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P32. ACUTE TOXICITY OF PLANT EXTRACTS TOWARDS *DAPHNIA MAGNA*

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ABSTRACT

The demand for natural based products for the cosmetics industry is increasing sharply and therefore the search for new alternatives to the traditionally used plants is growing. These alternative plants can be an important source of bioactive compounds under a circular economy approach. Within the framework of Inovep project, several plant species, some of which autochthonous from Portugal, were identified as potential sources of bioactive compounds, namely: gum rockrose (*Cistus ladanifer*), curry plant (*Helichrysum italicum*), hop (*Humulus lupulus*), Mediterranean thyme (*Thymbra capitata*) and basil (*Ocimum basilicum*). Considering the potential future use of these plant extracts by the industry, it is necessary to assess the risk associated with their introduction into the ecosystem. This work aims to evaluate the toxic effects of different extracts of these five species. Acute toxicity tests using the model organism *Daphnia magna* were performed and the immobilization after 24 and 48 hours of exposure was evaluated. The EC50 (the concentration estimated to immobilize 50 per cent of the *Daphnia*) varied from $201.8 \pm 3.28 \times 10^{-5}$ mg.L⁻¹ at 24 hours and $199.5 \pm 5.9410 \times 10^{-5}$ mg.L⁻¹ at 48 hours for *Cistus ladanifer* extract and 11.2 ± 0.2403 mg.L⁻¹ at 24 hours and 11.2 ± 0.4095 mg.L⁻¹ at 48 hours for *Thymbra capitata* essential oil. For *Humulus lupulus*, *Helichrysum italicum*, *Thymbra capitata* in the form of hidrolate, and *Ocimum basilicum* no immobilization was observed until the highest concentrations tested for various types of extracts, suggesting these extracts present low to no risk towards *D. magna*.