Abstract

Cytogenetic analyses, of pollen viability, nuclear DNA content and RAPD markers were employed to study three chemotypes of Lippia alba (Mill.) (Verbenaceae) in order to understand the genetic variation among them. Different ploidy levels and mixoploid individuals were observed. This work comprises the first report of different chromosome numbers (cytotypes) in L. alba. The chromosome numbers of La2-carvone and La3-linalool chemotypes suggested that they are polyploids. Flow cytometric analysis showed an increase of nuclear DNA content that was not directly proportional to ploidy level variation. A cluster analysis based on RAPD markers revealed that La3-linalool shares genetic markers with La1-citral and La2-carvone. The analysis showed that the majority of genetic variation of La3-linalool could be a consequence of ixoploidy. ur data indicates that sexual reproduction among those three chemotypes is unlikely and suggests the beginning of reproductive isolation. The results demonstrated that chromosome analysis, nuclear DNA content estimation and RAPD markers constitute excellent tools for detecting genetic variation among L. alba chemotypes.

Keywords
Cheotype, cytogenetic, cytotype, DNA content, RAPD, Lippia alba.