HAL
open science

Assessing brown rot resistance in peach fruit

I. Pacheco, Leandro de Oliveira-Lino, A. Ciacciulli, M. Lama, S. Foschi, F. Faoro, Veronique Signoret, D. Bassi, Bénédicte Quilot-Turion

To cite this version:

I. Pacheco, Leandro de Oliveira-Lino, A. Ciacciulli, M. Lama, S. Foschi, et al.. Assessing brown rot resistance in peach fruit. XIV Eucarpia Symposium on Fruit Breeding and Genetics, Jun 2015, Bologne, Italy. hal-02740286

HAL Id: hal-02740286

https://hal.inrae.fr/hal-02740286v1

Submitted on 2 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.

Assessing brown rot resistance in peach fruit.

Pacheco I., De Oliveira Lino L., Ciacciulli A., Lama M., Foschi S., Faoro F., Signoret V., Bassi D., Quilot-Turion B.

Brown rot caused by *Monilinia* spp. (BR) is an economically important disease in stone fruits since it causes dramatic losses in the whole production chain. The availability of standard methods to screen the resistance to this pathogen in fruit constitutes a basis for the identification of suitable parents for efficient breeding programs to improve this trait. Previous works have highlighted variability in levels of resistance in the germplasm and some crosses, suggesting that this trait has a genetic component. Nevertheless, this trait is also strongly affected by environmental conditions (climate and agronomical practices) and fruit macroscopic characteristics (or "fruit factors", such as maturity date, developmental stage/maturity level at harvest, fruit size, cuticular and epidermal micro-crack incidence, etc). Therefore the generation of screening protocols for BR resistance that allow a clear genetic dissection of this trait is a challenging activity. In Fruit Breedomics, two methods have been developed to estimate BR resistance, both based on artificial inoculation of *Monilinia laxa*: i) a fast method to screen BR impact on tens of seedlings per day directly on the field, and ii) a laboratory method allowing to follow infection progression. These protocols are being used to phenotype progenies, generating data suitable for QTL analysis and marker discovery. Besides, other experiments have been performed to find out fruit characteristics linked to BR resistance. Correlations have been found in different cultivars and selections with fruit factors, such as cuticular conductance along fruit development, biochemical composition of the cuticle, microscopic features on infected fruit.