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Authors

Ramos, John E.
Shatters, Robert G.
Powell, Charles A.
et al.

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RNA Interference Screening Reveals Redox Processes to be Most Responsive to Low dsRNA Doses in Asian Citrus Psyllid

Ramos, J.E.¹, Shatters, R.G.¹, Powell, C.A.², Borovsky, D.¹, Jain, R.², Shaffer, L.², and Ben-Mahmoud, S.K.²

¹USDA/ARS USHRL, Fort Pierce, FL

²UF IRREC, Fort Pierce, FL

The Asian citrus psyllid (*Diaphorina citri* Kuwayama) is an invasive Homopteran that has crippled citrus production in Florida with the spread of the Huanglongbing (Citrus Greening) disease, which yields small discolored and bitter fruit. The disease is associated with the bacterium ‘*Candidatus*’ Liberibacter and is rapidly spreading to other citrus producing states. Gene targets were competitively deposited by experts from diverse fields for RNAi screening through an Innocentive challenge funded by the Citrus Research and Development Foundation. Four of the fifty genes were identified in dsRNA feeding trials to induce both significantly high mortality as well as concentration dependent dose response. Three of these are involved in redox biochemistry. These results indicate that gene silencing of proteins involved in metabolism by redox chemistry can induce mortality at low doses and that functional targeting in this organism may be the best strategy for psyllid control by RNAi.