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***Pseudomonas* sp. as a new potential biocontrol agent against *Heterobasidion* species attacking conifers in Europe**

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The *Heterobasidion annosum* species complex comprises five fungal species causing the most destructive root and butt rots on conifers in the northern hemisphere. Effective control strategies against these fungi include stumps treatments with either chemical (e.g. urea) or biological products consisting of inocula of fungi competing with *Heterobasidion* spp. The only biological products registered for use against these pathogens are based on *Phlebiopsis gigantea*. The present study aims to test the efficacy *in vitro* of the commercially available bio-fungicide Proradix® (*Pseudomonas* sp. DSMZ 13134) against the four species of *Heterobasidion* currently present in Europe, i.e. the three native species and the non-native invasive one *H. irregulare*. Dual culture assays of antagonist and pathogen (5 isolates per species) were implemented to assess the mycelial growth inhibition on two culture media at two different temperatures. The effects of volatile organic compounds (VOCs) and cell-free filtrates (CFF) were investigated as well. In dual culture experiments, Proradix® significantly ($P < 0.05$) reduced the growth of *Heterobasidion* spp. However, the efficacy was variable depending on *Heterobasidion* species and tested conditions. While the CFF at 80% (v/v) concentration prevented both mycelial growth and spore germination of the tested isolates, VOCs seemed to play a minor role in the inhibition of *Heterobasidion* spp. Results indicate that Proradix® and its CFF are effective *in vitro* against *Heterobasidion* spp. If this efficacy will be confirmed by further experiments in controlled conditions and in the field, Proradix® could become an option for the management of forests challenged by *Heterobasidion* spp. in Europe.