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Andre Luis de Alcantara Guimaraes

Federal University of Rio de Janeiro, Brazil

Gall inducers and host plants: What changes may these organisms induce on plant metabolism?

Galls are anomalies in plant development of parasitic origin that affect the cellular differentiation or growth and represent a remarkable plant-parasite interaction. The galls may occur in all organs of the host plant from roots to fruits. However, the existence of galls in reproductive organs and their effects on host plants are seldom described in the literature. In the past decades, many studies aimed to analyze not only the morphological changes induced by these parasites but also the metabolic changes. Nevertheless, the mechanisms involved and how these organisms regulate these intricate changes still remain unclear. In our research, we present a novel study of galls in plants of the Neotropical region: The ‘witches’ broom’ galls developed in floral structures of *Byrsonima sericea* (Malpichiaceae). The affected inflorescences and flower buds showed several morphological and anatomical changes. The sepals, petals and carpels converted into leaf-like structures after differentiation and the gynoecium followed new destinations. In this work, we discuss the changes in the development of reproductive structures caused by witches’ broom galls and their effects on the reproductive success of the host plants. These results, combined with patterns in galls in different Neotropical plant species, suggest that gall inducers may alter gene expression, plant hormones and chemical compounds of host plants on their behalf.

Biography

Andre Luis de Alcantara Guimaraes has completed his PhD in Botany from Federal University of Rio de Janeiro (UFRJ) and Postdoctoral studies at the Faculty of Pharmacy from UFRJ. He is an Associate Professor of Faculty of Pharmacy from Federal University of Rio de Janeiro. He has published papers in reputed journals of Plant Science, especially with galls and their metabolic changes on host plants and research with medicinal plants.

andreluis.guimaraes@gmail.com

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