

Global Summit on
Plant Science

September 21-23, 2015 San Antonio, USA

Plant anatomy related to pathogen infection

Joao Paulo Rodrigues Marques
University of Sao Paulo, Brazil

The world's population is growing and the demand for healthy foods tends to increase. Plants are challenged by a wide variety of microbes and in several cases, plants present constitutive structural and biochemical barriers that act efficiently in containing infection or colonization processes. One special case is the interaction of the fungus *Colletotrichum acutaum* with *Citrus sinensis* petals. The fungus causes premature fruit drop. The Brazilian citrus producers apply fungicides 7-14 times since the beginning of the development of flower buds. Anatomical analysis shows that flower buds smaller than 8 mm long present constitutive structural and biochemical barriers to *C. acutaum*. The arrangement of the epidermal papillae in the petal primordia, the occurrence of prismatic crystals and the distribution of oil glands are constitutive barriers. For instance, spraying fungicides to control the disease can be delayed until flower buds are longer than 8 mm. The use of conventional and histochemical tests shows that only petals are infected by the fungus. The epidermal cells of stigma produce a large amount of protein and a protective layer that promotes stigma resistance to infection. On the other hand, pollen grains of *C. sinensis* are infected by the fungus and may in fact play a role in the spread of *C. acutaum* in citrus orchards. Understanding these barriers is essential to promote disease management in the field, reducing production costs and environment damages.

Biography

Joao Paulo Rodrigues Marques is a Plant Anatomist and has worked for more than ten years on histopathology of diseased orange plants. His has received Best Thesis award for his PhD thesis in 2014. He has published several papers about structure, ultra-structure and histochemistry related to plant efforts against different pathogens.

joapaulormarques@yahoo.com.br

Notes: