

**Fruit volatiles from *Lithraea molleoides* (Vell.) Engl.: a source of allergenicity.**

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Lithraea (Anacardiaceae) is a genus that includes three species: *L. caustica* Hook. & Arn., endemic to Chile; and *L. brasiliensis* Marchand and *L. molleoides* (Vell.) Engl. commonly known as “*aroeiras*” or “*arueras*” occurring in Brazil, Uruguay, and Argentina [1]. The last species is a ubiquitous tree that grows in uncultivated fields and forests, and it is well known to people because of its poisonous properties producing eczematous allergy contact dermatitis (ACD) with erythema, edema, papules, vesicles, or bullae [2]. Alkyl/alkenyl catechols and resorcinols present in *Lithraea* spp. are informed allergens common to the Anacardiaceae, responsible at least in part for the ACD [2]. However, also airborne contact dermatitis (ABCD) is usually reported for these species, but not research have been conducted to elucidate the causes behind. Undoubtedly, volatiles from leaves and fruits (even on the soil) could be potential allergens when they are released in the environment. In the past 25 years, dermatologists who are interested in dermato-allergy, have been confronted with an increasing frequency of allergies caused by essential oils (EOs) [3]. Recently Minteguiaga *et al.* [4] reported that the main components in the *L. molleoides* fruits (drupes) EO are volatile allergy elicitors such as α -/ β -pinene, δ -3-carene, and myrcene (this representing more than 40% of the oil).

In this work we present the volatile profile including free and glycosylated fractions of *L. molleoides* fruits and their histochemical localization to evaluate the presence of potential allergens responsible of ABCD. Fruits were collected at Miriñaque and Iporá regions (Rivera and Tacuarembó, respectively), Uruguay. Fruit volatiles and their precursors aglycons among the bound forms, were analysed by GC-MS after adsorption and subsequent elution from a SPE cartridge packed with highly cross-linked styrene-divinyl benzene polymer [5]. To identify the components, mass spectra and LRI comparisons with commercial/in-house libraries were performed [4,5]. A histochemical study employing NaDi and PAS staining was conducted to identify the compartments of biosynthesis. The results showed five major compounds in the free volatile fraction with myrcene, 1,8-cineole, linalool, α -terpineol and geranyl acetate representing almost 88% of the composition, all compounds considered as allergy elicitors [3]. In addition, the glycosylated fractions showed linalool, 4-terpineol, α -terpineol, methyl salicylate, benzyl alcohol, phenethyl alcohol and (2Z,6Z)-farnesol (34% of the fraction), some of them also reported allergens [3]. The histochemical assays pointed out the presence of terpenes and free sugars in the mesocarp secretory ducts and parenchyma, layers that becomes dark and joined to the endocarp when ripping. Our results highlight the importance to considering the role of volatiles and glycosylated compounds (potential volatiles) when evaluating the risk of allergenicity to people around *L. molleoides* trees at fruiting stage.

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