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OC6 - *SOLIDAGO CANADENSIS* L.: A DANGEROUS PLANT INVADER AS POSSIBLE PEST CONTROL

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The promising biological effects of many plants essential oils (EOs) encourage researchers to study their biochemical properties to be used as possible natural pesticides and not only as herbal medicines. Despite *Solidago canadensis* L. (Canadian goldenrod), Asteraceae family, is a dangerous plant invader in Europe, which suppress the indigenous flora, the current research has been conducted to evaluate the possible antimicrobial effects of its essential oil (EO) to control some common plant diseases caused by several postharvest phytopathogenic fungi (*Monilinia fructicola*, *Botrytis cinerea*, *Aspergillus niger*, and *Penicillium expansum*). Moreover, the antibacterial activity has been also carried out against some phytopathogenic bacteria Gram positive and Gram negative compared to the synthetic antibiotic Tetracycline. Minimum inhibitory concentration was carried out to determine the lowest effective EO dose using a 96-well microplate. The cell membrane permeability was also evaluated by measuring the electric conductivity (EC) to examine the possible mechanisms of action of *S. canadensis* EO. Chemical characterization of EO has been carried out using gas chromatography and mass spectrometry (GC-MS). Thirty-two identified components in *S. canadensis* EO presented 97.7% of total compounds in EO. The principal compounds were identified as germacrene D (34.9%), limonene (12.5%), α -pinene (11.6%), β -elemene (7.1%), and bornyl acetate (6.3%). In addition, *S. canadensis* EO demonstrated promising *in vitro* antimicrobial activities against the majority of tested phytopathogens at all tested concentrations.