DENSITY OF GLANDULAR HAIRS IN LEAVES OF *Lippia salviifolia* (VERBENACEAE) IN TWO PHYSIOGNOMIES OF CERRADO

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INTRODUÇÃO

The presence of glandular hairs in vegetative and reproductive organs is a common feature for many eudicotyledonous families such as Verbenaceae (Metcalfe & Chalk 1950) where aromatic and medicinal species are included (Souza & Lorenzi 2008). The biologically active substances produced by these glands have great importance in the interaction between plant and environment providing protection against herbivores and pathogens, high temperature, intense UV-B radiation and excessive water loss, besides working in attraction of pollinators and dispersal agents of diaspores (Harbone 1993; Valkama *et al*. 2003). Although the occurrence of glandular hairs is a constitutive feature in Verbenaceae (Metcalfe & Chalk 1950), the density of these glands can vary according to environmental influences (Martínez-Natarén *et al*. 2011). However, information on variation in the density of glandular hairs in native aromatic species in response to environmental factors is lacking. *Lippia salviifolia* is a Verbenaceae species native from the Brazilian Cerrado occurring in different physiognomies of the vegetation such as “campo cerrado” and “*stricto sensu* cerrado”. Recent studies show the importance of the bioactive compounds produced by its hairs in the treatment of carcinomas (Funari *et al*. 2011). Information on the density of the glandular hairs in individuals living in different environmental conditions is lacking.

OBJETIVOS

This work aimed to analyze the density of glandular hairs in leaves of adult individuals of *Lippia salviifolia* living in different physiognomies of the Brazilian Cerrado.

MATERIAL E MÉTODOS

Samples of the median region of full expanded leaf blade (3.5cm length) were collected from adult individuals of *L. salviifolia* living in reminiscent of Cerrado in Pratânia city (S22º48’50,2” e W48º44’35,8”), São Paulo State, Brazil. Individuals living in “stricto sensu cerrado” (n=12) and in “campo cerrado” (n=12) were sampled. The “*stricto sensu* cerrado” is characterized by medium height trees, shrubs and herbaceous species, whereas grass and small shrubs predominate in the “campo cerrado” (Maroni *et al*. 2006). The samples were fixed in 2.5% glutaraldehyde in 0.1M phosphate buffer pH 7.3, post-fixed in 1% osmium tetroxide, dehydrated in alcoholic solutions, dried in critic point, metalized with gold (Robards 1978) and analyzed on the scanning electron microscope (SEM) Fei Quanta. The glandular hairs were counted in a leaf area of 0,7mm2 using the Scandiun software. The results were submitted to statistic analysis (ANOVA) and the media compared using Tukey’s test to 5% of probability using the BioEstat 5.0 software.

RESULTADOS

Glandular hairs were observed in both abaxial and adaxial leaf surfaces of *L. salviifolia*. To individuals from both

"campo cerrado" and "*strict sensu* cerrado", the glandular density in the abaxial leaf surface was 3 to 4 higher than in the adaxial one. The glandular hair density in the abaxial leaf surface was higher (68.33 ± 11.63) to individuals from the "campo cerrado" in comparison to individuals from "*stricto sensu* cerrado" (48.67 ± 11.70) (P= 0.0009; F=15.6354). On the other hand, glandular hair density variations in the adaxial leaf surface were not significant (P = 0.2998; F= 1.1297).

DISCUSSÃO

Variation in the density of glandular hairs in *L. salviifolia* was observed only in the abaxial leaf surface, since this is the main site of occurrence of these glands. Following to Martinez-Natarén *et al*. (2011), microenvironmental and genetic factors must be considered in the understanding of the differences in the hair density in individuals of same species. So, the higher density of glandular hairs in the abaxial leaf surface in *L. salviifolia* individuals living in "campo cerrado" may be associated to the higher intensity of sunlight received for these plants leading to the photosynthesis maximization and to greater availability of carbon compounds required to formation of secretory structures (Lin *et al*. 2001). Our data can subsidize to studies involving management and sustainable use of this species. Ecophysiological researches will complement these results.

CONCLUSÃO

The density of glandular hairs in leaves of *Lippia salviifolia* varies in individuals living in different physiognomies of the Cerrado.

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