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FRIENDS OR FOES?: WHEN PLANT PATHOGENS MAKE RAIN

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Plant pathogens can cause diseases of considerable importance to food crops, forests, ornamentals, etc. But many of the microorganisms that can cause plant disease also are saprophytes and have aspects of their life history of which little is known. Growing interest in environmental microbiology has helped to uncover surprising aspects of life history of plant pathogens leading to new perspectives on the beneficial role that they might be playing for the environment. One example is *Pseudomonas syringae* as a plant-associated bacterium first described over 50 years ago. Our vision of its ecology has moved away from ubiquitous epiphytic plant pathogen to multifaceted bacterium *sans frontières* in fresh water and other ecosystems linked to the water cycle. Discovery of the aquatic facet of its ecology has led to a vision of its life history that integrates spatial and temporal scales spanning billions of years and traversing catchment basins, continents and the planet, and that confronts the implication of roles that are potentially conflicting for agriculture and society at large – as a plant pathogen and as a beneficial actor in processes leading to rain and snowfall. This new ecological perspective has also yielded insight into epidemiological phenomena linked to disease emergence. It sets the stage for the integration of more comprehensive contexts of ecology and evolutionary history into comparative genomic analyses to elucidate how *P. syringae* subverts attack and defense responses of the cohabitants of the diverse environments it occupies. I will present the vision of the evolving story of the ecology and biology of *P. syringae* and the conflicting challenges and opportunities for management of plant health and ecosystem services that ensue for this and other plant pathogens.

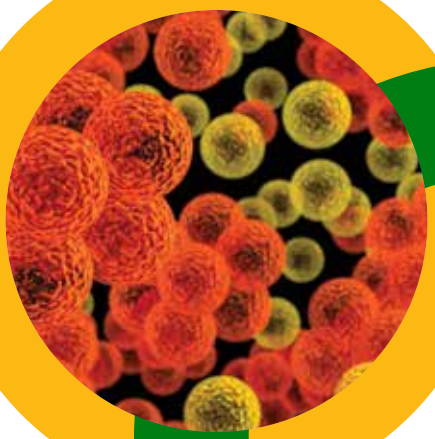
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