



## **GALLS ON REPRODUCTIVE VEGETAL ORGANS IN RESTINGA AREAS OF ILHA DA MARAMBAIA (MANGARATIBA, RJ, BRAZIL)**

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## **INTRODUÇÃO**

Insect galls are abnormal vegetal developments, which involve hyperplasia and/or hypertrophy of vegetal tissues, induced by insects (Bronner, 1992). The gall inducers are generally specific to host plant species and to vegetal organ of occurrence (Carneiro *et al.*, 2009). These galls could be found in vegetative and reproductive organs, the occurrence in these last can harming the reproduction of the host species (Mani, 1964). Inventories of insect galls in restingas are few, but the richness of these galls is evidenced in works to the southeast region of Brazil. These formations are investigated in the States of: Rio de Janeiro (Angra dos Reis, Arraial do Cabo, Carapebus, Maricá, and Rio de Janeiro cities), São Paulo (Bertioga city) and Espírito Santo (Parque Paulo César Vinha, Guarapari city). In these inventories, Myrtaceae and Asteraceae are identified as the families with the greatest richness of gall morphotypes and the Cecidomyiidae (Diptera) as the most diversified and abundant galling insect taxonomic group (Maia & Oliveira, 2010; Monteiro *et al.*, 1994 and 2004; Maia, 2001; Oliveira & Maia, 2005; Maia *et al.*, 2008; Bregonci *et al.*, 2010).

## **OBJETIVOS**

This work aims to increase the knowledge of diversity and distribution of Cecidomyiidae galls in restinga areas in the Rio de Janeiro State, to inventory and characterize morphologically the insect galls associated to reproductive vegetal organs of Ilha da Marambaia (Mangaratiba, Rio de Janeiro, Brazil).

## **MATERIAL E MÉTODOS**

This study was developed in Ilha da Marambaia, Mangaratiba city, in the south of the Rio de Janeiro State. Monthly collections were taken in the beaches of Kutuca, Grande, Suja, Caju, João Manoel, Sítio and Armação, from April/2010 to March/2011. Branches were removed of each host plant species, whenever possible with

flowers and fruits, for preparation of exsiccates used for species identification, which were deposited in the herbarium of Museu Nacional/UFRJ (MNRJ). Others branches with galls were collected and transported to laboratory in labeled plastic bags. Samples of each gall morphotype were singly conditioned in closed plastic pots aiming to obtain adults. Some galls were opened for observation of internal chamber and removal of immature. Samples of each gall morphotype were dried for preservation and incorporated in the galls collection of the MNRJ. All the insects obtained were preserved in alcohol 70% and deposited in the Diptera collection of MNRJ. The Cecidomyiidae were mounted for identification in microscopy slide, following methodology of Gagné (1994).

## RESULTADOS

In the restingas areas of Ilha da Marambaia, 22 morphotypes of insect galls on reproductive organs were found, associated to 20 host plant species distributed on 16 families (Asteraceae, Bignoniaceae, Boraginaceae, Dilleniaceae, Euphorbiaceae, Fabaceae, Lauraceae, Malpighiaceae, Myrtaceae, Nyctaginaceae, Polygalaceae, Polygonaceae, Rubiaceae, Sapindaceae, Sapotaceae, and Verbenaceae). Most families had only one host species and one gall morphotype; Bignoniaceae, Euphorbiaceae and Fabaceae presented two host species, each one with one gall morphotype; and Malpighiaceae stood by have two host species and four gall morphotypes, three of them on *Byrsonima sericea* DC. Fourteen gall morphotypes were found on inflorescences (flower buds or flowers) (64%), and eight were induced on fruits (36%). The galls are classified as simple (13 morphotypes) (59%) and complex (9 morphotypes) (41%), according with the definition of Möhn (1962). Fourteen gall morphotypes were induced by Cecidomyiidae (Diptera), Curculionidae (Coleoptera) induced two gall morphotypes (9%), and Lepidoptera one (5%). The inducers of five gall morphotypes were not determined (23%), as the galls were collected without dwellers or with parasitoids. Cecidomyiidae was the main galling group, with 64% of the occurrences. The identified Cecidomyiidae totalized 10 species, distributed in five genera: *Asphondylia* Loew, 1850 (with five species), *Bruggmanniella* Tavares, 1960 (with two species), *Lestodiplosis* Kieffer, 1894, *Lopesia* Rübsaamen, 1908 and *Pisphondylia* Möhn, 1960 (with one species each). Among these species, six are new and they are being described by the first author. Four others Cecidomyiidae were identified only in suprageneric levels.

## CONCLUSÃO

Malpighiaceae and *Byrsonima sericea* are the plant family and species with the greatest number of gall morphotypes. The gall occurrence is higher in flowers than in fruits. Diptera, Coleoptera and Lepidoptera were identified as inducing groups, being Cecidomyiidae (Diptera) the most diversified. *Asphondylia* was the most representative genus.

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