

Pollination strategies in Neotropical genus *Maxillaria sensu lato* – Chemical and micromorphological analysis of floral attractants and their potential biological implications

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About 56% of *Maxillaria* representatives attract their pollinators by “empty promises” - combinations of visual, tactile and olfactory stimuli. The remainders offer different types of rewards, e.g. nectar and wax-like substances. Waxes and lipid secretions are produced usually by floral papillae and trichomes on the lip surface.

Our main aim was to investigate floral attractants in three taxa from distinctive alliances of broadly defined genus *Maxillaria*. All species were examined by means of scanning and transmission electron microscopy in search of micromorphological structures and evidences of secretion. Surface waxes and fragrance compounds were analyzed in dichloromethane extracts from whole flowers using gas chromatography-mass spectrometry (GC-MS), while nectar composition was studied in methanolic extracts from whole flowers by nuclear magnetic resonance spectroscopy (NMR). Volatiles detected included several standard monoterpenes, with the most abundant limonene in all plant species. Surface waxes were composed of saturated and unsaturated hydrocarbons and fatty acids (including atypical long-chain monounsaturated fatty acids in range of 18-28 carbon atoms), monoacylglycerols and smaller amounts of other organic compounds. Their composition depended on the plant species studied and their possible functions remains unknown, while it is supposed that they can act as protective substances against microbial infestation.