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**Microbiome diversity in crop debris and the search for micro-organisms
acting on *Zymoseptoria tritici* and *Leptosphaeria maculans* primary inoculum**

The contribution of crop debris as inoculum source of many plant pathogens has been recognized for decades. Two important pathogens in the classical wheat-oilseed rape rotation are *Zymoseptoria tritici* (septoria leaf blotch of wheat) and *Leptosphaeria maculans* (stem canker of oilseed rape). Both fungi initiate their sexual stages on plant debris during the intercropping period, which results in ascospore release for subsequent epidemics. Despite the importance of debris in disease outbreak, few information is known about the structure and function of microbial communities associated to this plant habitat. The objective of this work is to characterize bacterial and fungal assemblages associated to wheat and oilseed rape debris and to assess their relative impacts on the build-up of primary inoculum during the intercropping period. The challenge is to identify competitive interactions between pathogens and debris-associated micro-organisms in order to use these latter as potential biocontrol agents. The study is based on a field design composed of three plots (wheat monoculture, oilseed rape-wheat rotations) established in the experimental domain of Grignon (Paris basin). Wheat and oilseed rape crop debris are sampled thrice a year during the ascospore release period. The structure of debris-associated microbial assemblages is assessed through a combination of classical microbiological approaches and sequencing of two molecular markers (16S rRNA gene and ITS1 region of the fungal internal transcribed spacer). Both approaches will assess the impact of crop sequence on microbial assemblages and should ultimately lead to the identification of micro-organisms exhibiting antagonistic activities towards either *Z. tritici* or *L. maculans*. To this end, the impact of different microbial assemblages and isolated species on the ascospore production from wheat debris infected by *Z. tritici* will be tested in field and controlled condition experiments.