

Estimating the risk associated with the movement of bulk citrus between the regional quarantine zones in California

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In January 2018, the CPDPC discussed the movement of bulk citrus fruit between quarantine zones, specifically focused on the mitigations required for movement into and out of Zone 6 (where Huanglongbing has been detected). The meeting minutes reflect that a goal of the committee was to have any movement between regions require mitigation, but that there were economic concerns about mitigations for movement into Zone 6. The discussion concluded with Nick Condos stating that an analysis of risk would be used to inform any future changes to the mitigation requirements. Mr. Condos then requested that the UC Davis Quantitative Biology and Epidemiology (QBE) Lab and the Data Analysis and Tactical Operations Center (DATOC) perform the risk analysis. Later that month, CDFA issued a special QC Permit 1486 to allow bulk citrus to be moved into Zone 6 without meeting the ACP-free performance standard. This allowed undocumented movement of fruit into Zone 6 for most of 2018.

In March and May 2018, a pilot risk model based on the APHIS PPQ guidelines for Pest Risk Analysis was presented to the CPDPC and the CPDPC Science and Technology Subcommittee. This model evaluated the risk associated with each transportation route between bulk citrus quarantine zones as the combination of the probability of CLas⁺-ACP introduction, spread and establishment, and the impact it would have in the receiving quarantine zone. It was decided that a panel of individuals familiar with the citrus industry and a history of involvement in the CPDPP would be appointed to provide input into the model parameters. This panel was chosen in September 2018, and consisted of:

Bob Atkins	Victoria Hornbaker	Etienne Rabe
Rick Dunn	Ray LeClerc	Keith Watkins
Beth Grafton-Cardwell		

The panel, facilitated by Sara García Figuera, spent 3 months refining the model, ultimately producing a matrix with a qualitative evaluation of risk (“Low”, “Medium”, or “High”) for movement of bulk citrus fruit between each pair of quarantine zones. The agreed-upon results were presented first to the Science and Technology Subcommittee in December 2018, and then to the CPDPC in March 2019, with the recommendation that mitigation always be required when transporting citrus between quarantine zones, as all known transportation routes were estimated as High risk. The completed risk matrix was unanimously approved by the CPDPC.

This introduced a conflict between the established matrix and current regulations pertaining to Zone 6. The CPDPC-approved risk matrix lists fruit movement into Zone 6 as Medium risk and was approved with a recommendation to maintain uniform risk mitigation requirements for fruit moving between zones. Currently, however, fruit can be moved into Zone 6 without mitigation (tarping and an ACP-Free Declaration Form have been required since April 2018, which also allowed tracking). Therefore, loads of fruit from areas generally infested with ACP, which could potentially harbor ACP, can move into Zone 6 where HLB is present. If the ACP escape when unloading, they can contribute to HLB spread.

The panel that provided model input estimated that the potential impact of CLas⁺-ACP being introduced to Zone 6 was Low to Medium, due to the relatively small commercial citrus acreage within the current boundaries of Zone 6. This probably resulted in the total risk for transportation routes into Zone 6 being estimated as Medium. However, it is important to note that Zone 6 is non-contiguous and defined in such a way that it will include any new HLB detection. This means that the potential impact (and risk) could quickly change to High if Zone 6 expands to include more commercial acreage.