

## **Effective biological control of Sader reactivates the productivity of citrus growers from Oaxaca, Chiapas and Morelos**

With this phytosanitary strategy, Oaxaca reduced infestation levels by almost 77%; Chiapas, 45%, and Morelos 92%



The biological control strategy applied by the National Service for Agro-Alimentary Public Health, Safety and Quality (Senasica) to fight citrus blackfly (*Aleurocanthus woglumi*) in Oaxaca, Chiapas and Morelos significantly reduced the presence of this pest and made possible the economic reactivation of Mexican lime producers.

With this phytosanitary strategy, the state of Oaxaca reduced the level of blackfly infestation by almost 77 percent over a period of three years; in Chiapas, the presence of the plague fell 45 percent in two years; and in Morelos, it decreased 92 percent after four years of work.

This phytosanitary method implemented by Senasica technicians in the three Mexican entities consists of using parasitoid wasps (*Encarsia perplexa* and *Amitus hesperidium*) and the entomopathogenic fungus *Aschersonia aleyrodis*, which come from donor orchards and are introduced into commercial production units and backyards with pest presence in order to reduce fly population.

It should be noted that in 2013 one of the most significant outbreaks in history of black flies occurred in Oaxaca and the State of Mexico, which affected at least 1,500 hectares and caused numerous losses in the production of Mexican limes.

The breakdown of ecological balance due to an indiscriminate application of insecticides was identified to be the common cause of such pests in these cases, as well as those occurring later on in Morelos and Chiapas.

That is why the agency of Secretariat of Agriculture and Rural Development (Sader) invites producers to approach the Committee on Plant Health in their state in order to fight pests in a timely and appropriate manner.

It is important to highlight that biological control is also carried out in commercial orchards and backyards of Baja California Sur, Quintana Roo and Yucatán, where the parasitoid *Tamarixia radiata* is released and entomopathogenic fungi are applied, in addition to pruning and using acaricides in a focused manner to fight pests such as Citrus greening disease (HLB).

Entomopathogenic fungi are another method of biological control that is also used against the plague of the Central American locust (*Schistocerca piceifrons*) and to control the brown citrus aphid (*Toxoptera citricide*), as well as to control the Asian citrus psyllid, which transmits HLB, and the spotted wing drosophila (*Drosophila suzukii*).

The Biological Control Branch of the National Phytosanitary Reference Center recommends the specific use of validated biological control agents to address HLB, Citrus Tristeza Virus (VTC) and Citrus Leprosy, which are regulated pests in the country.

It should be remembered that the first success of biological control in Mexico dates back to 1949, when parasitoid wasps originating in Asia were used.

Currently, after several diagnostic routes of the pest in the three entities that have been affected by the citrus brown fly, Senasica technicians have corroborated the effectiveness of biological control techniques, which are sustainable and friendly to the environment and human health.