Inheritance of resistance to *Pseudomonas coronafaciens* pv. *garcae* on Ethiopian wild Arabica coffee

S1_Gustavo Hiroshi Sera

Gustavo H. Sera[1] (gustavosera@idr.pr.gov.br), Filipe G. Carvalho[1,2], Lucas M. R. Rodrigues[3], Oliveiro Guerreiro-Filho[3], Suzete A. L. Destefano[4], Carlos T. M. Pereira[1,2], Caroline Ariyoshi[1,6], Luciana H. Shigueoka[1,5], Inês C. de B. Fonseca[2]
[1] IDR-Paraná, Londrina, PR, Brazil; [2] UEL, Londrina, PR, Brazil; [3] IAC, Campinas, SP, Brazil; [4] Instituto Biológico, Campinas, SP, Brazil; [5] Consórcio Pesquisa Café, DF, Brazil; [6] INCT Café, MG, Brazil.

Introduction

- Bacterial-halo-blight (BHB) caused by the bacterium *Pseudomonas coronafaciens* pv. *garcae:* significant losses in Arabica coffee.
- Recently, resistance to *P. coronafaciens* pv. *garcae* is associated with a major specific gene called *Pga* [1].
- **Aim:** to characterize the inheritance of resistance to *P. coronafaciens* pv. *garcae* from the wild accession of Ethiopia E287.

Materials/Methods

- **Plant materials**: Ethiopia wild arabica coffee E287: resistant parent (P1); Sarchimor M.: susceptible parent (P2); F1 clonal hybrid (P1 x P2); F2 population; backcrosses (F1 X P1, F1 x P2).
- **Inoculation:** Young leaves of all seedlings were inoculated by the abrasion method [2].
- **BHB severity evaluation:** 30 days after inoculations (**Figure 2**).
- **Chi-square test (χ^2) analysis:** different segregation proportions.

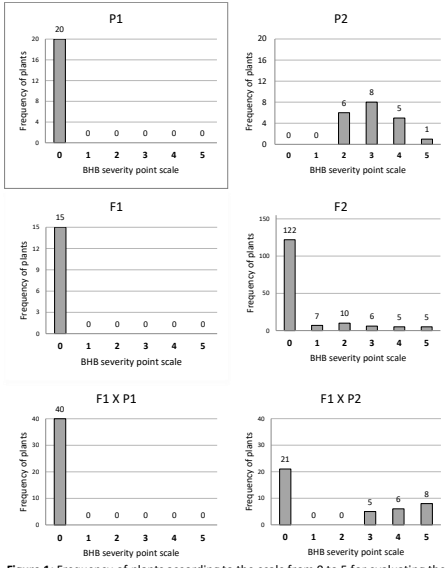

Figure 1: Frequency of plants according to the scale from 0 to 5 for evaluating the severity of BHB in resistant (P1 = E287) and susceptible (P2 = Sarchimor M.) parents, F1 clone (E 287 x Sarchimor M.), F2 populations and backcrosses (F1 x P1 and F1 x P2).

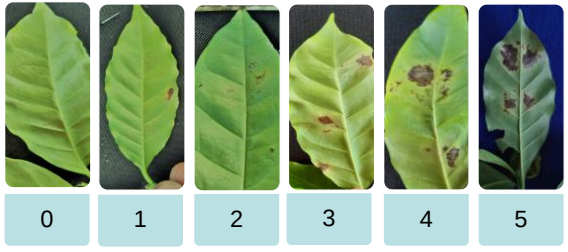

Figure 2: BHB severity evaluation using a scale of 0 to 5 points [2]. **0 = resistant (R)/ > 0 = susceptible (S).**

Results/Discussion

- **P1, F1 and backcross F1 x P1:** -100% of R plants (**Figure 1**).
- **Generation F2:** 78.71% of R plants
- **Backcross F1 x P2:** 52.5% of R plants

Conclusion/Perspectives

- We conclude that the inheritance of resistance to *P. coronafaciens* pv. *garcae* from the wild accession of Ethiopia E287 is also controlled by a major dominant gene of qualitative character and complete dominance.

References:

1. Rodrigues, LMR et al., 2023. Plant Disease, *in press*.
2. Rodrigues, LMR et al. 2017. Journal of Phytopathology, 165, 105-114.