

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.

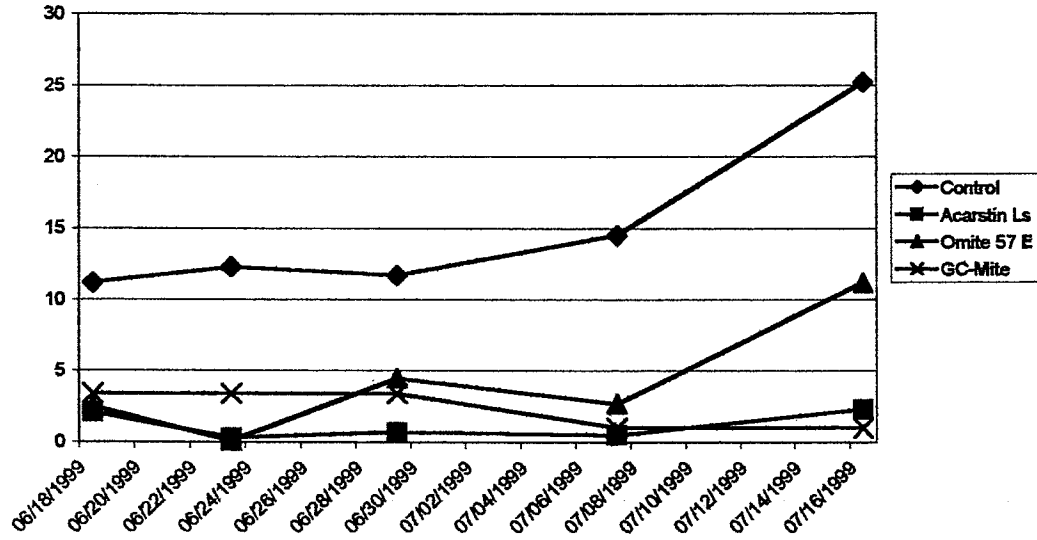
Results:

- 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

Average No. of mites /Leaf

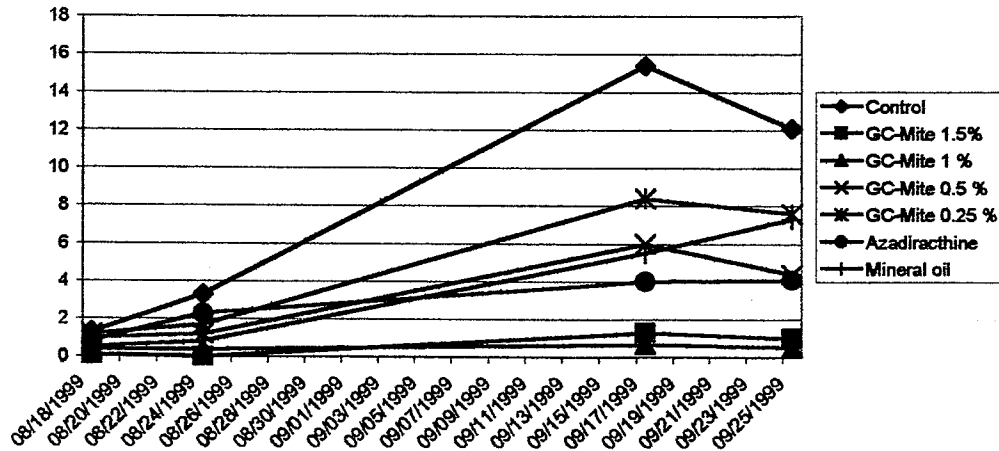


	06/18/1999	06/23/1999	06/29/1999	07/07/1999	07/16/1999
Control	11.2	12.3	11.7	14.5	25.2
Acarstin Ls	2.1	0.3	0.7	0.5	2.3
Omite 57 E	2.5	0.1	4.5	2.7	11.2
GC-Mite	3.4	3.4	3.4	1	1

Date

GC-Mite rates On European Red Mite , Italy

Average No. of Mites / Leaf



	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