

How do co-infections affect the epidemiological dynamics of two strains of the plum pox virus ?





Host-mediated interaction

- > Infections of the same host by several pathogens
- > Common, especially in plants
- Induce interactions between pathogens to exploit the host resources
- Poorly investigated
- > Known examples show that co-infections affect the evo-epidemiological dynamics of a disease



Tollenaere et al. 2016 Trends in Plant Science

The sharka disease

- > Devastating on trees of the genus *Prunus* (including plum, peach, apricot
- \succ Caused by the plum pox virus (PPV)
- > Transmitted by aphids







- Several PPV strains circulate in European plum orchards : PPV-M, PPV-D and PPV-Rec
- Cases of co-infections have been detected

Plan of investigation

- > Experimental inoculations (simple/ co-inoculations) by aphids on young plants in climatic chambers
- Follow-up of PPV infections by ELISA and RT-qPCR
- Statistical analysis of the data













Where, who

- > Plant Health Institute of Montpellier : a research unit with expertise in plant diseases
- Baillarguet campus (close to Prades-le-Lez)
- > Characterizing and modeling plant epidemics (CAMEPI) group





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Tollenaere, C., Susi, H., & Laine, A. L. (2016). Evolutionary and epidemiological implications of multiple infection in plants. Trends in plant science, 21(1), 80-90.