

Plant protection: vector surveillance and vector analysis for the early detection of diseases

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The presence of vectors plays a fundamental role in determining the phytosanitary risk of phytopathogens in Argentina and is decisive for decision-making regarding the incorporation of a disease in the prioritization of pests for phytosanitary surveillance whose purpose is to define which pests/diseases and for what purpose will they be actively monitored by Senasa. Within the framework of this prioritization, in recent years diseases have not been incorporated because the absence of vectors limits their dispersion and development in the territory, as in the case of Grapevine flavescence dorée phytoplasma, the causal agent of one of the most important yellowing diseases of the vines in Europe, since its vector *Scaphoideus titanus* is absent in Argentina and South America. In this case, both organisms are currently included on the list of quarantine pests absent in Argentina and are regulated in the importation of plant products to prevent their entry into the territory. When disease vectors are present, the risk of their establishment and spread is greater. Some of the diseases and their vectors that were prioritized and in which the presence of vectors played a special role are: HLB, *Xylela fastidiosa*, and *Candidatus Phytoplasma pyri*. Regarding the citrus HLB, the actions began in 2009, at the time of prioritizing the disease, the risk of entry was very high given the proximity of the disease to the border with Brazil, and its vector *Diaphorina citri* was present in the northeastern region of Argentina. Surveillance was based on a network of yellow chromatic traps, and as an additional advantage, taking samples of the vector allowed it to be analyzed for the presence of the causal agent of HLB *Candidatus Liberibacter asiaticus*. As for *Xylela fastidiosa*, this bacterium is an exclusive inhabitant of the xylem and is transmitted by xylem-feeding insects. The different sub. species of this bacterium and have a wide range of hosts and a large number of vectors of the Order Hemiptera, families Cicadellidae and Cercopidae. Of this bacterium in Argentina, only the subspecies *paucum* has been detected. Surveillance was based on a sampling of plant material, extracting 1953 samples analysed in crops. Due to the large number of vectors present, VID and Stone fruits crops are currently under surveillance in order to detect other subspecies of the bacterium at an early stage». *Candidatus Phytoplasma pyri*, causal agent of Pear decline, was detected in Argentina in 2019 (FD Fernandez 2019), has *Cacopsylla pyri*, *C. pyricola* and *C. pyrisuga* as vectors. Currently there is a surveillance system of 64 trapping sites with

more than 200 revisions of traps. Knowing the presence and distribution of the vectors will allow knowing the areas of potential distribution of the disease and having information for risk analysis and decision making.