



QUALITYFRUIT

2016

October 6-8
Porto, Portugal

To foster European Collaborations on Fleshy Fruit Research
Final Annual Conference of the COST ACTION FA1106



COST is supported by the EU Framework Programme
Horizon 2020



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Venue:

Faculty of Sciences from University of Porto
Rua do Campo Alegre, s/n
(Auditorium FC1 – 027)
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P14 - Evaluation of natural antimicrobial agents against *Pseudomonas syringae* pv. *Actinidiae*

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Actinidia deliciosa and *A. chinensis* are the most economically important species of kiwifruit worldwide. In Portugal their production is ca. 25.000 tones, representing an important source of income; however, these species are susceptible to *Pseudomonas syringae* pv. *actinidiae* (PSA), the causal agent of kiwifruit bacterial canker. PSA was identified in Portugal in 2011, leading to production losses of up to 80 % in several orchards. Current control techniques are expensive and consist in copper- and antibiotics-based compounds application, with serious risks of environmental contamination and development of resistant bacteria.

In this report, the antibacterial activity of 11 compounds of natural origin (propolis, chitosan, four bacteriocins and five plant essential oils) was evaluated against PSA. All compounds, except pediocins, had a significant antimicrobial activity against PSA in agar plates after 48 h of exposure. Chitosan and propolis had minimum inhibitory concentrations (MICs) as low as 0.075 % and 0.25 %, respectively, and plant essential oils MICs ranged from 6.25 % to 25 %, with laurel and basil showing the highest inhibitory capacity. Also, basil essential oil and chitosan presented total inhibitory activity against PSA in liquid media after only 5 minutes of exposure. These results provide strong evidence on the potential use of natural compounds in the formulation of more environmentally friendly products for the control of kiwifruit bacterial canker.