

## Novas abordagens para o controlo da Antracnose em Oliveira

### New Perspectives for olive anthracnose control

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The olive tree (*Olea europaea* L.) is affected by several diseases, including anthracnose, a disease of major concern in most olive-producing countries, that is able to destroy an entire production. Olive anthracnose is caused by diverse species of *Colletotrichum*; in Portugal, most of them belong to *Colletotrichum acutatum* complexes. Our studies have addressed many aspects of olive and *Colletotrichum* spp. interactions such as: 1) *Colletotrichum* spp. colonization and primary infection in olive trees of three important olive cultivars, 'Galega vulgar', 'Cobrançosa', and 'Azeiteira'; 2) spatial and temporal distribution of endophytic communities in olive cultivars with different degrees of susceptibility to anthracnose; 3) level of infection and variability of *Colletotrichum* spp. isolated from fruits of the major Portuguese olive cultivar 'Galega vulgar' grown under different modes of management. Our results showed that *C. godetiae* was detected in Alentejo for the first time and that *C. nymphaeae* is the key pathogen in olive anthracnose in Alentejo. We also verified that the cultivar 'Galega vulgar' presents a significant higher number of infected trees and higher percentages of infected organs when compared to 'Azeiteira' and 'Cobrançosa'. Our results showing that one particular isolate of *C. nymphaeae* was present in different organs of the same tree, suggest that the fungus may travel from the stems to other parts of the plant in a systemic movement. In addition, spatial-temporal analysis of endophytic communities showed that cultivar 'Galega vulgar' and season autumn present significant higher values in terms of fungal richness and diversity. Lastly, our advances suggest that the application of fungicides may have increased the selection pressure of *Colletotrichum* spp., since we observed that the fungicide treatment decreases the number of trees positive to *Colletotrichum* spp., but those that remain positive show a higher number of fruits infected. Overall, our results show the different impact anthracnose has in different olive cultivars and the importance of developing alternative strategies for the effective and timely management of the disease, in order to change the use of unnecessary fungicide applications that no longer show effect on many emerging resistant and highly virulent *Colletotrichum* spp. isolates.

**Palavras chave:** Anthracnose; Control; *Olea europaea* L.; Endophytic fungi; Fungicides; Resistance

#### Referências

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