

Efficacy of low-copper-content and silicate-based particle film products against olive fruit fly (*Bactrocera oleae* Rossi) infestations in olive groves

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INTRODUCTION & AIM

The olive fruit fly (*Bactrocera oleae*) is the most important olive pest worldwide, which can cause total yield losses in olive groves where its population is not controlled. The current knowledge suggests that some commonly used copper-based fungicides and silicate-based particle films can contribute to reductions in *B. oleae* infestations.

The aim of this study was to determine the efficacy of commonly used copper fungicides, two different low-copper products (alternative fungicides), and a silicate-based particle film for *B. oleae* infestations.

METHOD

This study lasted from July to October 2023 in an olive grove on the Croatian coast. It was set up on the most widespread Croatian cultivar, Oblica, and the following treatments were applied:

1. copper oxychloride (300 g/100 L),
2. copper gluconate (300 mL/100 L),
3. low-copper product (666.6 mL/100 L),
4. silicate-based particle film product (3 kg/100 L),
5. mixture of a low-copper and a silicate-based particle film product,
6. control (water).



The fruits were sampled every 15 days and examined for the presence of *B. oleae*. Total and harmful infestations were determined.



RESULTS & DISCUSSION

All of the treatments, with the exception of copper oxychloride, significantly reduced the total infestation of *B. oleae* compared to that with the control (Fig 1).

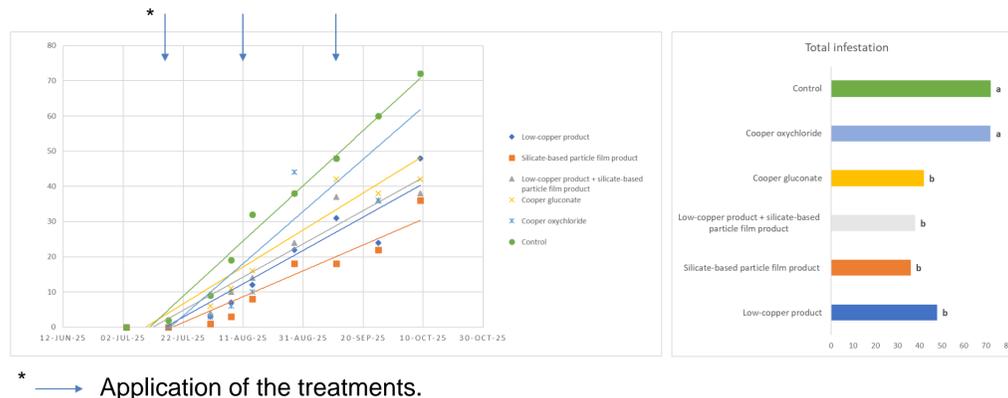


Figure 1. Total infestation (%) of *Bactrocera oleae*. The bars represent mean values of the analyzes. Different letters indicate significant differences between treatments.

While all of the treatments were found to be more effective in reducing harmful infestations than the control, only the silicate-based particle film product and the combination of the low-copper product and the silicate-based particle film product significantly reduced infestations (Fig. 2).

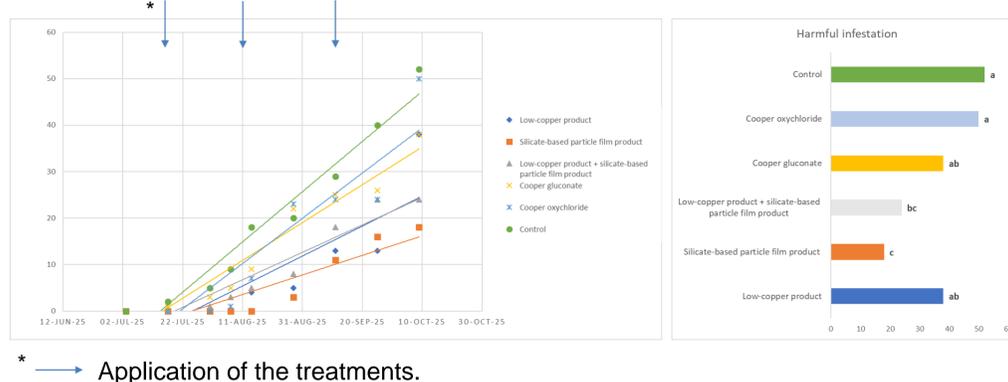


Figure 2. Harmful infestation (%) of *Bactrocera oleae*. The bars represent mean values of the analyzes. Different letters indicate significant differences between treatments.

CONCLUSION

These results indicate that the silicate-based particle film product and the mixture of the low-copper product and the silicate-based particle film product were the most effective in reducing *B. oleae* infestations. These products might have an important role in future olive fruit fly management programs.

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