Host range and population structure of Xanthomonas citri pv. mangiferaeindicae

There are two types of strains in pv. mangiferaeindicae
- isolated from mango (Mangifera indica)
- pathogenic on mango
- weakly pathogenic on pepper tree
- isolated on pepper tree (Schinus terebinthifolius)
- pathogenic on pepper tree
- weakly pathogenic on mango

No other characteristic or genetic marker can differentiate them and allow to compare them

Populations coexist, almost in a sympatric manner with the two hosts often adjacent

Minisatellites derived from X. c. pv. citri to characterize mangiferaeindicae populations

12 loci identified based on the complete sequence of strain FDC12 using the web tool http://minisatellites.u-psud.fr
- containing repeats of 6 or 7 nucleotides
- primers designed for production of amplicons of 150 to 450 bp
- genome-wide localization

Minisatellite processing is multiplexable for amplification and automated electrophoresis

Analysis of 6 populations from the 2 hosts

179 isolates from 3 sites containing mango trees and pepper trees, considered as 6 populations:

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<th>1999</th>
<th>2009</th>
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<tbody>
<tr>
<td>Bassin Martin/Mango</td>
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<td>Bassin Plat/Mango</td>
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<td>Bassin Martin/Pepper</td>
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<td>Grand Fond/Pepper</td>
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- two minisatellites are monomorphic for all populations
- some are polymorphic only within one or a few populations
- most are polymorphic between and within populations
- 81 haplotypes were differentiated
- no haplotype was common to different populations

Conclusions
- strong differentiation according to host
- temporal and geographical differentiation
- no epidemiological relationships between populations
- each population derives from one or several founders
- population continuum between the two hosts?