

and storability of lettuce grown in a hydroponic system, as compared to untreated control. Lettuce plants treated with the MLEs showed significantly improved quality parameters (leaf number, area, and color), total phenolic content and antioxidant activity, and resistance against the fungal pathogen *Botrytis cinerea*, comparable to that obtained with commercial formulations, particularly those based on the protein hydrolysate. A difference between the *M. oleifera* extracts was observed, probably due to the different compositions. Although further large-scale trials are needed, the tested MLEs seem a promising safe and effective preharvest means to improve lettuce agronomic and quality parameters and decrease susceptibility to rots.

### Testing the efficacy of the Sanodyna® product for the control of *Gnomoniopsis castaneae*

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*Gnomoniopsis castaneae* (syn. *Gnomoniopsis smitholgyvi*) is an emerging fungal disease causing nut rot of sweet chestnut (*Castanea sativa*), currently affecting chestnut fruits production in several Italian regions. There is a lack of effective management and control strategies against this fungus due to the little knowledge about its epidemiology and its endophytic lifestyle. To date, post-harvest treatments, like the “curatura”, which consists of submerging the fruits in hot water (50 °C) for 45–50 min and cooling them in a water bath at 15–18 °C for an equal time, are the only methods applied to control and manage the disease, also because in pre-harvest, i.e., in the chestnut groves, the application of fungicides is strictly limited by law. This study aimed at testing the efficacy of Sanodyna®, an environmentally-friendly product commercially sold as a sanitizer, to control *G. castaneae* in post-harvest treatments. Three concentrations, minimum (15 ppm), medium (110 ppm) and maximum (520 ppm), were tested for their ability to inhibit *G. castaneae*. The test was first carried out *in vitro*, by using different strains of *G. castaneae* and adding Sanodyna® into the culture-media. Then, the product was tested on chestnut nuts. A reduction in growth was observed *in vitro* compared to the control, but the treatment did not eradicate the disease

from chestnut fruits. Indeed, the product was effective in sanitizing the external surface of the fruit, without being able to reduce significantly the frequency of the fungus. Results obtained in this work are a preliminary step towards implementing a control method against *G. castaneae* using Sanodyna®.

This work was supported by the project “Innovation and sustainable recovery in some piedmont agrifood chains of the Tuscan Apennines”—Fondazione Cassa di Risparmio di Firenze.

### Development of a new LAMP assay for the fast diagnosis of *Elsinoë fawcettii*

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The ascomycete fungus *Elsinoë fawcettii* Bitancourt and Jenkins (Myriangiaceae, Elsinoaceae) is a quarantined organism in the EU as it can cause important diseases (citrus scab, sour orange rind and common rind) on *Citrus* species, cultivars and hybrids. As the disease is still restricted to Georgia in the EPPO region, the possibility to rely on accurate and solid diagnostic protocols to unequivocally identify *E. fawcettii*, even at its latent stage, would be of great importance in order to prevent its possible introduction in uncontaminated areas and to control its impact. Traditional diagnosis of this fungus can be troublesome and time consuming, requiring well-furnished laboratories and expert operators with skills in mycology. DNA-based detection could therefore enable to overcome these drawbacks and allow a rapid, sensitive and accurate diagnosis of the pathogen. Recently, PCR and qPCR-based assays have been developed, able to simultaneously detect different pathogens affecting *Citrus* species, including *E. fawcettii*. To further