

Field trapping of the olive moth (*Prays oleae* Bern.) using olive fruit volatiles as attractants

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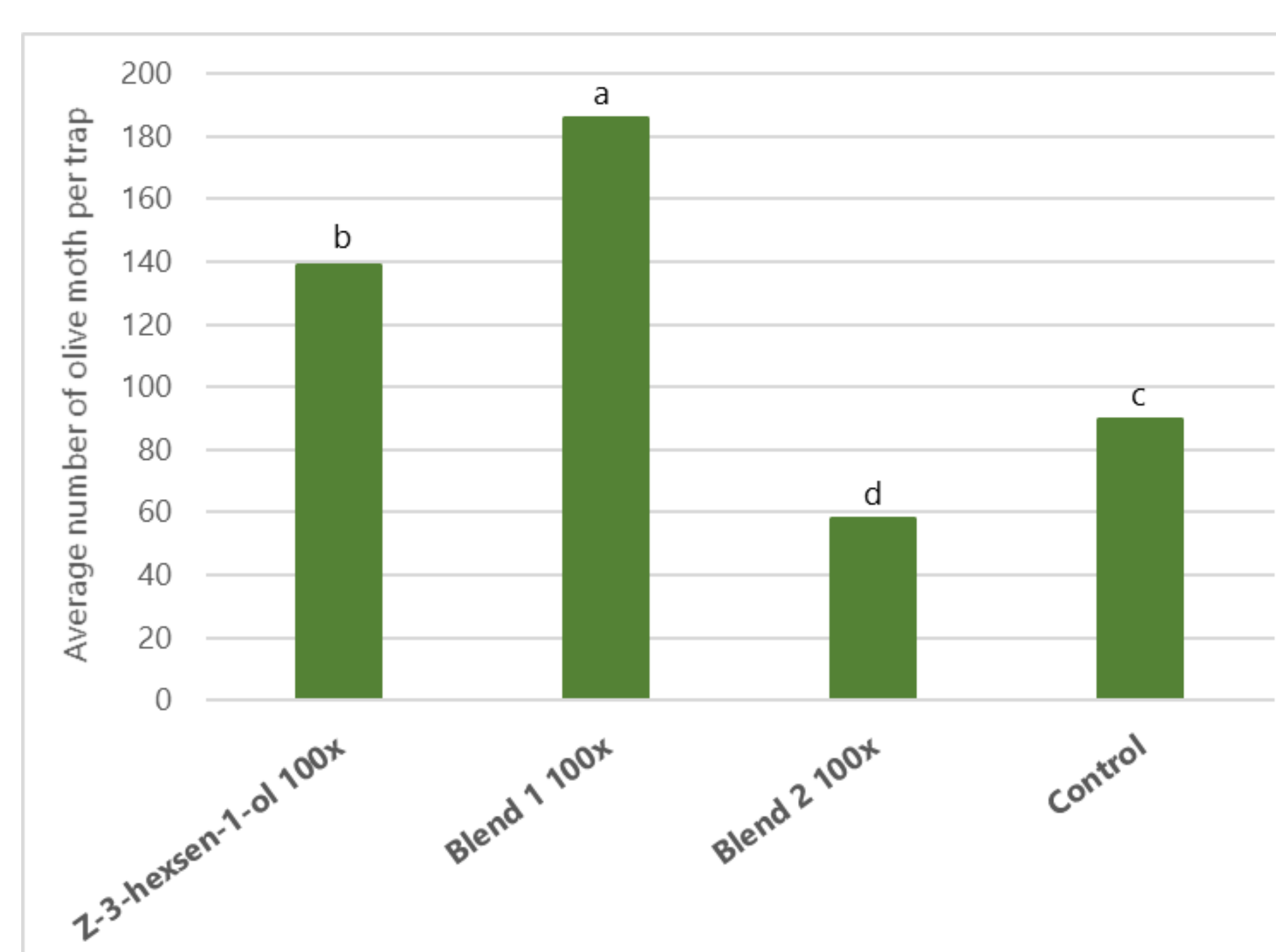
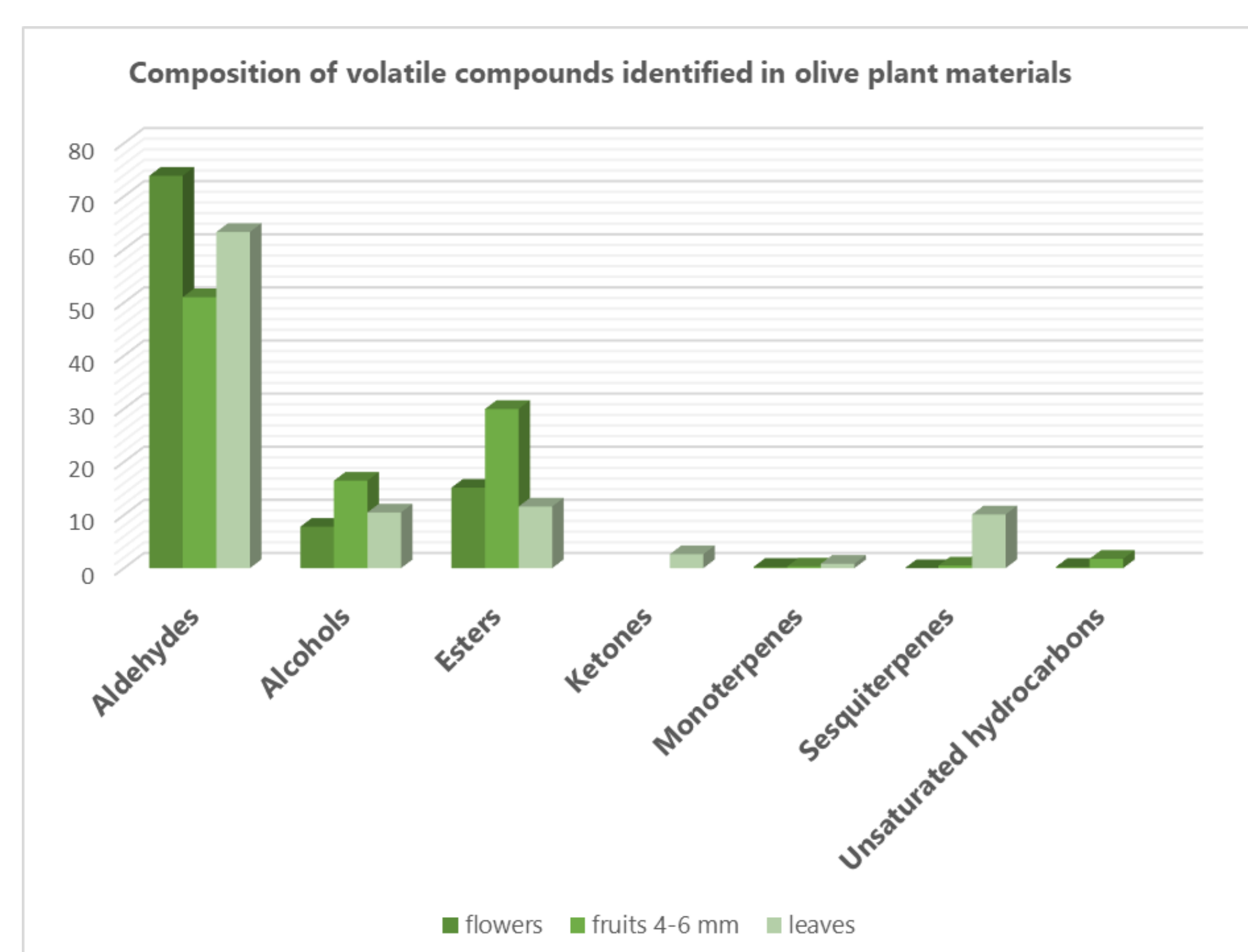
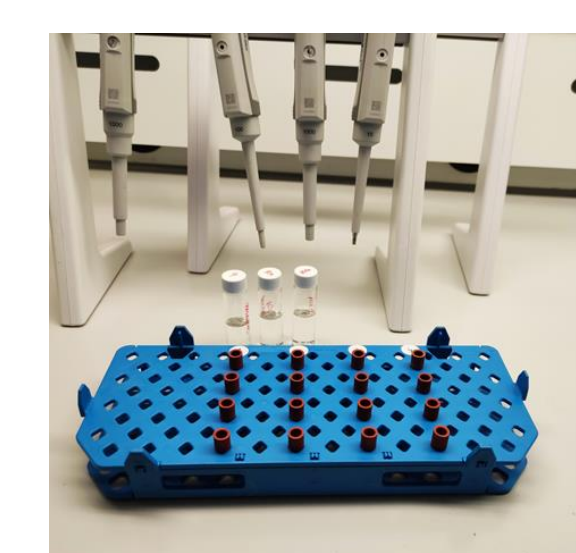
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The olive moth (*Prays oleae* Bern.) is one of the most important olive pests, causing damage every year. It develops three generations whose caterpillars attack different plant organs (flowers, fruits 4-6 mm and leaves). For many years, the main measure to control the pest was the use of pesticides, whose intensive use had numerous negative consequences for the environment. Therefore, the EU has committed to reduce pesticide consumption by 50% by 2030 and by 100% by 2050. For all these reasons, there is an urgent need to find new solutions for effective and environmentally friendly pest control. According to current knowledge, various insect species are attracted to the volatiles of the host plant. Since the interaction between olives and olive moth has not been studied yet, the aim of this study was to identify the volatiles of the olive, select those that could be responsible for the attraction of olive moth, and test them in olive grove.



Plant material was analyzed and volatiles were identified using HS-SPME-GC-MS analysis



Blend 1: hexanal:Z-3-hexen-1-ol:Z-3-hexen-1-ol acetate (5%:14%:81%)
Blend 2: hexanal:Z-3-hexen-1-ol:Z-3-hexen-1-ol acetate (8%:32%:60%)
Control: synthetic pheromone + hexane

The plant material was collected from selected olive cultivars and the volatiles were identified using HS-SPME-GC-MS. About 70 different volatiles were identified. Among them, hexanal, E-2-hexenal, Z-2-hexen-1-ol, Z-3-hexen-1-ol and Z-2-hexen-1-ol acetate were selected and tested individually or in blends with delta traps to attract olive moth in selected olive grove. The results showed that they did not attract olive moths either singly or in blends. Based on these results, the same volatiles were tested with synthetic pheromones in delta traps in the same olive grove. Delta traps containing Z-3-hexen-1-ol or the blend of hexanal:Z-3-hexen-1-ol:Z-3-hexen-1-ol acetate (5%:14%:81%) with synthetic pheromone were significantly more attractive to olive moths than delta traps containing pheromone alone.

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