

Antibiotic susceptibility and virulence profiling of endemic *X. fastidiosa* subsp. *fastidiosa* isolates from Costa Rica

Rodríguez-Murillo Neysa¹, Zúñiga-Pereira Ana Mariel¹, [Chacón-Díaz Carlos](#)¹.

¹Centro de Investigación en Enfermedades Tropicales, Facultad de Microbiología, Universidad de Costa Rica, San José, Costa Rica.

*Corresponding author: carlos.chacondiaz@ucr.ac.cr.

Xylella fastidiosa subsp. *fastidiosa* is endemic in Costa Rica. Although the bacteria has great potential for disease and it is widespread throughout the country, a common feature is that symptoms of host infected plants tend to be asymptomatic or in worst scenarios show mild symptoms as reported for “crespera disease” in coffee. Another trait within this population is that isolates have shown broad genetic diversity, based on different typing techniques including MLST. Our recent efforts have focused on phenotypic characterization of isolated strains. We tested antibiotic susceptibility of *X. fastidiosa* subsp. *fastidiosa* to tetracycline, streptomycin, gentamicin, chloramphenicol, ciprofloxacin, and penicillin. Minimal Inhibition Concentration (MIC) (µg/ml) were generated using Etest[®] assay, a quantitative technique that has been used previously in slow growing bacteria including *X. fastidiosa*, with reproducible results, a difficult task to achieve using other susceptibility determination techniques. Results show an overall susceptibility of *X. fastidiosa* to most of the antibiotic tested; however, differences in MICs within isolates for each antibiotic should not be overlooked. To evaluate if endemic *X. fastidiosa* subsp. *fastidiosa* population is capable of infecting and causing severe disease in *Nerium oleander* as seen for *X. fastidiosa* subsp. *pauca* (ST53) also present in Costa Rica. Several isolates of *X. fastidiosa* subsp. *fastidiosa* representing different ST types, were assayed in a virulence test using *Nerium oleander*, 8 months after inoculation none of the tested isolates have induced evident symptoms of disease, bacteria were barely detected near the inoculation site after 6 months post inoculation, monitoring is still an ongoing task.

This research was financially supported by funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 635646: POnTE (Pest Organisms Threatening Europe) and grant agreement No 727987: XF-ACTORS (*Xylella fastidiosa* active containment through a multidisciplinary oriented research strategy).