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Relations between behavior of HLB and Iron application to Citrus trees

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Citrus Greening Disease or Huanglongbing (HLB) is one of the most serious citrus diseases in the world. There are no effective methods to cure this disease, and major countermeasures include detection of initial detection and cutting down infected trees. Thus, HLB delivers serious impact to the agricultural economy.
It is well known that an HLB infected tree shows specific symptoms like micronutrient deficiency. We revealed that iron (Fe) content of citrus leaves showing symptoms for HLB were decreased compared to non-infected leaves (Pustika et al., 2008, Masaoka et al., 2011), and the activity of Fe(III) chelate reductase in roost was reduced for HLB-infected citrus trees.
In this research we tried to evaluate the effect of Fe application for recovery of infected trees. Fe additives were applied to HLB-infected citrus trees and the density of the HLB bacterium was evaluated using PCR. In some infected trees, the HLB bacterium became undetectable after treatment. This result suggests that Fe nutrient affects the ecosystems of the HLB bacterium.

References

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