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P.24. Nematicidal potential of *Mentha x rotundifolia* hydrolate by-product

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Resumen:

Because of the environmental, food safety, and health-related issues associated with the application of chemical nematicides, growing emphasis is being laid on plant parasitic nematode control through plant resources. Essential oils (EO) are obtained from the distillation process of aromatic plants, generating hydrolates as byproducts. In agriculture, the pesticide effects of hydrolates have been extensively described and, specifically, the nematicidal potential of some hydrolates has been reported. *Mentha x rotundifolia*, is an aromatic and medicinal plant of ethnopharmacological interest and several studies have demonstrated the antioxidant, antimicrobial, antifungal, insecticide, and nematicidal activity of its essential oil. Following a process of crop domestication, a chemically stable population of *M. rotundifolia* has been developed for further valorization. The in vitro nematicidal effects of Spanish *M. rotundifolia* essential oil (EO), with piperitone oxide as the main component, has been previously demonstrated. In this work, we have studied the in vitro and in vivo nematicidal activity of *M. rotundifolia* hydrolate by-product obtained from the semi-industrial vapor-pressure essential oil extraction. The essential oil, the hydrolate, and its organic fraction caused high mortality of juveniles, suppressed egg hatch, and reduced nematode infection and reproduction in tomato plants. The nematicidal compounds of the hydrolate have been identified by the bio-guided fractionation of the organic extract by flash chromatography. These findings have important implications for the development of new nematode control products based on hydrolate compounds and highlight the recovery of waste from essential oils extraction

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