



■ THE PROBLEM ADDRESSED

The importance of citrus in TROPICSAFE partner countries

One aim of TROPICSAFE is the impact evaluation of the solutions proposed to manage citrus “huanglongbing” (HLB), detected in several areas of the world where it has caused big losses. The citrus market analysis is conducted in Cuba, Guadeloupe (France) and Spain, processing official data of FAOSTAT, integrated with information published by the National Statistical Offices or available in literature. In Cuba and Guadeloupe, the effect of HLB have had consequences on the citrus production and commercialization. Spain is not yet affected by the disease, but one of its insect vectors (*Trioza erytreae*) was found in North-Western Spain in 2014, so the risk of infection is very high. In fact, a new Horizon 2020 project, called PRE-HLB, was recently started aiming at developing and implementing a holistic contingency plan to protect Europe’s citrus sector.

Preventing the disease from entering Europe is key to the European citrus market. Economic and social aspects intertwine in this analysis, where the market aspects drop the last piece of the agro-food chain, defining the relative importance of crops at national and international level.



• Romero Barros, Bodegón de naranjas (Córdoba, Museum of fine arts)

■ LATEST RESEARCH RESULTS

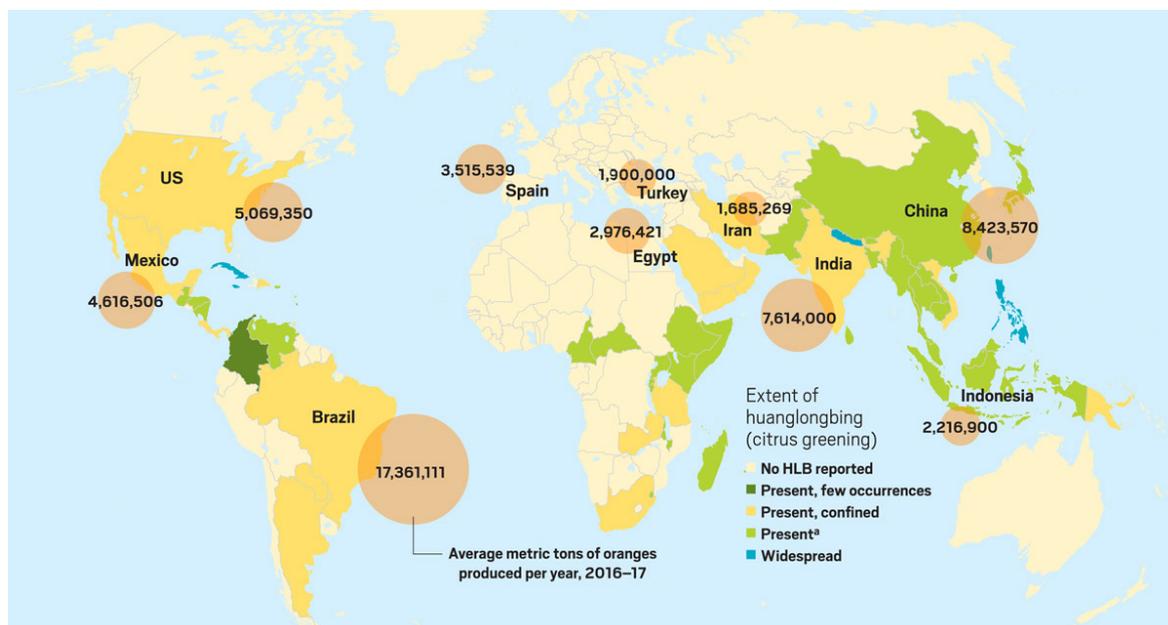
Overview on the importance of citrus production

Citrus are the most important fruit tree crops in the world: cultivated in 168 countries on a surface of 12.7 million hectares, the production of the sector is about 202 million tonnes (15.8 t/ha of yield on average) for a gross production value of 66.4 billion US\$ in 2019 (FAOSTAT, 2019). Globally, production and harvested area are increasing (+29% and +13% respectively) in the last 10 years. More than 50% of world citrus production is concentrated in six countries, which leadership is changed in the last ten years: from 2009 to 2019 the production of China increased significantly (+71%), while United States of America have reduced their production (-33%).



According to FAOSTAT (2019), China is the leader, with almost 44 million tons of production representing (22% of the total), followed by Brazil (10%), India (7%), Mexico and United States of America (4%), and Spain (3%).

Except in Europe and Australia, "huanglongbing" has been detected in the most important producing countries, where it is a serious limiting factor for the production and commercialization. Economic losses caused by HLB presence have been estimated in many countries and it represents a serious threat to the market. Several analyses on the importance and impact of the disease on production and market are available in literature (a relative outdated literature comes from South-Eastern Asia, where the disease was observed for the first time).



• Distribution of HLB in the world and main citrus growing countries (CAB International's Invasive Species Compendium 2019, Food and Agriculture Organization of the United Nations)

■ THE TROPICSAFE RESEARCH AND DEVELOPMENT ACTIVITY

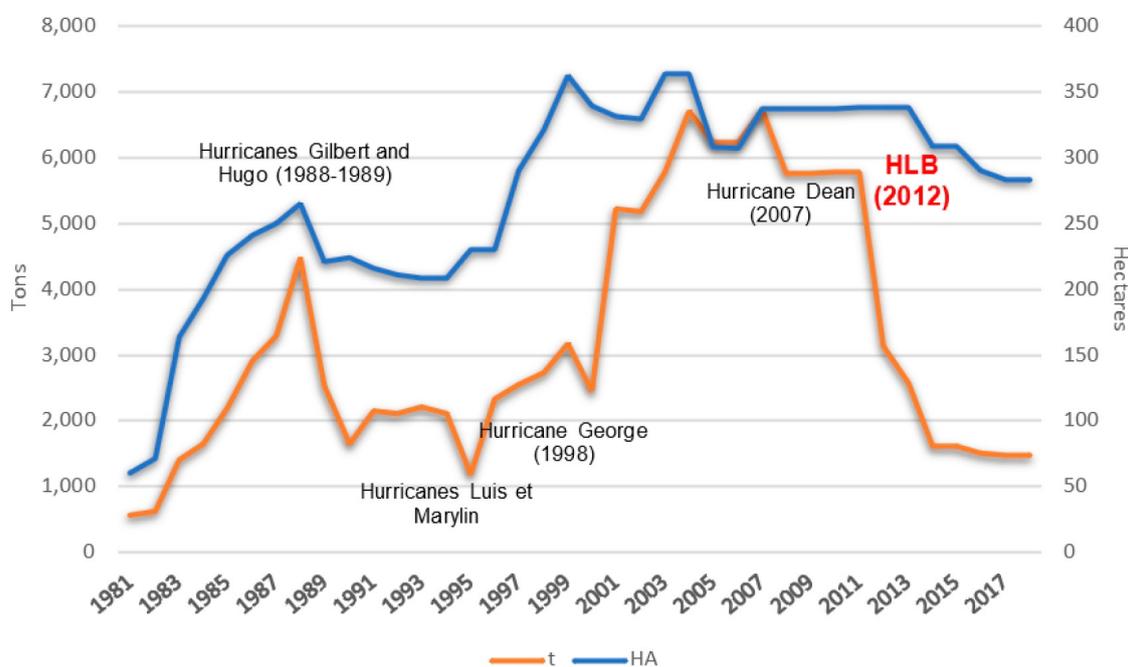
The citrus market in Cuba, Guadeloupe and Spain

Cuba According to ONEI, in 2017 citrus crops in Cuba were cultivated on about 19,700 hectares with a production of 98,761 tons. This data is very far from the peak of production reached in the '90s when the country was among the big producers in the world with about 1 million tonnes of citrus. After the Soviet bloc collapsed in 1989 and the Cuban citrus industry was reorganized, in 2009 the citrus production saw a downward trend due to HLB presence. Cuba's fresh fruit exports decreased after 1989 under the competition of Israel and Spain and the citrus industry gave more emphasis to the processed citrus products. The disease was detected in 2006: the average yield of citrus orchards (9.0 t/ha in 2009) decreased until 5 t/ha in 2017 and the amount of citrus produced was subjected to a significant reduction (-76% from 2009 to 2017). The consequence was downsizing in the citrus industry and import-export.

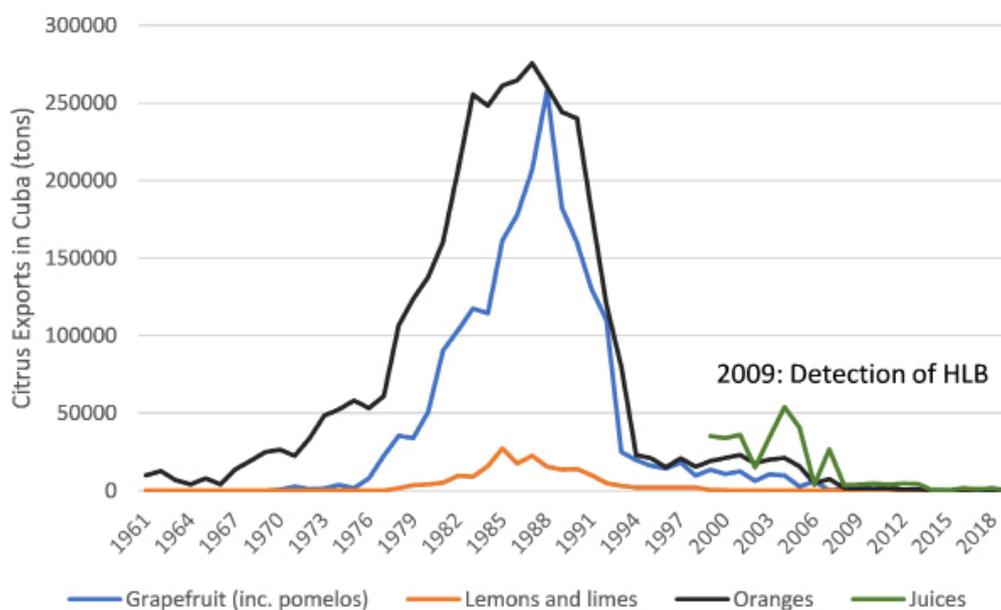
Guadeloupe About 350 hectares of the agricultural area are dedicated to citrus cultivation and, although the sector represents about 80% of fruit production, the contribution to French national production is marginal. Even with falls consequent to the hurricanes, the citrus production in Guadeloupe has increased from 1981 until 2011. Then, according to AGRESTE, the overall citrus production has decreased from 5,850 tons in 2011 to 1,542. The reason in the last negative trend is linked to HLB presence, detected in 2012. The importance of citrus in this country is more related to internal consumption. In 2016 only 174 tons have been exported while the quantity of import amounted to 6,707 tons. The local government has implemented an action plan to fight against the disease.



Spain More than 6 million tons of citrus are produced in Spain, leading country in the European citrus market. Around 25% of the total volume goes to the processing industry while 75% is marketed as fresh. More than 210 million euros of turnover have been generated by the orange juice export, mainly to the European Union market (France, Germany, UK, and Portugal).



- Citrus production in Guadeloupe from 1981 to 2017 (AGRESTE)



- Citrus export in Cuba from 1961 to 2019 (tonnes) (FAOSTAT)



■ SCIENTIFIC DATA AND FIRST RESULTS

Consideration on the socioeconomic impact of HLB on citrus agro-food chain

The market analysis and the identification of the most important socioeconomic characteristics of the citrus sector in the selected countries are being developed on two interrelated levels. The first is focused on the quantification of production, import, and export of citrus and citrus products in Cuba, Guadeloupe, and Spain. The second describes the organization of the agro-food chain at the local level, to identify all the subjects involved and the potential impact of the proposed pathogen management strategy. The impact of HLB on the agricultural economy of citrus growing countries has provoked in Cuba a decrease in the citrus acreage and production, against which the government has replied with a pest management plan and with a new market policy (processing products and introducing a new brand). The general sector organization, the interaction with historical research centres and the market dimension makes the Cuban citrus agro-food chain open to setting up specific innovation-oriented to promptly detect the disease. Guadeloupe has experienced the disease for some years: the citrus sector in this country is mainly organized locally with an internal market of size not sufficient to reach other countries. However, the detection and control of HLB appear crucial to guarantee a minimum revenue to farmers and the internal supply of products. Spain has the most structured agro-food chain, with a developed market, big production and a developed system of commercialization, especially in the European Union market. HLB has been not detected yet but an epidemic outbreak of HLB could have serious economic consequences.

KEY WORDS

Citrus, market, socioeconomic aspects, "huanglongbing", disease

FURTHER INFORMATION

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