



HAL
open science

In vitro and in vivo efficacy of organic fungicides used in Chile to control *Botrytis cinerea*

Mario Herrera-Défaz, Marc Fermaud, Héctor Valdés-Gómez

► To cite this version:

Mario Herrera-Défaz, Marc Fermaud, Héctor Valdés-Gómez. In vitro and in vivo efficacy of organic fungicides used in Chile to control *Botrytis cinerea*. BotrySclero'21 webinar, Jun 2021, Avignon, France. hal-03363631

HAL Id: hal-03363631

<https://hal.inrae.fr/hal-03363631>

Submitted on 4 Oct 2021

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.

In vitro* and *in vivo* efficacy of organic fungicides used in Chile to control *Botrytis cinerea

Mario Herrera-Défaz¹, Héctor Valdés-Gómez¹, Marc Fermaud²

¹ Pontificia Universidad Católica de Chile, Departamento de Fruticultura y Enología, Santiago, Chile

² Inrae, UMR Save, Bordeaux Science Agro, ISVV, 33882 Villenave d'Ornon, France

maherrera13@uc.cl

Grey mould (GM) or Botrytis bunch rot (BBR) caused by *Botrytis cinerea* Pers. is one of the major diseases affecting grapes (*Vitis vinifera* L.) worldwide. To control GM, some cultural practices are used for reducing canopy humidity and the inoculum sources. In conventional systems, several synthetic fungicides are frequently used, leading to an increase of fungal resistant strains when excessively used. Fungicides are strictly regulated for their possible adverse effects on the environment and human health. Thus, alternative strategies to reduce the use of agrochemicals products include biological control, as an attractive and sustainable option, based on microorganisms or natural compounds. Biological control agents BCAs and natural compounds have been tested for efficacy to control GM with variable results according to the experimental conditions. Although in Chile it is commercialized a considerable amount of registered organic fungicides for GM control, there is a few information of the effectiveness of these products in integrated disease management programs. Thus, the aim of this study was to assess different commercially available organic fungicides to understand the complex relationships between these products and multiple environmental factors such as temperature and humidity. A pathogenic strain of *B. cinerea* was used, at 10^6 conidia mL⁻¹, to test 5 microorganisms-based biofungicides (*in vivo* and *in vitro*) and 4 natural compound-based biofungicides (*in vitro*). Pathogen was a growth decrease in plates inoculated with microorganisms-based fungicides. *In vivo* assay showed that one biofungicide (composed by two strains of *Aureobasidium pullulans*) resulted in a better control of the pathogen. Further studies are necessary to assess the effects of different biofungicides both in controlled and field conditions.