A. Apple (Royal Gala & Red Chief): European Red Mite: *Panonychus ulmi*

JH Biotech, Inc. **Sipcam Experimental Service**

The European red mite is found in most of the stone fruit orchards all over the world. This mite is a major pest of apple, pear, plum, and quince and may cause injury to peach, walnut, cherry, almond, grape, and roses. The mites feed by withdrawing juices and chlorophyll from the foliage, causing the leaves to become pale and assume a bronze color that impairs photosynthesis and respiration and causes a temporary increase of transpiration. Continual feeding by large populations will cause the leaves to turn brown and fall; therefore the earlier in the season the mite injury occurs, the greater the damage to fruit trees.

This trial was conducted to test the efficacy of GC-Mite under field conditions for the control the European red mite on apple, and to evaluate the different rates of GC-Mite required to control this pest.

The first trial (A) took place at Salerano Sul Lambro (Lodi) Italy on four year old Royal Gala apple trees. Plots of three trees at four replications were used to compare the GC-Mite to different chemical acaricides. The second trial (B) took place at Nave San Rocco (Trento) Italy on three year old Red Chief apple trees to evaluate the best rates of GC-Mite compared to mineral oil and Azadiracthine (biological miticides). The orchards had not been treated with any pesticide prior to the trial.

A Completely Randomized Design was employed in both trials. Applications were made with a motor powered sprayer to the point of run-off (approximately 100 gallons per acre).

Chemical Miticide Comparison (A): Treatments included a control with no treatment, Acarstin LS 0.9% solution per 100 gallons of water/acre, Omite 57 E 0.855% per 100 gallons water/acre and GC-Mite at a 1.5% solution per 100 gallons of water/acre.

Biological Miticide Comparison (B): Treatments included a control with no treatment, applications of GC-Mite at rates of 1.5%, 1.0%, 0.5%, and 0.25% per 100 gallons of water/acre, Azadiracthine at 0.15% and Mineral oil at 1.5% per 100 gallons of water/acre.

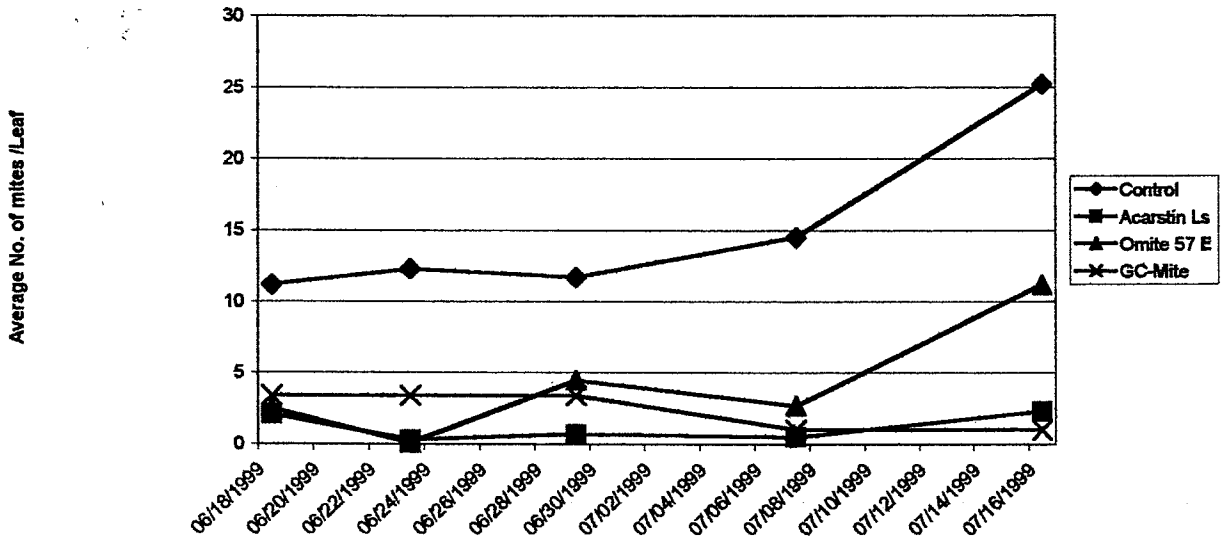
Results:

A) In the GC-Mite comparison with chemical standard miticides, after four weeks the GC-Mite treatment at the rate of 1.5% in repeated applications showed good activity.

B) In the GC-Mite comparison with biological miticides, the GC-Mite at 1% and 1.5% was more effective than the Azadiracthine on the same spray schedule. Both the GC-Mite and Azadiracthine were superior to the mineral oil treatment. GC-Mite at 1.5% showed better control over the GC-Mite at 1%, although there was no significant difference between them.

It was noticed that adequate coverage of the foliage and other infected tissues was essential for good control with GC-Mite. The GC-Mite treated foliage showed no observable phytotoxicity.

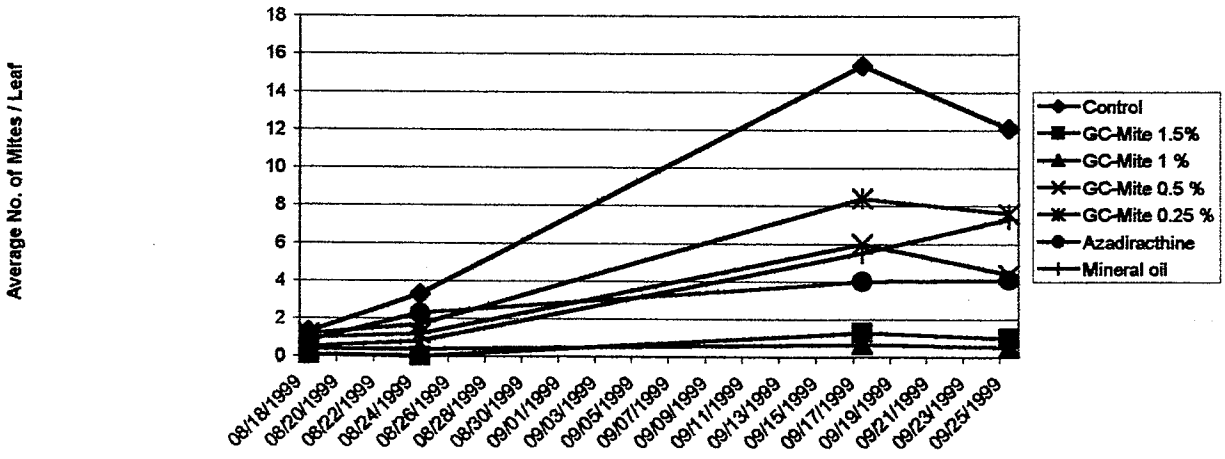
GC-Mite on European Red Mite on Apple , Italy



	06/18/1999	06/23/1999	06/29/1999	07/07/1999	07/16/1999
Control	11.2	12.3	11.7	14.5	25.2
Acarstin Ls	2.1	0.3	0.7	0.5	2.3
Omite 57 E	2.5	0.1	4.5	2.7	11.2
GC-Mite	3.4	3.4	3.4	1	1

Date

GC-Mite rates On European Red Mite , Italy



	08/18/1999	08/24/1999	09/17/1999	09/25/1999
Control	1.3	3.3	15.4	12.1
GC-Mite 1.5%	0.1	0	1.3	1
GC-Mite 1 %	0.4	0.4	0.7	0.5
GC-Mite 0.5 %	1	1.2	6	4.4
GC-Mite 0.25 %	1.2	1.7	8.4	7.6
Azadiracthine	0.8	2.3	4	4.1
Mineral oil	0.5	0.8	5.5	7.3

Date

B. Apple (Red Chief & Stayman): European Red Mite: *Panonychus ulmi*

JH Biotech, Inc. Sipcam Experimental Service

This trial was conducted to test the efficacy of GC-Mite under field conditions for the control of European red mite on apple, and to verify GC-Mite activity, phytotoxicity on apple tree against European Red Mite.

Materials and methods

The trial was set up at Lodi, Trento and Bologna, Italy. The trees were six, four years old, apple Red Chief at variety and eight years old for the Stayman variety in Bologna. GC-Mite efficacy in comparison to mineral oil experiment was conducted. Plots of 6 trees at four replications and four applications. A completely randomized design was employed, trees were marked out. Treatments were assigned to individual trees by random and marked with colored flags. This experiment was done three once on June 5th, 2000, July 19th, and July 3rd, 2000 on different ranch of 4, 6 and 8 years old apple trees on different apple varieties. Treatments included a control with no treatment, GC-Mite one gallon per 100 gallon water / acre, GC-Mite one and half gallon per 100 gallon water/acre and Biolid E1000 ml. PF per 100 gallon water / acre. Applications were made with a motor powered sprayer. All applications were applied to the point of run-off, approximately 100 gallons per acre.

Results

GC-Mite at two rates 1 % and 11/2 % compared to mineral oil (Biolid E), after four – six weeks counts at different location was analyzed, GC-Mite treatment in comparison to mineral oil Biolid E treatments and control showed that good activity when tested. No phytotoxicity was observed at any assessment timings. Table (1), (2) and (3) show the average movable (P.ulmi) stages when treated with different rates of GC-Mites compared to Biolid E (mineral oil) at three different locations in Italy.

Table (1) GC-Mite effect on European Red Mite in Lodi, Italy.

	6/5/00	6/17/00	6/27/00	7/3/00	7/17/00	7/28/00
Control	2.4	5.4	9.4	2.5	3	2.1
GC-Mite 1 %	0	0	0.3	0	0.1	0.6
GC-Mite 1 1/2 %	0.1	0	0.4	0	0.1	0.6
Biolid E	0.1	0	1.4	0	0	2.1

Table (2) GC-Mite effect on European Red Mite in Trento, Italy

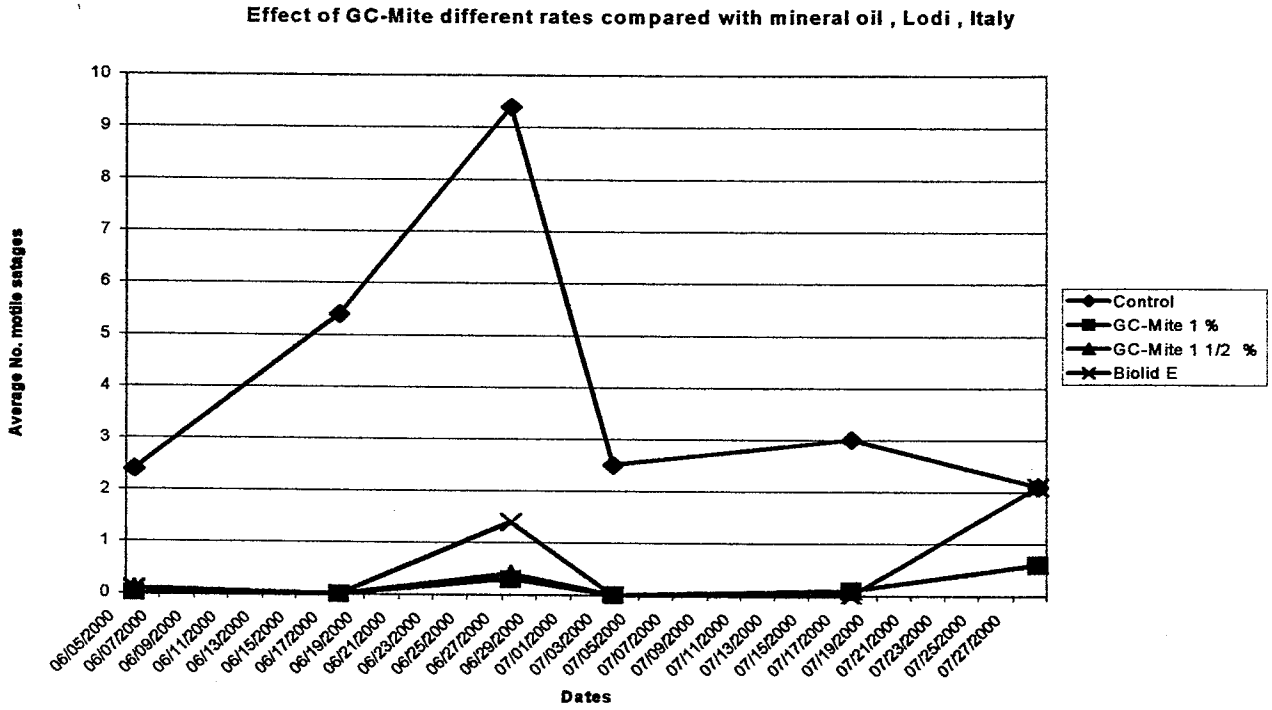
	7/19/00	7/28/00	8/10/00	8/24/00	9/5/00	9/21/00
Control	4.6	5.6	8.3	26	34.5	47.8
GC-Mite 1 %	0.6	1.2	0.6	1.3	0.3	1.5
GC-Mite 1 1/2 %	0.1	0.7	0.2	0.6	0.2	0.3
Biolid E	0.4	0.5	0.2	0.5	0.2	0.5

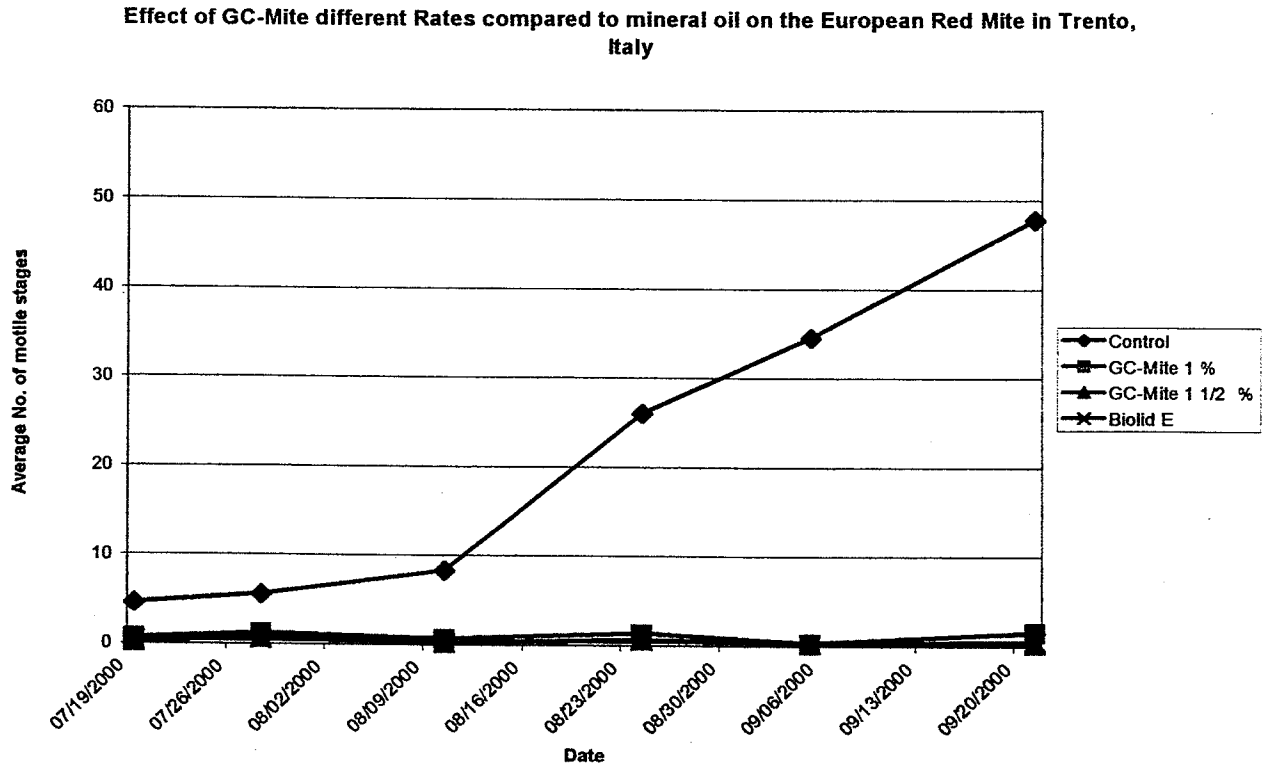
Table (3) GC-Mite effect on European Red Mite in Bologna, Italy

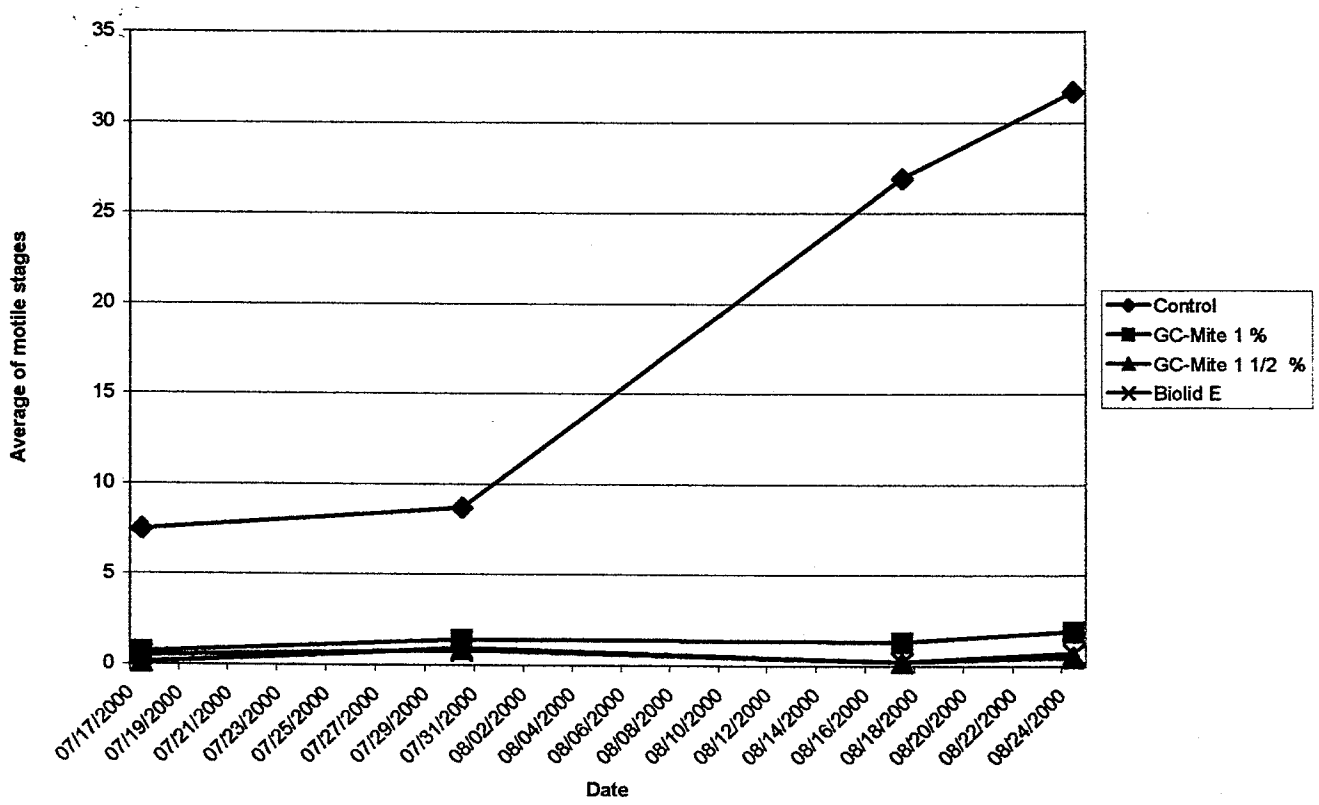
	7/17/00	7/30/00	8/17/00	8/24/00
Control	7.5	8.7	26.9	31.7
GC-Mite 1 %	0.7	1.4	1.3	1.9
GC-Mite 1 1/2 %	0.1	0.9	0.2	0.5
Biolid E	0.5	0.8	0.2	0.7

Discussion

GC-Mite at 1 ½ % as well as the mineral oil performed very well in this trial, results showed higher degree of control compared GC-Mite –1 % to control the European Red Mite motile stages. Therefore using either GC-Mite at 1 ½ rate with two weeks intervals spray will give good results for the European Red Mite control as using mineral oils without any phytotoxicity.






Effect of GC-MIte different rates compared with mineral oil , in Bologna , Italy
Average of motile stages
35
30
25
20
15
10
5
0
07/17/2000
07/19/2000
07/21/2000
07/23/2000
07/25/2000
07/27/2000
07/29/2000
07/31/2000
08/02/2000
08/04/2000
08/06/2000
08/08/2000
08/10/2000
08/12/2000
08/14/2000
08/16/2000
08/18/2000
08/20/2000
08/22/2000
08/24/2000
Date
Control
GC-Mite 1 %
GC-Mite 1 1/2 %
Biolid E

C. Apple (Royal Gala): European Red Mite: *Panonychus ulmi*

Nave S. Rocco, Trento, Italy

JH Biotech, Inc. Sipcam Experimental Service

This trial was conducted to test the efficacy of GC-Mite under field conditions for the control of European red mite on apple, and to verify GC-Mite activity, phytotoxicity on apple tree against European Red Mite.

Materials and methods

The trial was set up at Trento, Italy. The trees were four years old, apple Royal Gala variety for the GC-Mite efficacy in comparison to different acaricides. Plots of three trees at four replications and one application. A completely randomized design was employed, trees were marked out. Treatments were assigned to individual trees by random and marked with colored flags. Treatments included a control with no treatment, Metacar (hexythiazox 105 WP) 50 g FP per 100 gallon water / acre, Metacar (hexythiazox 105 WP) 50 g F.P and Biolid E (mineral oil 80 % E0 per 100 gallon water / acre and Metacar (hexythiazox 105 WP) 50 g FP +GC-Mite 1 % per 100 gallon water / acre. Applications were made with a motor powered sprayer. All applications were applied to the point of run-off, approximately 100 gallons per acre.

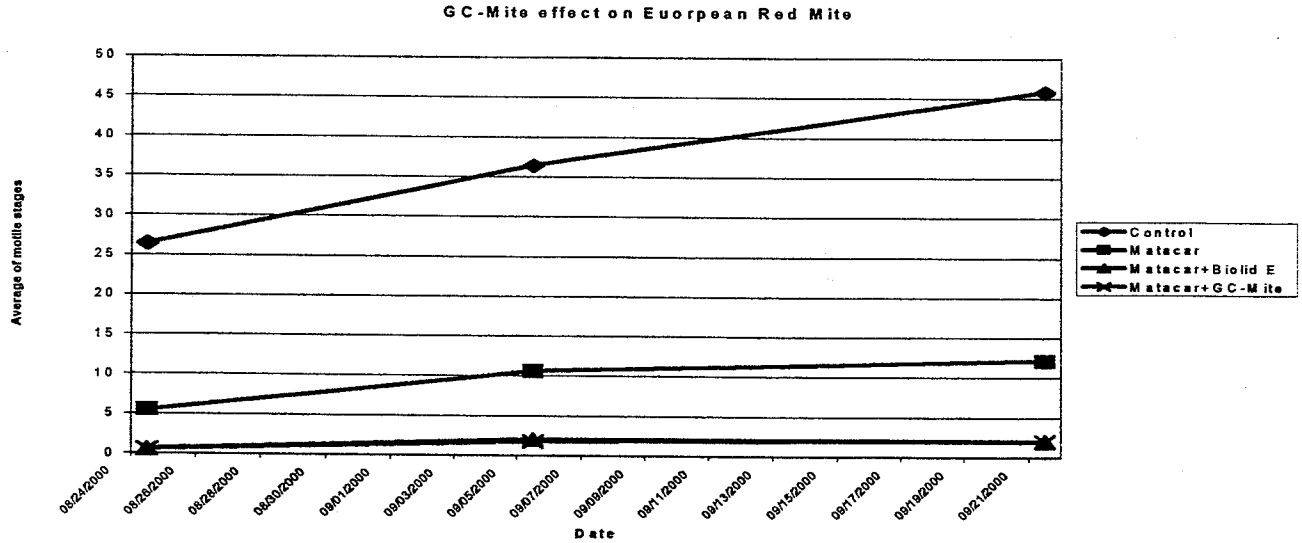
Results

Metacar + GC-Mite comparison with chemical standard miticides. After 71 days the, Metacar = GC-Mite treatment in comparison with other treatments and control showed that good activity when tested. No phytotoxicity was observed at any assessment timings. Table (1) the average movable (*P.ulmi*) stages when treated with, Metacar + GC-Mite and other standard miticides.

Date of application	Aug.24 – T +43 days	Sept.5th – T+ 55 days	Sept.21st – T + 71 days
Control	26.4	36.4	45.8
Matacar	5.5	10.6	12.1
Matacar+Biolid	0.6	2	2
Matacar+GC-Mite	0.6	1.8	2

Discussion

GC-Mite+ Matacar performed very well in this trial, results showed higher degree of control compared of the other applications. GC-Mite + Matacar combined has 96.6 % control of the European Read Mite motile stages. Therefore, using either GC-Mite combined with Matacar or Matacar combined with Biolid E will give good results for more than 2 months of application.



D. Apple: **Spider mite:** *Tetranychus urticae* **Koch**

Dr. Gamal Abdel Mageed
Head of Acarology Dept., Plant Protection Res. Institute, ARC. Giza, Egypt

The tetranychid mites are plant feeders of considerable economic importance, attacking fruit and vegetable crops. They usually feed on the leaves injuring the epidermis and resulting in blotching stippling or bronzing and sometimes accompanied by leaf fall. Some of the species are most specific but the majority of is polyphagous and has a wide range of hosts. Severe mites feeding result in economic reduction in the quality and quantity of crop production.

A complete randomized block design with four replicates (six trees/replicate) was used. Two concentrations, 1000 cc (1 %) and 2000 cc (2 %) per 100 liter of water, from the product, GC-Mite 20 % E.C were tested in each of the four experiments. Sample size was 80 leaves from each treatment (20 leaves per replicate). Weekly sampling was collected randomly after spraying. A pre-count was taken just before spraying at each replicate. Lower surface of the leaves was examined carefully, alive mites were counted and recorded. All sprays were applied by using a motor sprayer of 600 liters capacity. Percentage of reduction in all motile stages was estimated according to the equation of **Henderson and Tilton (1955).**

RESULTS and DISCUSSION

Efficiency of the natural product, GC- Mite 20% EC, at the recommended concentrations 1% and 2%, on the motile stages of the spider mites, *Tertranychus urticae* infesting apple was evaluated under the Egyptian environment.

Data in table (1) and fig. (1) indicated that the GC-Mite, at the concentrations of 1 and 2 %, gave 84.3 and 91.8 % reduction, respectively in the population of *T. urticae* on apple trees.

Table (1): Evaluation of different concentrations of GC-Mite 20 % on motile stages of the spider mite, *Tetranychus urticae* Koch on apple trees in Egypt

Treatment	Rate of application	Pre-count/ 80 leaves	No. of motile stages / 80 leaves and % reduction after treatments								Average of Reduction %
			One week		Two weeks		Three weeks		Four weeks		
			No.	%	No.	%	No.	%	No.	%	
T1	1 %	896	143	85.55	152	85.04	191	83.94	221	82.73	84.31
T2	2 %	923	71	93.03	83	92.07	104	91.51	126	90.44	91.76
Control	-	784	866	-	889	-	1041	-	1120	-	

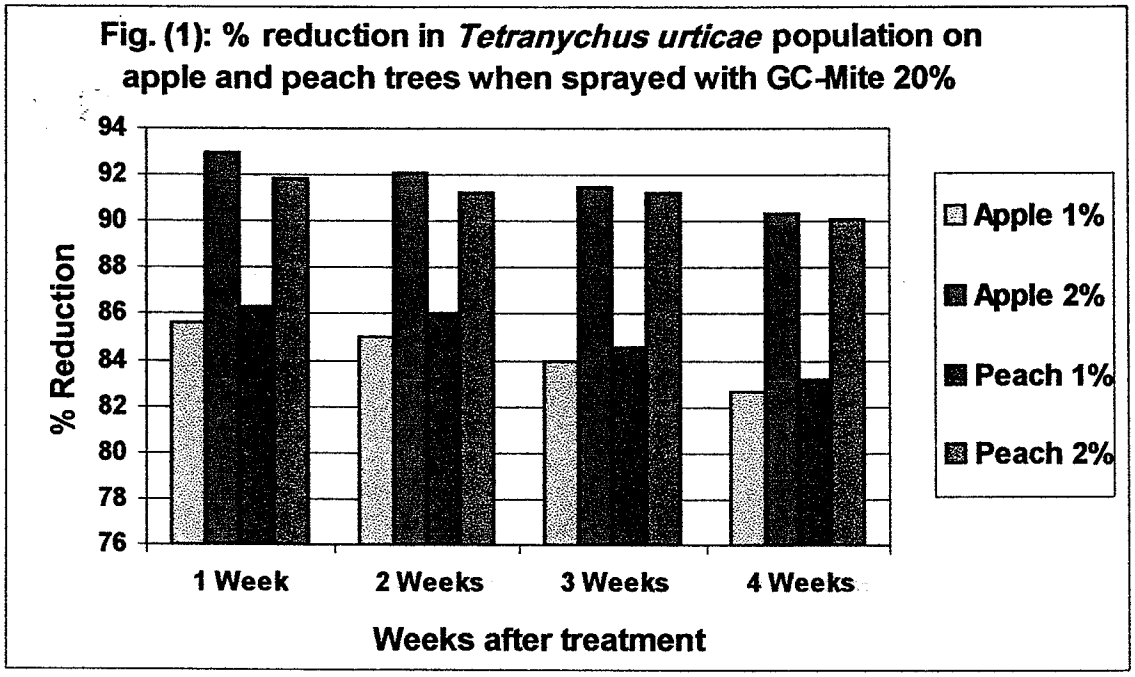


Fig. (1): % reduction in *Tetranychus urticae* population on apple and peach trees when sprayed with GC-Mite 20%
% Reduction
94
92
90
88
86
84
82
80
78
76
1 Week
2 Weeks
3 Weeks
4 Weeks
Weeks after treatment
Apple 1%
Apple 2%
Peach 1%
Peach 2%

E. Avocado: **Avocado Thrips:** *Scirtothrips persea*
Persea mite: *Oligonychus persea*

JH Biotech, Inc. Plant Protection Department

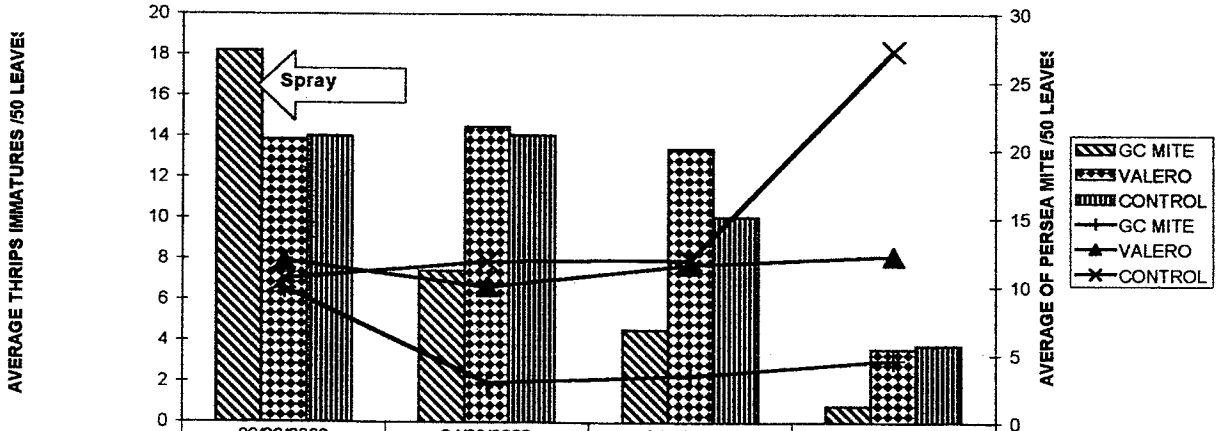
Avocado thrips and Persea mite at high densities can cause partial or total defoliation of trees, resulting in sunburn to young fruit and exposed trunks and premature fruit drop. Avocado thrips feeding activity damages foliage on both upper and lower leaf surfaces. Adult and immature Avocado thrips feed on developing fruit by hiding under the calyx, causing the scarring that appears as "alligator skin" on mature fruit.

Control of Avocado thrips and Persea mite on avocados at Saticoy, California, 2000: The trial took place at Sharp ranch on six year old avocado trees. Twenty-one trees in one row were chosen and a pre-count for both Avocado thrips and Persea mite was done. This pre-count consisted of 10 new leaves from each tree for the Avocado thrips and 10 moderately aged to old leaves for Persea mite. The field had not been treated with any pesticide prior to the trial. Temperatures ranged from 40°F at night to 70°F during the day and no rain occurred during the trial.

A Completely Randomized Design was employed, using three treatments and seven replications. Treatments included a control with no treatment, Valero at 1% solution per 100 gallons of water, and GC-Mite at a 2% solution per 100 gallons of water with 5% Natural Wet added to insure better coverage. Applications were made with a motor powered backpack sprayer to the point of run-off (approximately 100 gallons per acre). Applications were applied in the morning once at the beginning of the trial and counts for both pests were taken four times.

Results: After four weeks, the GC-Mite treated trees showed a statistically higher level of control on both Avocado thrips and Persea mite populations than either the control or the Valero 1% solution. It was noticed that adequate coverage of the foliage and other infected tissues was essential for good control with GC-Mite. The GC-Mite treatment also appeared to reduce incidence of Persea mite webbing. The GC-Mite treated foliage showed no observable phytotoxicity. In the Valero trial phytotoxicity was observed.

GC MITE ON AVOCADO THRIPS AND PERSEA MITE



	03/23/2000	04/03/2000	04/10/2000	04/19/2000
GC MITE	18.2	7.42	4.54	0.82
VALERO	13.84	14.46	13.4	3.6
CONTROL	13.98	14.04	10.04	3.78
GC MITE	9.82	2.92	3.4	4.6
VALERO	11.84	9.94	11.56	12.24
CONTROL	10.54	11.8	11.92	27.26

Avocado Thrips

Persea Mite

F. Citrus: **citrus flat mite: *Brevipalpus californicus***

Dr. Gamal Abdel Mageed **citrus rust mite: *Phyllocoptruta oleiovora* Ashmed**
Head of Acarology Dept., Plant Protection Res. Institute, ARC. Giza, Egypt

A complete randomized block design with four replicates (six trees/replicate) was used. Two concentrations, 1000 cc (1 %) and 2000 cc (2 %) per 100 liter of water, from the product, GC-Mite 20 % E.C were tested in each of the four experiments. Sample size was 80 leaves from each treatment (20 leaves per replicate). Weekly sampling was collected randomly after spraying. A pre-count was taken just before spraying at each replicate. Lower surface of the leaves was examined carefully, alive mites were counted and recorded.

For the citrus fruit trees, sample size, for the citrus rust mite, was 12 fruit and 40 leaves per treatment per sampling date while it was 80 leaves and 80 fruits for the citrus flat mite. Fruit samples were examined directly on the trees using a manual lens (10X) while leaf samples were transferred to the laboratory for inspection and counting using a stereomicroscope. All sprays were applied by using a motor sprayer of 600 liters capacity. Percentage of reduction in all motile stages was estimated according to the equation of **Henderson and Tilton (1955).**

RESULTS and DISCUSSION

Efficiency of the natural product, GC- Mite 20% EC, at the recommended concentrations 1% and 2%, on the motile stages of the spider mites, *Brevepalpus callfornicus* and *Phyllocoptruta oleiovra* infesting citrus fruit trees was evaluated under the Egyptian environment.

Data in tables (3 & 4) and fig (2) pointed out that the natural product GC-Mite 20 %, when it was sprayed on the citrus trees, at the concentrations of 1 and 2 %, gave reduction of 83.07 and 92.6 %, respectively on the motile stages of the citrus flat mite, *B. callfornicus* infesting the leaves and 81.17 and 92.40 %, respectively on the motile stages infesting the fruits. 82.12 and 92.5 % were the total average of the percentage of reduction in the motile stages of the pest on both the leaves and the fruits, at the concentrations of 1 and 2 %, respectively.

Table (3): Evaluation of different concentrations of GC - Mite 20 % on the motile stages of the spider mite, *Brevipalpus californicus* on citrus leaves in Egypt.

Treatment	Rate of application	Pre-count / 80 leaves	No. of motile stages/ 80 leaves and % reduction after treatments								Average of Reduction %
			One week		Two weeks		Three weeks		Four weeks		
			No.	%	No.	%	No.	%	No.	%	
T1	1 %	611	118	83.28	129	82.99	179	83.07	209	82.97	83.07
T2	2 %	533	44	92.90	51	92.44	53	93.53	85	91.54	92.60
Control	-	598	688	-	754	-	913	-	1124	-	

Table (4): Evaluation of different concentrations of GC - Mite 20 % on the motile stages of the spider mite, *Brevipalpus californicus* on citrus fruits in Egypt.

Treatment	Rate of application	Pre-count/ 80 fruits	No. of motile stages/ 80 fruits and % reduction after treatments								Average of Reduction %
			One week		Two weeks		Three weeks		Four weeks		
			No.	%	No.	%	No.	%	No.	%	
T1	1 %	800	168	82.39	182	81.82	224	80.75	242	79.75	81.17
T2	2 %	811	62	93.59	76	92.51	96	91.86	105	91.64	92.40
Control	-	818	976	-	1024	-	1190	-	1268	-	

Data in tables (5 & 6) and fig. (3) demonstrated that the natural acaricide GC-Mite 20 %, when sprayed against the motile stage of the citrus rust mite, *P. oleiovora*, at the concentrations of 1 and 2 %, gave percent reduction of 46.69 and 61.12 % on leaves and 43.21 and 59.46 % on fruits, with a total average of 44.95 and 60.29 % on both leaves and fruits, respectively.

Table (5): Evaluation of different concentrations of GC - Mite 20 % on the motile stages of the citrus rust mite, *Phyllocoptruta oleivora* Ashmed on citrus leaves in Egypt.

Treatment	Rate of application	Pre-count/ 40 leaves	No. on motile stages / 40 leaves and % reduction after treatments								Average of Reduction %
			One week		Two weeks		Three weeks		Four weeks		
			No.	%	No.	%	No.	%	No.	%	
T1	1 %	349	223	45.33	258	43.91	293	42.64	324	40.98	43.21
T2	2 %	386	146	67.64	185	63.63	256	54.68	292	51.91	59.46
Control	-	302	353	-	398	-	442	-	475	-	-

Table (6): Evaluation of different concentrations of GC-Mite 20% on the motile stages of citrus rust mite, Phyllocoptruta oleiuora Ashmed on citrus fruits in Egypt.

Treatment	Rate of application	Pre-count per 12 fruits	No. of motile stages / 12 fruits and % reduction after treatments								Average of Reduction %
			One week		Two weeks		Three weeks		Four weeks		
			No.	%	No.	%	No.	%	No.	%	
T1	1 %	704	426	48.9	456	48.99	612	44.36	692	44.52	46.69
T2	2 %	628	253	65.90	295	63.01	412	58.01	472	57.58	61.12
Control	-	578	684	-	734	-	903	-	1024	-	

G. Eggplant: **Spider mite:** *Tetranychus urticae* **Koch**

Dr. Gamal Abdel Mageed
Head of Acarology Dept., Plant Protection Res. Institute, ARC. Giza, Egypt

Procedure: An experiment was conducted on eggplant against the motile stages of *Tetranychus urticae* Koch. (which is considered the most serious mite species attacking eggplant in Egypt). A complete randomized block design with four replicates was used. Plot size was 7 X 12m.

Two concentrations, 1000 cc (1 %) and 2000 cc (2 %) per 100 liter of water, from the product, GC-Mite 20 % E.C were tested in experimental plots. Sample size was 40 leaves from each treatment (10 leaves per replicate).

Weekly samples were collected randomly after spraying. A pre-count was taken just before spraying at each replicate. Two square inches per eggplant leaf were examined at the lower surface and number of alive mites were counted and recorded.

RESULTS and DISCUSSION

Data in table (7) and fig. (4) revealed that the natural product GC-Mite 20 %, when used against the motile stages of *T. urticae* infesting eggplant, at concentrations 1 and 2 %, gave 83.3 and 91.28 % reduction in the population density of the mite, respectively.

Table (7): Evaluation of different concentrations of GC-Mite 20% on the motile stages of the spider mite, *Tetranychus urticae* Koch. Infesting eggplant in Egypt

Treatment	Rate of application	Pre-count per 80 inches	No. of motile stages / 80 square inches and % reduction after treatments								Average of Reduction %
			One week		Two weeks		Three weeks		Four weeks		
			No.	%	No.	%	No.	%	No.	%	
T1	1 %	702	112	85.97	144	84.22	184	83.12	223	79.91	83.30
T2	2 %	734	56	93.29	82	91.40	108	90.52	117	89.91	91.28
Control	-	640	728	-	832	-	994	-	1012	-	

Obtained results showed that the natural acaricide GC-Mite 20 % exceeded the threshold promotion level (70 %) in case of the spider mite, *T. urticae* on eggplant, at the two concentrations 1 and 2 %. Also, it gave 100 % reduction in the mite population when it was sprayed twice.

Therefore, it could be concluded that GC-Mite 20 % could be recommended to be used against *T. urticae* on eggplant, at 1 % concentration in Egypt and could be sprayed only once at the proper time.

Generally, the product has shown promising results on the key mite species on both fruit trees and vegetables without any phytotoxicity on the plants or adverse effects on the crops.

H. Grapes (Chardonnay) — Willamette spider mite

Chuck Ingels, Farm Advisor, UC Cooperative Extension, Sacramento County

Spray trials were conducted in 2000 to examine the effects of several new and registered products on Willamette spider mite. The trials were conducted in a Chardonnay vineyard on Lambert Rd. (Pierson-Lambert) in Sacramento County. The vineyard is flood irrigated and the spacing is 8 x 12 ft.

Methods

The experimental design for the trials was a randomized complete block design, with four replications and four vines in each replicate. Spider mite sprays were applied July 3 and follow-up sprays for two treatments (Acaritouch and Biomite) were applied 1 and 2 weeks later. The sprays were applied at 100 gal./acre with an Echo air blast backpack sprayer. Surfactants were used where necessary.

In both trials, ten leaves per replicate were gathered once before treatments were applied, weekly after treatment for four weeks, and once again on week 8. They were transported in a cooler for examination in the lab. Leafhopper nymphs were counted using a large magnifying lens. Mites were removed using a mite brushing machine and were counted with a dissecting scope. The materials tested and the rates used are listed in Table 1.

Table 1. Treatments and rates used. (Sprayed using 100 gal. water/acre = 13.4 liters/4 reps)

Spider Mite Trial

Product	Chemical Name	Company	Rate/ Acre	Trial Rate	No. of Applics.	Surfact.
Acaritouch		Toagosei	13.3 oz.	13.9 ml	2 (7d)	None
Acaritouch		"	26.7 oz.	27.8 ml	2 (7d)	"
Biomite		Natural Plant	0.59 gal.	78.75 ml	1	"
Biomite		Products	0.59 gal.	78.75 ml	2 (14d)	"
GC-Mite	cinn. oil (20%), garlic (40%), cottonseed oil (34%)	J.H. Biotech	2 gal.	266.9 ml	1	Latron 5 oz.
Valero	cinnamaldehyde (30%)	Mycotech	1 gal.	133.5 ml	1	"
Valero	"	"	3 qts. + 5 lbs. KNO^3	100.1 ml 80 g	1	"
Danitol	fenpropathrin	Valent	8 fl. oz.	8.3 ml	1	"
Agri-Mek	abamectin	Novartis	4.5 fl. oz.	4.7 ml	1	RNA 85 1 q
Omite	propargite	Uniroyal	6 lbs.	96 g	1	"
Water	--	--	100 gal.	13.4 ltrs.	1	--

Results Spider mite populations declined the week after applying the treatments, even in the untreated vines. The first week after spraying, all treatments significantly reduced mite populations compared to water alone (Fig. 1). Mite populations in the Valero + KNO_3 treatment were significantly greater than those in six other treatments. The second week after spraying, mite populations in all treatments were similar and all were significantly lower than water alone (Fig. 2). Likewise, there were no differences between treatments in weeks 3, 4 and 8, (data not shown). The post-treatment average during the 4 weeks after spraying showed that Biomite 1x and Omite reduced mites significantly more than some other treatments (Fig. 3).

Figure 1. Effects on Mites After 1 Week - 2000

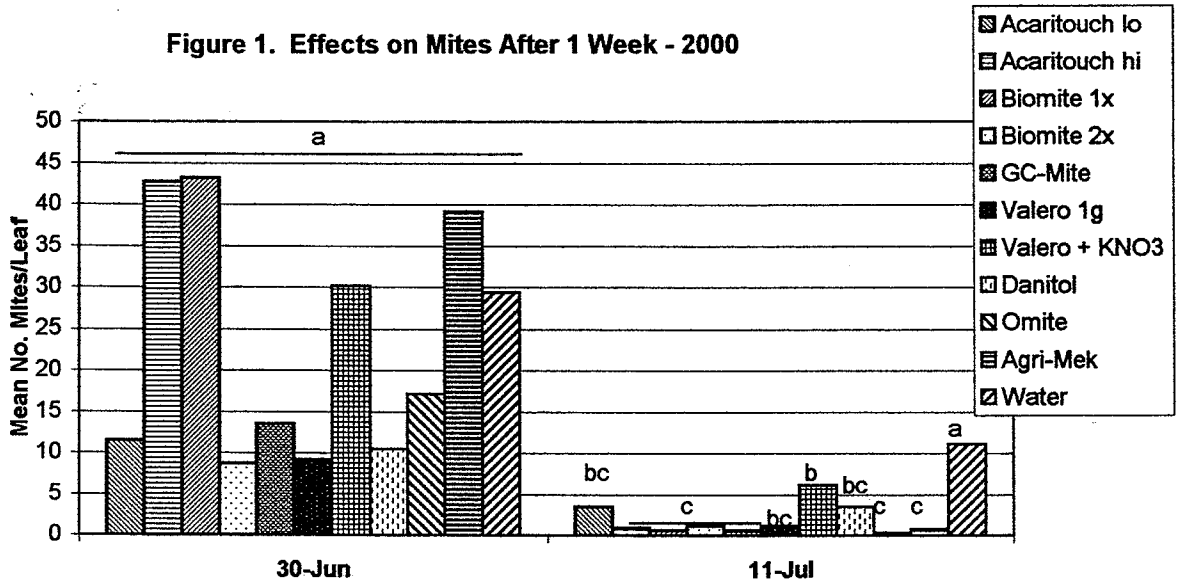


Figure 2. Effects on Mites After 2 Weeks - 2000

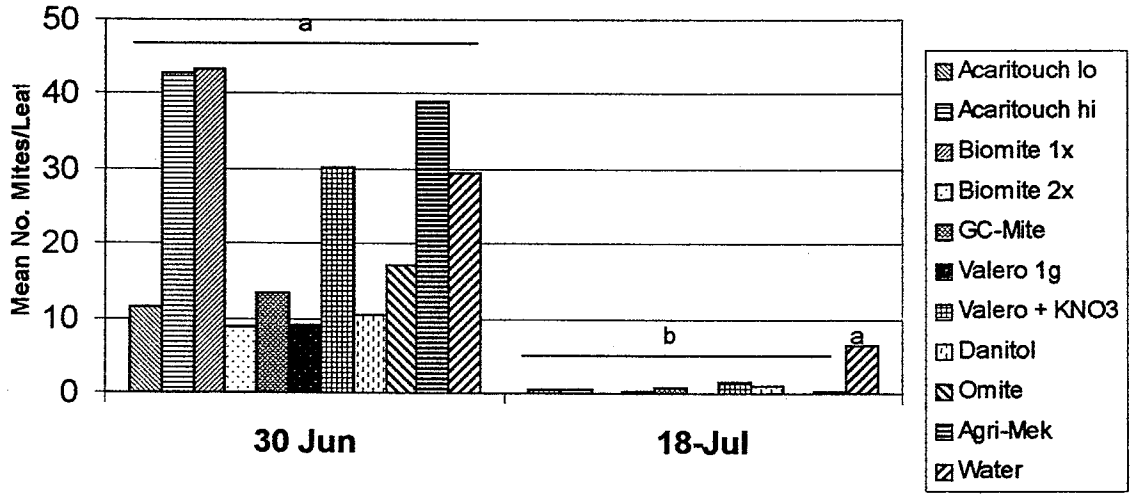
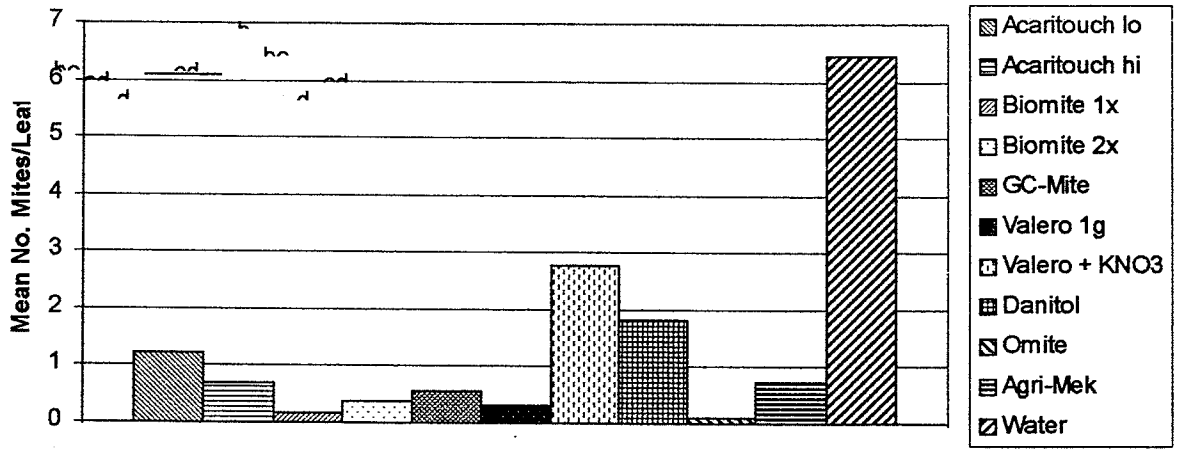


Figure 3. Effects on Mites - 4 Wk. Post-Treat. Avg. - 2000



I. Grapes (Chardonnay) European Red Mite (*Panonychus ulmi)*

JH Biotech, Inc. Sipcam Experimental Service

This trial was conducted to test the efficacy of GC-Mite under field conditions for the control of European red mite on grapes, and to verify GC-Mite activity, phytotoxicity on grape vineyards tree against European Red Mite.

Materials and methods

The trial was set up at Alba , Italy. The vines were two years old, Cabernet variety for the GC-Mite efficacy in comparison to Magister 200 SC (fenazquin 10.32 % SC . Plots of 10 vinestocks , four replications and one application at August 10th 2000 . A completely randomized design was employed, trees were marked out. Treatments were assigned to vinestocks by random and marked with colored flags. Treatments included a control with no treatment, Magister 200 SC 0,750 ml. FP per 100 gallon/acre and GC-Mite 1 % per 100 gallon water / acre. Applications were made with a motor powered sprayer. All applications were applied to the point of run-off, approximately 100 gallons per acre.

Results

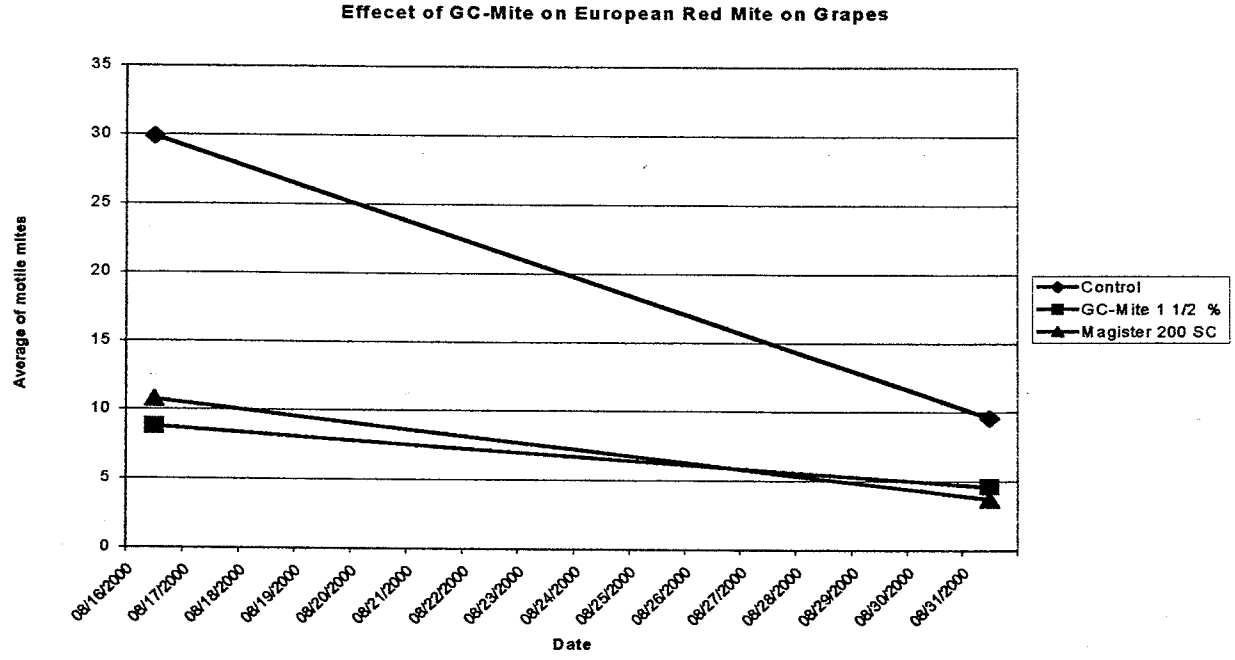
GC-Mite in comparison to Magister 200 SC ,after 21 days from application result showed that GC-Mite treatment had good activity when tested. No phytotoxicity was observed at any assessment timings. Table (1) the average movable (*P.ulmi*) stages when treated with, GC-Mite and other standard miticides.

Table (1) GC-Mite effect on European Red Mite in Alba , Italy. on grapes

	8/16/00	8/31/00
Control	29.9	9.6
GC-Mite 1 1/2 %	8.8	4.6
Magister 200 SC	10.8	3.7

Discussion

GC-Mite performed very well in this trial, results showed the same degree of control compared to other application. GC-Mite has 61.8 % control within three weeks on the European Read Mite motile stages. Therefore using either GC-Mite or Magister will give good results for more than 21 days of application.



J. Peaches : **Spider mite:** *Tetranychus urticae* **Koch**

Dr. Gamal Abdel Mageed
Head of Acarology Dept., Plant Protection Res. Institute, ARC. Giza, Egypt

A complete randomized block design with four replicates (six trees / replicate) was used. Two concentrations, 1000 cc (1 %) and 2000 cc (2 %) per 100 liter of water, from the product, GC-Mite 20 % E.C were tested in each of the four experiments. Sample size was 80 leaves from each treatment (20 leaves per replicate). Weekly sampling was collected randomly after spraying. A pre-count was taken just before spraying at each replicate. Lower surface of the leaves was examined carefully, alive mites were counted and recorded. All sprays were applied by using a motor sprayer of 600 liters capacity. Percentage of reduction in all motile stages was estimated according to the equation of **Henderson and Tilton (1955).**

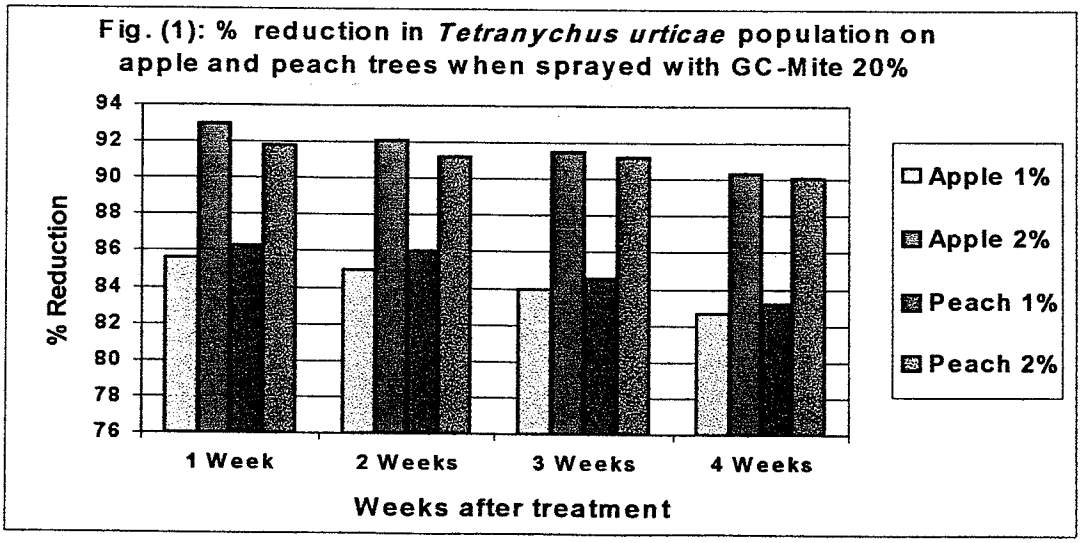
RESULTS and DISCUSSION

Efficiency of the natural product, GC- Mite 20% EC, at the recommended concentrations 1% and 2%, on the motile stages of the spider mites, *Tertranychus urticae* infesting peach trees was evaluated under the Egyptian environment.

Data in table (2) and fig. (1) showed 85 and 91 % reduction in the population density of motile stages of *T. urticae* by using the GC-Mite, at the concentrations of 1 and 2 %, on peach trees, respectively.

Table (2): Evaluation of different concentrations of GC-Mite 20 % on motile stages of the spider mite, *Tetranychus urticae* Koch on peach trees in Egypt.

Treatment	Rate of application	Pre-count/ 80 leaves	No. of motile stages /80 leaves and % reduction after treatments								Average Reduction %
			One week		Two weeks		Three weeks		Four weeks		
			No.	%	No.	%	No.	%	No.	%	
T1	1 %	1236	170	86.32	202	86.03	213	84.59	226	83.23	85.04
T2	2 %	1182	98	91.75	122	91.18	117	91.15	128	90.07	91.04
Control	-	1214	1324	-	1358	-	1421	-	1221	-	



K. Raspberry — McDaniel mite

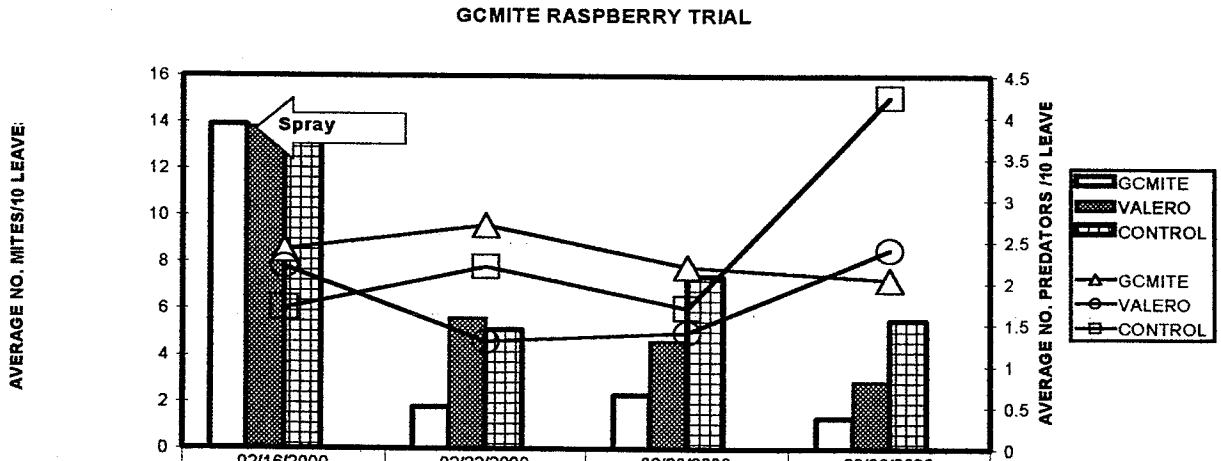
JH Biotech, Inc. Plant Protection Department

High densities of the McDaniel mite can result in browning of the entire plant and leaf drop. Mite-induced defoliation opens the plant canopy, increasing the risk of lower quality fruits and premature fruit drop. The McDaniel mite lifecycle has seven to nine generations depending on the temperature and can overwinter in protected niches, so dormant sprays are ineffective. Summer treatments are effective, but large infestations and profuse webbing make spray coverage difficult.

Control of McDaniel mite at Oxnard, California, 2000: The trial took place at Riter Brothers ranch on field grown raspberries. The grower had previously released predatory mites (*Phtoseiulus persimilis*) to suppress mite populations as part of an IPM program. Three rows of 21 plants were chosen and a pre-count using 10 leaves for the McDaniel mite and ***P. persimils*** was done. The field had not been treated with any pesticide prior to the trial. Temperatures ranged from 40°F at night to 70°F during the day and no rain occurred during the trial.

A Completely Randomized Design was employed, using three treatments and seven replications. Treatments included a control with no treatment, Valero at 1% solution per 100 gallons of water, and GC-Mite at a 2% solution per 100 gallons of water with 5% Natural Wet added to insure better coverage. Applications were made with a motor powered backpack sprayer to the point of run-off (approximately 100 gallons per acre). Applications were applied in the morning once at the beginning of the trial and counts for both pests were taken four times.

Results: After four weeks, the GC-Mite treated vines showed a statistically higher level of control the McDaniel mite populations than either the control or the Valero 1% solution. It was noticed that adequate coverage of the foliage and other infected tissues was essential for good control with GC-Mite. The GC-Mite treatment showed very little effect on the predatory mite (*Phtoseiulus persimilis*) population and also appeared to reduce incidence of Persea mite webbing . The GC-Mite treated foliage showed no observable phytotoxicity. In the Valero trial phytotoxicity was observed.



	02/16/2000	02/22/2000	02/28/2000	03/06/2000
GCMITE	13.9	1.8	2.3	1.33
VALERO	13.8	5.6	4.6	2.9
CONTROL	13.9	5.1	7.4	5.5
GCMITE	2.4	2.7	2.2	2.04
VALERO	2.2	1.3	1.4	2.4
CONTROL	1.7	2.2	1.7	4.25

Spider Mites

Predatory Mites