

Environmental-friendly ways to combat plant pathogens

HENRIQUE FERREIRA

State University of São Paulo at Rio Claro

Evento Match-Making - Chamada conjunta FAPESP/NWO 2021

29 de junho de 2021

Our Team



Dirk-Jan Scheffers
**Biochemist, Cell and
Molecular Biologist**
**Antimicrobial
characterization**

University of Groningen,
The Netherlands



Franklin Behlau
Phytopathologist
Field tests

Fundecitrus
Araraquara- Brazil



Andrij Pich
Chemist
**Functional and Interactive
Polymers**

RWTH Aachen University
(Germany) and
Maastricht University (The
Netherlands)



Henrique Ferreira
Biochemist, Geneticist,
**Cell and Molecular
Biologist**
**Antimicrobial
characterization**

State University of São
Paulo at Rio Claro- Brazil

Our goal

Since 2013, we were awarded three grants to develop safer alternatives to copper for the control of citrus canker - a bacterial disease caused by *Xanthomonas citri* - responsible for enormous losses to the orange juice industry

FAPESP/NWO 2013/50367-8


FAPESP/NWO 2017/50216-0, and

FAPESP/BMBF 2015/50162-2

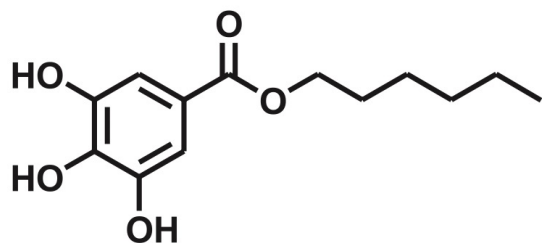


Brazil is the world leader in sweet orange/juice production

Hexyl gallate for the control of citrus canker caused by *Xanthomonas citri* subsp *citri*

Lúcia B. Cavalca¹ | Caio F. C. Zamuner¹ | Luiz L. Saldanha¹ | Carlos R. Polaquini² |
Luis O. Regasini² | Franklin Behlau³ | Henrique Ferreira¹ 

We showed that synthetic compounds developed by our group protect citrus plants against infection and are safer than copper



untreated

DISEASED



G6

PROTECTED



copper

ORIGINAL ARTICLE |  Full Access

***Syzygium aromaticum* (Clove) essential oil: an alternative for the sanitization of citrus fruit in packinghouses**

Tiago Soraggi Battagin, Mario Nicolas Caccalano, Guilherme Dilarri, Caio Felipe Cavicchia Zamuner, Natália Alleoni, Luiz Leonardo Saldanha, Maurício Bacci Jr., Henrique Ferreira 

First published: 27 March 2021 | <https://doi.org/10.1111/jfpp.15496>

We showed that eugenol (clove essential oil) is effective to disinfect citrus fruit against *Xanthomonas citri*/citrus canker

Eugenol substitutes hypochlorite as a disinfectant and its use is allowed by the European Union

Eugenol may also protect plants against bacterial infection

We look for partners to scale up the production of antibacterial compounds, and to supply building blocks/biopolymers [cellulose (water soluble modifications), dextran, chitosan, pectin] for the synthesis of microgels intended to encapsulate our antibacterial compounds

henrique.ferreira@unesp.br

19 97135 4894