P166. Insight the postharvest antifungal potentials of hydroalcoholic propolis extracts

A. Sadallah[1], E. Aprea[2], A. Caratti[3], C. Cordero[3], A. Angeli[4], S. Martens[4], A. Di Francesco[1]

[1]Department of Agricultural, Food, Environmental and Animal Sciences, University of Udine, Via delle Scienze 206, 33100 Udine, Italy; [2]Center Agriculture Food Environment, University of Trento, Italy; [3]Department of Drug Science and Technology, University of Turin, Torino, Italy; [4]Research and Innovation Centre (CRI), Fondazione Edmund Mach, Italy E-mail: alessandra.difrancesco@uniud.it

In light of the harmful effects of chemical plant protection products (PPPs) on the environment and human health, eco-friendly alternatives need to be explored. This study focuses on the control of *Botrytis cinerea*, one of the most important postharvest pathogens of blueberry and table grape, by the application of different propolis extracts from various Italian regions (Tuscany, Veneto, Friuli Venezia Giulia, and Umbria). In the study, different extraction methods were tested to obtain active hydroalcoholic propolis extracts (HPEs). The study demonstrated that propolis extracted with 90% ethanol for 24 hours, previously sonicated for 20 min, showed the best efficacy against gray mold. The efficacy of non-volatile and volatile metabolites of HPEs at different concentrations (0, 3.12, 6.25, 12.5, 25, 50, 100, 150, 200 ppm) was tested *in vitro* against *B. cinerea* conidial germination displaying an inhibition ranging between 56.51% to 98.83% and 40.3% to 75.6% on average, respectively. By the previously obtained results, the EC50 values of each HPE in relation to the assayed mechanisms of action were determined. Both metabolites were tested on blueberry and table grape to validate their efficacy. By HPLC and SPME-GC×GC-ToF MS analysis, HPEs diversity composition was confirmed.