

# 1 Fruit-associated endophytes from olive cultivars with 2 different levels of resistance to fruit fly and their 3 relationship with pest infestation

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8 Olive fruit fly, *Bactrocera oleae* (Rossi) (Diptera: Tephritidae) is the most important olive pest and  
9 with a major economic importance in the olive production worldwide. Different olive cultivars  
10 exhibit different propensities to fruit fly infestation and the causes are still unclear. Here, we want to  
11 disclose the potential role of the olive-associated endophytes in conferring such susceptibility  
12 differences. Accordingly, the endophytic microbial composition of infested and non-infested fruits  
13 from cultivars Madural (susceptible to olive fly) and Cobrançosa (less susceptible) were studied. A  
14 culture-dependent approach was used, being the isolates identified by sequencing of their internal  
15 transcribed spacer (for fungi) and 16S rRNA gene regions (for bacteria). Overall, there was a larger  
16 consortium of bacteria associated to olives than fungi. The bacterial communities were  
17 predominantly composed of Proteobacteria and Actinobacteria phyla while the fungal isolates belong  
18 to the Ascomycota and Basidiomycota. Both host cultivar and level of fly infestation had a negligible  
19 effect on fungal and bacterial community composition. Despite this, it was found a clear positive  
20 association of microbial consortia with the resistant cultivar (*Kocuria* sp., *Actinobacterium* sp.,  
21 *Rhodococcus* sp., *Pseudomonas citronellolis*, *Aspergillus flavus*, *Cladosporium* sp., and  
22 *Meristemomyces arctostaphylos*) and non-infested fruits (*Kocuria* sp., *Stereum* sp., and  
23 *Vishniacozyma victoria*). Their function roles on host cultivar susceptibility/resistance to fruit fly is a  
24 topic that requires further studies.

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