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Effect of wild oregano essential oil on *Erwinia amylovora*

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Possibilities of control of *Erwinia amylovora*, significant pathogen of pome fruits, have always been limited. Due to resistance problems, use of antibiotics in agriculture is prohibited or restricted in most countries. Essential oils, as complex mixtures with pronounced antimicrobal activity and favorable ecotoxicological properties, present alternative, control tools for many plant pathogens. In this study, effect of different exposure periods (2, 4, 6, 20, 24 and 48 h) to two concentrations of wild oregano essential oil (0.03 and 0.06 µl mL^{-1} of air) on *Erwinia amylovora* isolates was tested *in vitro*. Identification of the oil components was conducted by gas chromatographic-mass spectrometric analysis. The trial was conducted in 2015 and *Erwinia amylovora* isolates were obtained from apple seedlings in the same year. Wild oregano essential oil exhibited bactericidal activity on all tested *Erwinia amylovora* isolates, regardless applied concentration. However, at concentration of 0.06 µl mL^{-1} of air lethal effect was obtained after 24 h, while at lower concentration exposure period of 48 h was needed for lethal effect to occur. Component identification of wild oregano essential oil showed that carvacrol is its dominant constituent (89.1 %) which is probably responsible for its high antibacterial activity.

Keywords: bacterial pathogens, biocontrol, *Origanum vulgare*, pome fruits

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