

BOOK OF ABSTRACTS
POSTERS

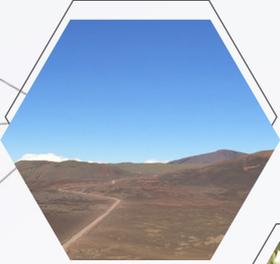


Island BIOLOGY

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Acaricidal and insecticidal activities of plants among Réunion island's flora

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La Réunion is among the world's top biodiversity hotspots with an endemic rate approximately of 40%. Due to the tropical climate, the island is subject to manifold crop pests and vector diseases. Among them, *Bactrocera cucurbitae* also known as the melon fly is considered as the major pest of Réunion island's agricultural activities. On the other hand, the cattle industry is affected by the tick *Rhipicephalus microplus* causing enormous losses in milk and hide production. With the purpose of discovering new biocidal natural extracts, several plants from the Réunion island's flora were also explored. The essential oil (EO) of *Peperomia borbonensis* was evaluated by using a filter paper impregnated against the melon flies. The EO characterized by a high predominance of phenylpropanoids compounds with myristicin (39.5%) and elemicin (26.6%) as main components showed a LC50 and LC90 of 0.23 mg/cm² and 0.34 mg/cm². The median lethal time (LT50) was also determined to compare the toxicity of EO and the major constituents. The EO was the most potent insecticide (LT50= 97.97 min, SE = 1.72), followed by the mixture of myristicin and elemicin (1.4:1) (LT50= 126.84 min, SE = 2.11). Against *Rhipicephalus microplus*, the acaricidal activity was evaluated using the modified larval packet test (LPT). At a concentration of 5 %, the leaves of *Peperomia borbonensis* and the bark of *Zanthoxylum heterophyllum* extracts have showed a mortality rate of 100%. *Monimia rotundifolia* (65.7% of mortality) showed a medium activity and *Psiadia amygdalina* leaf extract had weak acaricidal activity with 31.8% of mortality. These plant extracts exhibited biocidal activities that were not described in the literature and that are congruent with traditional uses for some of them. This emphasize the fact that exploring Réunion island biodiversity could lead to the discovery of new active molecules and the valorization of little known plants.

Keywords: acaricidal, biodiversity, insecticidal, plant extracts, Réunion island

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