
12. Untreated Control	---	---

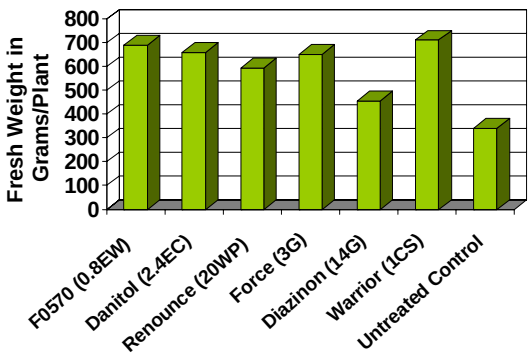
Experimental-Design

- Pulled out all of growers plants
- Put new transplants into field
- Treatments located according to pretreatment pest severity "un-randomized" blocks or "re-randomized" complete blocks
- Treatments #1 through #6 were mechanically incorporated before crop transplanting
- Treatment #7, Force(3G) was mechanically incorporated before crop transplanting plus Calypso (480SC) was applied as a plant drench after crop transplanting

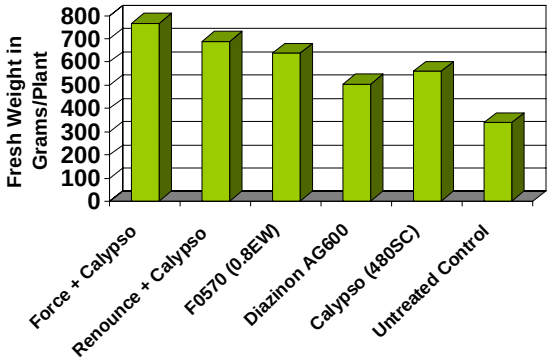
Experimental-Design cont'd.

- Treatment #8 Renounce(20WP) was mechanically incorporated before crop transplanting plus Calypso(480SC) was applied as a plant drench after crop transplanting
- Treatments #9 through #11 applied as a plant drench after crop transplanting
- The Untreated Control received water drench only

Tomato Symphylan Trial - Tracy, CA-2003
45 Days After Treatment - 20 Plants/Plot

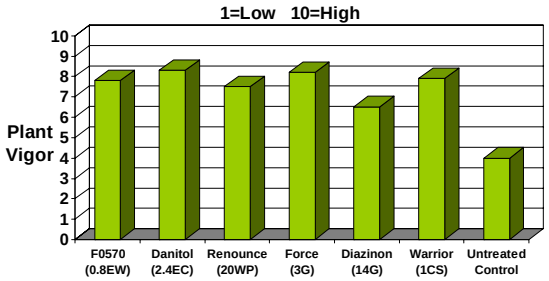


Tomato Symphylan Trial - Tracy, CA-2003
45 Days After Treatment - 20 Plants/Plot



Plant Vigor Rating

June 3, 2003



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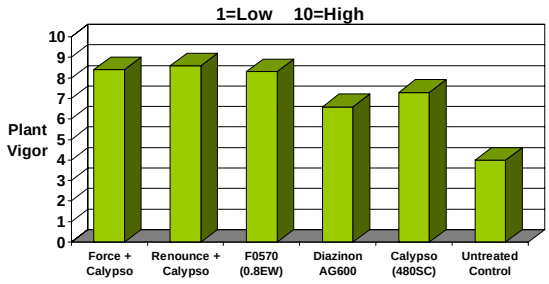
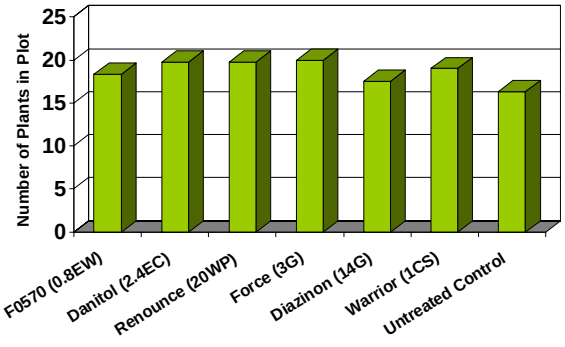


Plant Count

June 3, 2003



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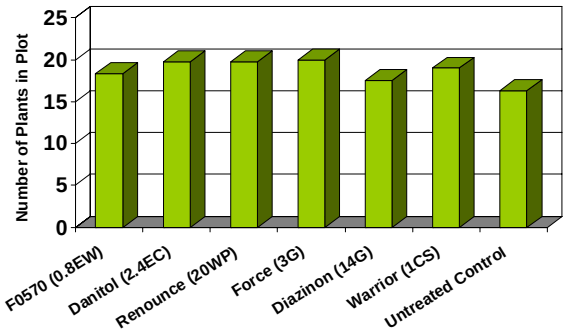

Conclusions

- F0570 (Incorporated), Danitol, Force, Warrior, Force + Calypso, Renounce + Calypso, and F0570 (Drench) provided the best control of damage by Garden Centipede
- Compared to the untreated control, Diazinon provided the lowest level of control
- All treatment differences were somewhat moderated by the tomato plants ability to recover from early feeding damage

This is a report of work in progress only. The chemicals and uses contained in this publication are experimental data and should not be considered as recommendations for use.

Until the products and their uses given in this report appear on a registered pesticide label or other legal, supplementary direction for use, it is illegal to use the chemicals as described.

WARNING ON THE USE OF CHEMICALS

Pesticides are poisonous. Always read and carefully follow all precautions and safety recommendations given on the container label. Store all chemicals in their original labeled containers in a locked cabinet or shed, away from food or feeds, and out of the reach of children, unauthorized persons, pets, and livestock.

Recommendations are based on the best information currently available, and treatments based on them should not leave residues exceeding the tolerance established for any particular chemical. Confine chemicals to the area being treated. **THE GROWER IS LEGALLY RESPONSIBLE** for residues on his crops as well as for problems caused by drift from his property to other properties or crops.

Consult your County Agricultural Commissioner for correct methods of disposing of leftover spray material and empty containers. Never burn pesticide containers.

PHYTOTOXICITY

Certain chemicals may cause plant injury if used at the wrong stage of plant development or when temperatures are too high or when overcast conditions occur. Injury may also result from excessive amounts or the wrong formulation or mixing incompatible materials. Inert ingredients such as wetters, spreaders, emulsifiers, diluents, and solvents, can cause plant injury. Since formulations are often changed by manufacturers, it is possible that plant injury may occur, even though no injury was noted in previous seasons.

No endorsement of named products is intended, nor is criticism implied of similar products which are not mentioned.

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