

Status of botryticides resistance in France and tools for resistance management

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▶ To cite this version:

Anne Sophie A. S. Walker. Status of botryticides resistance in France and tools for resistance management. Patholux, Oct 2012, Mondorf-les-Bains, Luxembourg. p.39. hal-01004741

HAL Id: hal-01004741

https://hal.science/hal-01004741

Submitted on 3 Jun 2020

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PATHOLUX 2012

Conference on

Impact of Plant Pathogens on the Quality of Crops and Wine

Program - Abstracts

Luxembourg, 22 - 23 October 2012

Edited by : T. Bohn, M. Beyer, D. Evers, D. Molitor, M. Pasquali & L. Hoffmann

http://patholux.lippmann.lu

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STATUS OF BOTRYTICIDES RESISTANCE IN FRANCE AND TOOLS FOR RESISTANCE MANAGEMENT. A.-S. Walker. INRA - UR BIOGER-CPP, 78850 Thiverval-Grignon, France. E-mail: walker@versailles.inra.fr

Grey mould, caused by *Botrytis cinerea*, is responsible for qualitative and quantitative damages on grapevine. Therefore, it is controlled mainly with chemical fungicides, which consequently led to the selection of resistance towards most botryticides, especially in vineyards suffering high disease pressures, such as Champagne.

This presentation will review the resistance status (evolution and frequency) of most fungicidal modes of action used to control grey mould in France. It will also provide information about the mechanisms at work to determine resistance, with new insights about hydroxyanilides, SDHIs and QoIs resistance genetics. A particular look will be also given to the emerging multidrug resistance (MDR) mechanism, inducing cross resistance between unrelated modes of action.

In a second part, risk management will be dicussed, considering the population genetics diversity, fitness penalties occuring in resistant mutants and local selection pressure and available strategies.

- Kretschmer M, Leroch M, Mosbach A, Walker A-S, Fillinger S, Mernke D, Schoonbeek H-J, Pradier J-M, Leroux P, De Waard MA, Hahn M (2009) Fungicide-driven evolution and molecular basis of multidrug resistance in field populations of the grey mould fungus *Botrytis cinerea*. PLoS Pathog 5(12), e1000696.
- Leroux P, Gredt M, Leroch M, Walker A-S (2010) Exploring mechanisms of resistance to respiratory inhibitors in field strains of *Botrytis cinerea*, the causal agent of gray mold. Applied and Environmental Microbiology 76(19), 6615-6630.
- Walker A-S, Gautier A, Confais J, Martinho D, Viaud M, Le Pecheur P, Dupont J, Fournier E (2011) Botrytis pseudocinerea, a new cryptic species causing gray mold in French vineyards in sympatry with Botrytis cinerea. Phytopathology 101(12), 1433-1445
- Fillinger S, Leroux P, Auclair C, et al. (2008) Genetic analysis of fenhexamid-resistant field isolates of the phytopathogenic fungus *Botrytis cinerea*. Antimicrobial Agents and Chemotherapy 52, 3933-3940.
- Leroux P, Fritz R, Debieu D, et al. (2002) Mechanisms of resistance to fungicides in field strains of *Botrytis cinerea*. Pest Management Science 58, 876-888.
- Billard A, Fillinger S, Leroux P, et al. (2012) Strong resistance to the fungicide fenhexamid entails a fitness cost in *Botrytis cinerea*, as shown by comparisons of isogenic strains. Pest Management Science 68, 684-691.