Interaction of olive fruit fly and *Colletotrichum* species infestation on olive fruits

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INTRODUCTION

Olive anthracnose, caused by *Colletotrichum* species, results in fruit rot and premature fruit drop, mummification, and oil quality degradation, especially during severe epidemic years. The olive fruit fly, *Bactrocera oleae* (Diptera: Tephritidae), is the most devastating pest affecting olive trees worldwide. Previous studies have provided evidence on the association between *Colletotrichum spp.* and *B. oleae* infestation, but the actual impact of *B. oleae* presence on fungal development remains uninvestigated.

MATERIALS AND METHODS

In this study, we attempted to correlate *B. oleae* and *Colletotrichum* infestations in olive trees, by determining the fungal presence in *B. oleae* infested and non-infested olive fruit.

- Two cultivars (Koroneiki and Koutsourelia) were selected
- Olive fruits from treated and untreated (control) trees of both cultivars were collected and examined for fungal, insect or combined infestation

Figure 1. Development of *Colletotrichum spp*. after *Bactrocera oleae* infestation on Koroneiki (left) and Koutsourelia (right) cultivar.

RESULTS

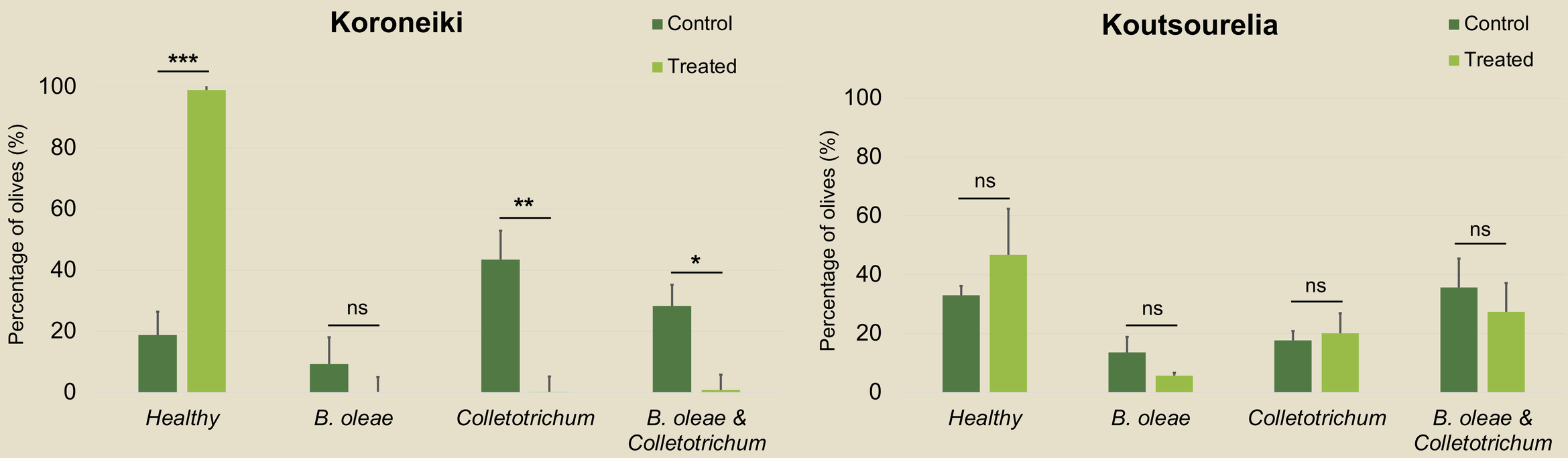

Figure 2. Development of *Colletotrichum spp.* with and without *Bactrocera oleae* infestations on Koroneiki (left) and Koutsourelia (right) cultivar. Asterisks denote significant differences from control trees (Student's t test, $P < 0.05$). Ns indicates not significant. Error bars represent SEM.

CONCLUSIONS

- **Combined infestation of *B. oleae* and *Colletotrichum* spp.** (Figure 1) caused higher quantitative damage to Koutsourelia olives than the fungus or pest alone on both treated and untreated fruits (Figure 2).
- **Treated Koreiniki olives** appeared to be **undamaged** (Figure 2), while untreated ones were more damaged by a combined infestation (Figure 1) rather than a pest one but less than a fungal damage alone (Figure 2).
- **Untreated olives** of both cultivars showed greater damage when infested **by the fungus alone and combined with the pest** compared to the pest alone (Figure 2).

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