

# Sustainable control of the HLB vector in citrus family farming

Scaling up integrated pest management focusing on the HLB vector in family citrus growing in Argentina, Uruguay, Paraguay and Bolivia



Argentina / Bolivia / Paraguay / Uruguay



Scale up integrated pest management with focus on the HLB vector in family citrus farming

## The implemented initiative

In order to prevent the advance of HLB in the region, since 2019, it was proposed to adapt and disseminate integrated pest management (IPM) technology in the control of the HLB vector in family agriculture (FA). IPM demonstration plots were implemented, training, communication and social awareness actions were carried out. The impacts of IPM on sustainability, quality

and economic analysis were evaluated. The platform was formed by: INTA/Fundación ArgenINTA (Argentina), INIA (Uruguay), FaCAF UNI/FundUNI (Paraguay), Autonomous Municipal Government of Bermejo (Bolivia), SENASA and FEDERCITRUS of Argentina and UPEFRUY of Uruguay. Team: 103 researchers, extensionists and communicators.

HLB citrus vector control in integrated pest management (IPM) context

## The technological solution

IPM is based on systematic monitoring of the HLB vector (*Diaphorina citri*), natural enemies (*Tamarixia radiata*, etc.), plants with HLB symptoms, phenological monitoring and monitoring of other relevant diseases and pests. A network of IPM demonstrator plots (LD) and conventional plots (LC) was implemented, also monitored, but with regular management by the grower. Based on the monitoring, control actions -biological, cultural, ethological and low-impact chemical- were implemented in the LDs. An alert system was activated for producers via cell phone and e-mail with free access to the BioTic INTA-FONTAGRO HLB Web portal, with

the development of a prototype of a mobile App for uploading monitoring data.

The impact of IPM was evaluated in terms of sustainability, fruit quality at harvest and economic analysis.

A virtual and face-to-face training course for pest monitors with certification was technologically and pedagogically designed and a comprehensive communication strategy was implemented. Scaling was applied with a collective innovation management approach.

## Results

The results of the monitoring in the LD (IPM) versus LC show decreases of the HLB vector between 60-99% in 3 sites and an increase of natural enemies from 17% to 332% in 11 sites. The average environmental impact index in the evaluated LD was positive. The improvement in fruit quality was registered by lower incidence of diseases and/or less pest pressure. The economic analysis shows that direct IPM costs increased, with higher gross margins in some LD from the second or third season onwards. The following were

designed and implemented: 3 editions of a virtual/on-site course for pest monitors on the INTA PROCADIS Web platform; an alert system with access to the BioTic INTA-FONTAGRO HLB Web platform; a prototype of a monitoring upload App; a graphic and digital communication campaign for the prevention and management of HLB-vector. Participatory workshops, training, 2 manuals published. More than 22,900 people reached.

MÁS INFO



**1030**

Total monitoring carried out at 17 sites (LD and LC)



**-99%**

Population decline of the HLB vector insect at Bella Vista, Corrientes, Argentina



**+66%**

More natural enemies of the HLB vector in the LD at 11 sites (from 17% to 332%).



**+126**

Producers who receive alerts by cell phone with access to the BioTic INTA - FONTAGRO HLB Web portal.



**247**

Certificates awarded in 3 editions of the virtual/on-site course for monitors from INTA PROCADIS + 1 Course manual published



**+3400**

Reached by project activities (workshops, lectures, courses, alert system, meetings) in 4 countries



**4000**

Printed guides "HLB and its vector. Images and notes for field reconnaissance" delivered - Also in digital version



**15371**

People reached by the communication campaign for the prevention and management of the HLB-vector complex.