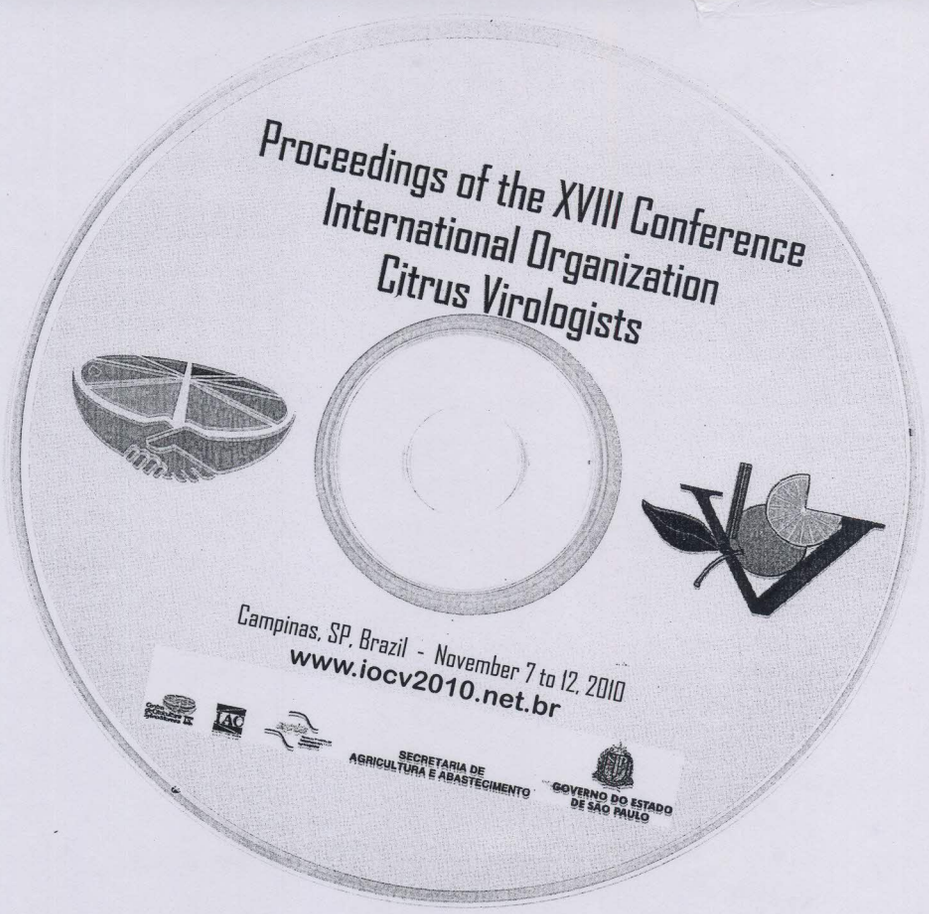

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52. DIAGNOSIS OF CITRUS GREENING IN LEMON TREES USING LASER-INDUCED FLUORESCENCE SPECTROSCOPY

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Currently, Greening (HLB) is the disease most feared by citrus producers. This bacterium malady is transmitted by a psyllid called Diaphorina citri. The main control strategies are visual inspection, for elimination of symptomatic trees, and vector control by insecticides. However, these strategies have not been enough to contain the spread of the disease. Some reasons for this are: visual inspection is subjective and sick plant has a long asymptomatic phase (6 to 36 months). Quantitative RT-PCR is the most acceptable technique to identify asymptomatic trees, but this method is expensive, slow and impractical in a large scale. This initial study proposes the Laser-Induced Fluorescence Spectroscopy to diagnose the HLB in lemon trees. For both, leaves of sicilian lemon were collected from healthy and sick plants and measured using LIFS. This set of spectra (57 from asymptomatic leaves, 45 symptomatic and 63 healthy) was used to create a classifier based on Artificial Neural Network (RNA). Our results shown that is possible to discriminate symptomatic leafs from the others with 96% of accuracy. The success rate for classifying healthy and asymptomatic leaves is lower, around 71%. Therefore, LIFS showed better results than visual inspection, which has around 50% of success rate in symptomatic phase.

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