ADVANTAGE A FRENCH COLLABORATIVE PROJECT.. FOR THE DEVELOPMENT OF NEW PROTECTION PRODUCTS AND SERVICES FOR THE SETTING UP OF A DURABLE PROTECTION STRATEGY AGAINST GRAPEVINE TRUNK DISEASES FROM NURSERY TO VINEYARD

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ADVANTAGE: a French collaborative project for the development of new protection products and services for the setting up of a durable protection strategy against Grapevine Trunk Diseases, from nursery to vineyard

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Abstract

Face to an increasing epidemic context and to important economic losses, the wine network is strongly waiting for tools and solutions to control Grapevine Trunk Diseases (GTD). Since 2015, a French consortium of nine industrial, technical and academic partners is engaged into a 4-year program for nursery and vineyard protection against GTD. The main objective of the ADVANTAGE project is to develop new technical managements adapted to both nursery and vineyard in order to limit significantly GTD impact and for a global management of these diseases. The innovation of the protection strategy proposed by ADVANTAGE results in the implementation of a combinatorial management by the association of complementary protection solutions for a better efficacy and the development of decision support tools (DST) for the end-users, from nursery to vineyard. These DST either could be molecular tools or based on imaging and modelling. In nursery, products and tools developed by ADVANTAGE will be valorized for the evaluation and the control of young plant health quality. In vineyard, the ADVANTAGE protection products could be coupled to a monitoring of survey health. The proposed tools, based on innovative imaging and modelling techniques, will allow to perform a diagnostic assessment at the level of plot GTD infestation, to estimate GTD development risk (early detection of GTD) and to quantify associated yield losses, in order to support phytosanitary treatment recommendations viticole and to improve treatment positioning.

DEVELOPMENT OF MOLECULAR DECISION SUPPORT TOOLS
Control of young plant health quality in nursery
Metagenomic indicator of wood microbial flora

SCREENING OF PROTECTION CANDIDATE SOLUTIONS
In vitro / In planta
Biological and chemical solutions
Tested alone and in combination

DEVELOPMENT OF DIGITAL DECISION SUPPORT TOOLS
Diagnostic assessment of plot health status by imaging techniques
Prediction of yield losses by modelling techniques

NURSERY & VINEYARD TRIALS: VALIDATION OF NEW TECHNICAL MANAGEMENTS
Protection efficiency of the selected combination of solutions
Validation of both molecular and digital tools