

# Plant Science

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### Gall inducers and host plants: Engineers of habitats and the importance of understanding the changes in 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 remain unclear. In our research, we present a review of galls in plants of the neotropical region. The affected organs, such as leaves, inflorescences and flower buds show several morphological and anatomical changes. In this review, we discuss the changes in the development of reproductive structures caused by galls and their effects on the reproductive success of the host plants. Additionally, galls may also induce changes in plant metabolism, changing their chemical composition and indirect plant defenses. 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

André Luis de Alcantara Guimarães has completed his PhD in Botany from Federal University of Rio de Janeiro (UFRJ) and Post-doctoral 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.

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