WAX TREATMENTS MEETING PROBIT 9 REQUIREMENTS FOR CONTROLLING *BREVIPALPUS CHLEENSIS* IN CHERIMOYAS AND CITRUS FRUIT

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The grape flat mite ***Brevipatpus chilensis*** **baker** (Acari : Tenuipalpidae) is a tiny arthropod commonly found in Chile on various wild and commercially grown hosts.

Among the hosts with economic importance are grapes (both table and wine varieties), citrus fruit kiwifruit and cherimoyas.

Although this pest seldom causes damage of economic importance and actually doesn't require to be scheduled for field treatments, it is of quarantine concern for the USA and thus, for exportation of fresh fruit likely to carry the mite, a quarantine treatment must be applied in the country of origin or in the U. S., upon arrival of the shipment

For this purpose, T 10 1 (a) treatment is approved by the USDA for treating these commodities, that is a 2- fumigation with methyl bromide (MB) and so, I 00% of fresh table gapes exported to the USA from Chile are fumigated

Nevertheless, some species such as cherimoyas **(Annona cherimolla)** don't tolerate a MB fumigation well and phytotoxicity symptoms as well as rot were soon shown. For this reason, an alternative treatment was developed in Chile, based on the hypothesis that is a wax cover was spread over the body of the mite, it would affect the respiratory system of the organism, causing asphyxiation and so death.

Many tests were carried out in all of the developing stages of the mite, in order to demonstrate that the theoretical supposition was true. The investigation was conducted by Eugenio Lopez Lapport, Research Entomologist of Universidad Catolica de Valparaiso.

As statistical tests showed that probit 9 was satisfied, the new treatment was presented to the United States Department of Agriculture (USDA) asking for an analysis.

After studying and doing supervision of the tests, the treatment was approved by the USDA and the code T102 (b) was assigned, allowing fresh cherimoyas to be exported to the USA.

This nonrequiring MB treatment is currently applied as follows:

STAGES	DESCRIPTION
I	Dip IN A SOAP/WATER SOLUTION (1:3000) FOR 20 SECONDS
II	RINSE IN CLEAN WATER TO REMOVE THE SOAP
III	DRY WITH AIR
IV	Dip IN A TANK WITH LIQUID PLANT ORIGINED WAY (THE SAME COMMONLY USED FOR WAXING STONE FRUIT) FOR 20 SECONDS.
V	DRY IN A HOT AIR TUNNEL

Even though this treatment provides an outstanding degree of control in cherimoyas and limes, in other citrus fruit it wasn't as effective. The reason is because those fruits have a critical point, located in the areas in which the rind of the fruit and the stalk joins, and in this area the wax is not able to penetrate in a sufficient amount as to completely cover the body of the mite.

Efforts were undertaken to solve this difficulty and after tying several methods, it was found that the use of ultrasonic waves help to improve the penetrability of the wax, fully reaching the critical points of the fruit.

At present, the final treatment is being developed by Universidad Catolica de Valparaiso's staff, leaded by Professor Eugenio Lopez L.

The same kind of treatments could be useful for controlling mites of great economic importance such as ***Brevipalpus phoenicis*** (of quarantine concern for Chile) on citrus fruit and thus an evaluation is recommended. This will mean to depend on a treatment that could allow the movement of fruits from areas where this mite occurs to areas in which it does not exist.