



HAL
open science

Chromatin-based control of plant-fungi interactions

Isabelle Fudal

► **To cite this version:**

Isabelle Fudal. Chromatin-based control of plant-fungi interactions. 40th New Phytologist Symposium, Sep 2017, Vienne, Austria. hal-02786093

HAL Id: hal-02786093

<https://hal.inrae.fr/hal-02786093>

Submitted on 4 Jun 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Chromatin-based control of plant-fungi interactions

ISABELLE FUDAL

BIOGER, INRA, AgroParisTech, Université Paris-Saclay, Avenue Lucien Brétignières. 78850 Thiverval-Grignon, France

Plant pathogens, including plant-associated fungi, secrete during plant infection an arsenal of small secreted proteins acting as effectors that modulate host immunity to facilitate infection. Genome-wide transcriptomic studies have shown waves of concerted expression of effector genes that correspond to different stages of plant tissue infection and colonization. In parallel, effector genes were often found to be located in 'plastic' genomic regions, enriched in transposable elements. The location of effector genes in regions enriched in transposable elements has been shown to have an impact on adaptability of fungi but could also provide for tight control of effector gene expression through chromatin-based regulation. Recently, chromatin structure was shown to be an important regulatory layer of effector gene expression in several plant-associated fungi with different lifestyles. Chromatin-based control of effector gene expression is likely to provide an evolutionary advantage by preventing the expression of genes not needed during vegetative growth and allow for a massive concerted expression at particular time-points of plant infection.