



HAL
open science

RENOV project: ecological reservoirs and management of Bois Noir in the French vineyards

Céline Abidon, Jérémy Follet, Pascale Pienne, Géraldine Uriel, Arthur Froehly, Klingenstein Maxence, Christine Dubus, Céline Chauvenet, Gaël Delorme, Didier Viguiet, et al.

► To cite this version:

Céline Abidon, Jérémy Follet, Pascale Pienne, Géraldine Uriel, Arthur Froehly, et al.. RENOV project: ecological reservoirs and management of Bois Noir in the French vineyards. Proceedings of the 6th European Bois Noir workshop and 1st International Pro-AECOLOGY conference, UMR-1332 Fruit Biology and Pathology, University of Bordeaux and INRAE, May 2024, Bordeaux (France), France. pp.90-91. hal-04650425

HAL Id: hal-04650425

<https://hal.inrae.fr/hal-04650425>

Submitted on 16 Jul 2024

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.

RENOV project: ecological reservoirs and management of Bois Noir in the French vineyards

Céline Abidon¹, Jérémy Follet², Pascale Pienne², Géraldine Uriel², Arthur Froehly³, Maxence Klingenstein³, Christine Dubus⁴, Céline Chauvenet⁵, Gaël Delorme⁶, Didier Viguier⁷, Arthur Auriol⁸, Gulnara Balakishiyeva⁸, Jean-Saïd Bey⁸, Sandrine Eveillard⁸, Thierry Lusseau⁸, Pascal Salar⁸, Xavier Foissac⁸

¹*IFV, French Institute of Vine and Wine, Northeast pole, Colmar, France*

²*CIVC, Interprofessional Champagne Committee, Epernay, France*

³*CIVA, Interprofessional Council of Alsace Wines, Colmar, France*

⁴*VINIPOLE SUD BOURGOGNE, Davayé, France*

⁵*BIVB, Bourgogne Wine Board, Beaune, France*

⁶*SVJ, Jura Viticultural Society, Lons le Saunier, France*

⁷*CA11, Aude Chamber of Agriculture, Carcassonne, France*

⁸*University of Bordeaux, INRAE, Fruit Biology and Pathology, Villenave d'Ornon, France*

**Corresponding author(s): celine.abidon@vignevin.com*

INTRODUCTION

Since 2018, French vineyards have been alarmed by the notable increase of Bois noir (BN) observed since the last French 2002-2010 survey (Kuntzman et al., 2014). In the frame of the French national plan against vineyard decline, the RENOV project proposes to better understand the BN pathosystem, to identify levers for action with special focus on the vineyards planted in cultivar Chardonnay in French regions under sub-continental climate. Several hypotheses are posed to explain BN re-emergence: (i) new variants of “*Candidatus Phytoplasma solani*” (CaPsol) with different epidemic properties and/or virulence, (ii) change in the local abundance of CaPsol vectors, (iii) and or changes in wild reservoir host-plants, including nettle, bindweeds or other recently identified reservoirs in Europe, (iv) changes or unadapted vineyard management practices. To assess such parameters, study case plots were selected. The acceptability and obstacles for sustainable management practices and enhancement of prophylaxis, will be favored by setting up demonstration and system tests. The knowledge acquired will also be taken into account in regional control plans against Flavescence Dorée (FD), the outbreaks of which can be masked by the BN presence.

MATERIALS AND METHODS

RENOV is organized into three major scientific work packages (WP). The first WP consists in a survey of CaPsol genotypes circulating in France. In this WP, new markers for genetic analysis are being developed, including neutral markers, positively selected markers as well as bacterial variable number of tandem repeats (VNTR) (See communication by Salar et al., in the proceedings). For genotyping CaPsol, a set of BN-positive samples representative of the French viticultural regions, was selected from the French laboratories in charge of grapevines yellows diagnosis and from other laboratories in the Euro-Mediterranean basin. The second WP is to survey vineyard case study plots, in

six French viticultural areas (Alsace, Burgundy, Champagne, Jura, Aude and Nouvelle-Aquitaine). Information about the plots, including management practices, are collected from winegrowers and recorded. On these plots, samples are taken from symptomatic vines, known plant reservoirs such as *Convolvulus arvensis*, *Calystegia sepium*, *Urtica dioica* and *Crepis faetida*, in order to measure their infection by CaPsol genotypes. The presence of symptoms and their severity on grapevine is also monitored with the severity scale previously published for FD (Eveillard et al, 2016). Qgis and Qfield tools are used for spatially map the notations, samplings and associated CaPsol genotypes. Population dynamics of known CaPsol vectors are recorded using yellow sticky traps and sweep-netting on wild reservoirs plant. Infective status and the corresponding CaPsol genotypes of all collected vector populations are also recorded and spatially mapped. Finally, the third WP involves winegrowers and/or groups of winegrowers to develop BN management strategies aimed to limit CapSol and BN incidence in the field. A specific study is also carried out to evaluate the acceptability of adapted management strategies.

ACKNOWLEDGEMENTS

This project is supported by the Plan National Dépérissement du Vignoble grant RENOV with the support of CNIV and FranceAgriMer.

REFERENCES

- Kuntzmann, F., Foissac, X., Beccavin, I., Chambin, C., Choloux, S., Coarer, M., et al. (2014). Bois noir de la vigne : synthèse des dernières observations. *Phytoma*, 679, 31-36.
- Eveillard, Sandrine, Camille Jollard, Fabien Labroussaa, Dima Khalil, Mireille Perrin, Delphine Desque, Pascal Salar, Frederique Razan, Cyril Hevin, Louis Bordenave, Xavier Foissac, Jean E. Masson, and Sylvie Malembic-Maher. (2016) Contrasting susceptibilities to Flavescence dorée in *Vitis vinifera*, rootstocks and wild *Vitis* species, *Frontiers in Plant Science*, 7. <https://doi.org/10.3389/fpls.2016.01762>
- Pascal Salar, Christina Mortada, Fouad Jreijiri, Elia Choueiri, Martina Seruga-Music, Xavier Foissac. Genes encoding collagen-like repeats are promising Variable Numbers Tandem Repeats (VNTR) markers for the differentiation of Bois noir-associated “Candidatus Phytoplasma solani” strains. Proceeding of the Sixth European Bois noir workshop and first international Pro-AECOLOGY conference: 14-16 May 2024, Ed. S. Eveillard, X. Bordeaux, France