RÉPUBLIQUE FRANÇAISE
Liberté Égalité Fraternité

INRAE

Thesis
2023–2026

Plant microbiota management at multiple phenological stages: assembly dynamics from flower to seedling and control of plant pathogens in seeds

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Funding
50% INRAE
50% Pays de la Loire Region

Substantial research has sought to leverage microbiota in agriculture to develop sustainable solutions for managing plant health. Studying the levers that can be used to manipulate the plant–microbiota holobiont is a major scientific front.

However, knowledge is very limited about the succession and transmission of microbiota at different phenological stages from the mother plant (flower, seed) to the seedling. Deeper knowledge of the transmission of this primary inoculum and the most suitable phenological stages for manipulating it via inoculation with synthetic communities could help identify innovative plant health strategies.

In this thesis project, we will study the assembly and transmission of microbiota from flower to seedling via the inoculation of mixed synthetic communities (bacteria, yeast, filamentous fungi) at three intervention points (inoculation on flower, fruit and seed).

We will then use the findings to optimize the composition of synthetic communities to limit colonization and transmission via seeds of the plant pathogen *Alternaria brassicicola* to oilseed rape.

The final part of this project will involve identifying the strains/consortia and microbial functions involved in the effects on *Alternaria brassicicola* via targeted reconstructions of synthetic communities.

Métaprogramme
HOLOFLUX

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