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Remote monitoring of the Bactrocera oleae (Gmelin) (Diptera: Tephritidae) population using an automated McPhail trap

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Title:	Remote monitoring of the *Bactrocera oleae* (Gmelin) (Diptera: Tephritidae) population using an automated McPhail trap
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Abstract:	Remote pest population monitoring is of major importance within the context of precision agriculture. Information acquired from the field has been proved essential for proper decision making and pest management against various cultivation threats. *Bactrocera oleae* (Gmelin) consists the major pest for olive orchards. The key factor for a successful pest management is the on-time, accurate, valid and unbiased pest population monitoring. In this paper, a novel automated McPhail e-trap is presented. It is based on a custom electronic design capable of capturing pictures from its interior thus providing real-time information from the field. The pictures are easily accessible from a tailor-made web-based system which provides to the expert entomologists the capability to remotely assess the potential threat at any time and rate, thus neglecting the need for visiting and collecting data on site. The web-based system also supports automatic insect counting. The proposed system has been tested in real in-field conditions for an extensive period of time. The results of the study indicated its robustness and reliability. The attractiveness of the automated trap is comparable with that of the traditional reference glass-type McPhail trap, while the automatic insect counting technique offers an accuracy of almost 75%. Keywords Remote insect monitoring;McPhail trap *B. oleae;* Olive tree; E-trap