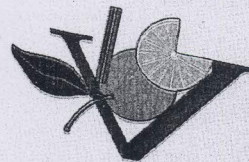
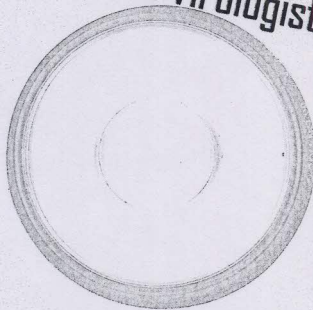
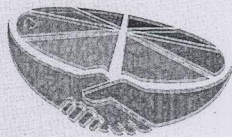


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### 53. STUDY OF LASER-INDUCED FLUORESCENCE IMAGING IN ASYMPTOMATIC LEAVES FROM CITRUS PLANTS INOCULATED WITH *CANDIDATUS LIBERIBACTER*

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Citrus greening or huanglongbing (HLB) is a devastating disease that has been causing serious problems to citrus cultivation. Some analytical methods have been reported for diagnosis of this disease, mainly DNA-based techniques of *Candidatus Liberibacter* species, which are the causal agents. In general, most of these developed methods involve PCR (polymerase chain reaction). However, methods based on PCR cannot be used in large-scale to build disease distribution maps. The visual inspection, usually adopted, can lead to misleading diagnoses, since the symptoms are easily mistaken with others problems and the disease has a long asymptomatic phase. Aiming the development of a new method for early diagnosis of this malady, leaves from inoculated and healthy (control group) plants were assessed using laser-induced fluorescence imaging (LIFI). The plants were measured monthly and the evolution of the bacteria on inoculated plants was monitored by RT-qPCR (real-time quantitative PCR) amplification of CLas sequences. A laser emitting at 470 nm was used to excite the fluorescence of chlorophyll and other metabolites present on the leaf. Each image was associated to histograms of colours (colourgrams) and a matrix. For the investigations of data, principal components analysis were made for the categories of the colourgram (scales of red, blue and green, luminosity, relative red, blue and green, hue, saturation and intensity). Preliminary results showed that there are differences in the images obtained from healthy and inoculated plants, indicating a great potential of the technique to perform early diagnoses in large scale that are economically viable.

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