Phytophthora species, as well as other telluric pathogens, are harmful microorganisms very difficult to control with conventional means. The low effectiveness of chemical formulates is principally due to the development of strains resistant to fungicides. Furthermore, the use of resistant plants has several limitations due to the extreme ability of *Phytophthora* species to mutate and overcome host resistance. These factors together with the risks and negative impact on human health and the environment underline the need to develop new screening methods and sustainable control strategies. In this work, antagonistic bacterial strains and fertilizers with collateral antimicrobial activity, already selected for their antagonistic/inhibitory activity against fungal and/or bacterial pathogens, were evaluated against *P. cinnamomi*. Assays were carried out *in vitro*, on agarized media as well as in vivo on pot grown young holm oak plants. Moreover, as a new rapid lab screen *in vivo* we proposed the use of apple fruit. More specifically, surface sterilized apples were artificially wounded, treated with biocontrol or chemical products and inoculated before (curative tests) or after (preventive test) with the pathogen. Several experiments have shown a good agreement between the rapid fruit screening and the classic plant test method based on treated and artificially inoculated olm oak plants. Therefore, the fruit method could be used as a new alternative model *in vivo* to pre-select/evaluate new biological or integrated tools/strategy.

First report of *Fusarium pseudograminearum* causing root and crown rot in the halophyte *Salicornia europaea*

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Salicornia europaea L. (glasswort), a euhalophyte in the Amaranthaceae family, is a valuable green vegetable. In July 2021, an outbreak of root and crown rot disease occurred on *S. europaea* grown in peat-filled pots under greenhouse. Symptoms appeared on 20–25% of 6-month-old plants. The fungus was identified as *F. pseudograminearum* by means of morphological observations and molecular sequence analysis based on *tef-1α* gene (EF-1/EF-2) and using species-specific PCR primers (Fp1-1/Fp1-2). This pathogen is known as the causal agent of crown rot in cereals and has sporadically been reported on wheat plants and seeds of soybean and vetch in Europe. A pathogenicity test was then conducted in a growth chamber to fulfill Koch's postulates. Forty-eight seedlings (57 days after sowing) were grown in aerated non-saline nutrient solution in which a suspension of *F. pseudograminearum* macroconidia had been poured (final concentration 10^5 ml^{-1}). Other 48 plants (controls) were grown hydroponically in a separate growth chamber and inoculated with sterile distilled water. Twenty-four days after inoculation (dpi), half of control and inoculated plants was transferred into a new sterile nutrient solution while the other half was transplanted into pots filled with sterilized peat. After 80 dpi, 100% of pot-grown plants showed root and crown rot symptoms whereas only 70% of infected hydroponically-grown plants developed symptoms. No evidence of disease was observed in the controls. *F. pseudograminearum* was consistently re-isolated from diseased plants in both cultivation systems (64.5–83.0%). Further investigations are in progress on this new pathosystem in saltwater hydroponics.

Advances in plant disease detection: pulse thermography as new tool to predict *Botrytis cinerea* infection in pepper and tomato

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Botrytis cinerea is a necrotrophic pathogen characterized by short life cycle, high reproduction and genetic variation. Infrared thermal imaging is a non-destructive and fast technique, which holds great promise for the detection of pathogen attacks in plants. Herein, we evaluated and predicted the development of gray mold in pepper (*Capsicum annum*) and tomato (*Solanum lycopersicum*) plants by pulse thermography of the leaves in the pre-symptomatic phase. For this purpose, pepper and tomato plants were inoculated with different concentrations of *B. cinerea* or *Trichoderma harzianum* spores, a beneficial fungus employed as non-pathogenic control. Thermographic measurements, carried out during seven days after infection, revealed specific thermal patterns in the infected leaves after a few hours (6 – 48 h) and earlier than the appearance of the characteristic lesions caused by *B. cinerea*. Diagnostic parameters, such as specificity, sensitivity, positive and negative predictive thermographic values, confirmed a good reliability of the pulse thermography technique in the early detection of *B. cinerea* infections. In order to better understand the mechanisms underlying the thermographic patterns caused by the gray mold, stomatal opening and conductance as well as