

## ORCHARDS MANAGEMENT WITH HLB AND ITS VECTOR PRESENCE IN SAO PAULO, BRAZIL

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### Summary

Huanglongbing (HLB) was first identified near Araraquara in the central region of São Paulo State (SPS), Brazil, in March 2004. The recommended measures for HLB management are based on two phytopathologically sound principles: (i) inoculum reduction by frequent removals of HLB-affected trees and (ii) control of psyllid vector populations by insecticide treatments. The goal of this management strategy is to prevent as many trees as possible from becoming infected with the HLB pathogen. After five or six years of HLB management, several SPS citrus farms have shared their results on HLB control. Here, we present data from eighteen farms where the recommended measures have been applied since 2004 or 2005 in SPS showing that HLB can be controlled. SPS is one of the first regions in the world where preventive control against Asian HLB has been carried out on a large scale under various conditions and been found to be successful when the recommended measures have been applied rigorously and have become more aggressive with increasing HLB incidence in the region. However, only one-third of SPS citrus trees are under effective HLB-management and they are located on large farms, where HLB management is easier than on small farms. The majority of trees in small and medium-sized groves commonly do not benefit from HLB local management. This is the reason that HLB incidence in SPS has increased in spite of HLB management. Many groves in which no HLB management is carried out have high proportions of HLB-affected trees and large populations of HLB-positive psyllid vectors. These groves are the major obstacle to HLB management in SPS. These severely affected groves endanger the very existence of the Brazilian citrus industry. When such groves are within ~4km of well-managed farms, their psyllids invariably invade and contaminate the farms. SPS has legal tools, which make possible the removal of contaminating groves, but the laws are not strictly enforced. HLB management as described here is only a short-term solution to keep the citrus industry alive and to buy time for long-term solutions, probably based on engineered citrus genotypes, to come in, hopefully, in five to ten years.