To develop and validate novel OFF-and ON-Season precision IPM strategies for *Ceratitis* *capitata* management in complex landscapes, three pilot fields (IPM Units) located in Corinthos, Peloponesse

**Pilot site characterization:**

Full characterization of both sites was conducted. Visual detailed inspection was carried out to identify the location of all relevant host plants/cultivars into the farm and orthomaps were provided.

**Population monitoring:**

Within each field, traps for monitoring medfly populations have been installed. Since September 2019, 3 Mc Phail trap have been placed to have an initial perspective of *C. capitata* populations. In mid-January 16 Tephri traps have been deployed within the pilot study site and in April, 15 Jackson traps. In July 16 Decis traps were installed in the pilot study site. Traps are checked at weekly intervals.

During 2020-2021: Adult monitoring of *C. capitata* populations continues by, 16 Tephri traps, 15 Jackson traps. and 16 Decis traps. Traps are checked at weekly intervals.

**Overwintering resources of medfly:**

Samples of all host available fruits in winter in 2020 and 2021 have been collected for estimating overwintering potential of medfly in the area. Fruits have been transferred in the lab and examined for oviposition stings. In addition, an other sampling took place in beginning of spring. Both samplings revealed that oviposition stings are not related to flesh infestation and larvae development in citrus fruits and especially for oranges. In oranges, even with as many as 21 oviposition stings no larvae developed. In bitter oranges, oviposition may also result in no infestation but in several cases an oviposited fruit will produce several pupae.

**Evaluation:**

During 2022-2023, implementation of mass trapping for medfly control with the use of Magnet traps was conducted. Two experimental citrus groves in Koniaris site were selected. The first experimental citrus grove was cultivated with sweet oranges of the variety «Washington Navel» and bitter oranges. The second experimental citrus grove was cultivated with sweet oranges of the variety «Valencia» and bitter oranges. The area of each experimental grove was approximately 2 hectares and was divided in two plots (plot A and plot B) with area 1 hectare each one of them. Each plot contained approximately 200 trees. In the plot A of each grove, 100 Magnet traps were placed in 200 trees (one trap every two trees) while in the plot B no Magnet traps were placed and is considered as the Control plot. The Magnet traps were placed on 7th July 2022, and they were replaced with new ones on 6th April 2023. In the first experimental field in the plot A were placed 3 Jackson traps and 3 Decis traps and in the plot B 4 Jackson traps and 4 Decis traps. In the second experimental field 3 Jackson traps and 3 Decis traps were placed in plot A and plot B. The traps were checked weekly to detect differences in the abundance of medflies in the two plots. Additionally, samplings of fruits were performed to detect differences in the fruit infestation between treatment and control plots.

**Results:**

During the period July 2022 – February 2024 the highest population density of medfly was recorded in autumn and early winter of 2022. The population also increased in the first experimental citrus grove during spring and autumn of 2023 and in the second experimental citrus grove in autumn of 2023. Generally, in both groves the population of *C. capitata* was lower in the Treatment plots where Magnet traps were placed, although in some periods (mainly with low population levels) there were no distinct differences.

The infestation level of sweet oranges of both varieties (Valencia and Washington Navel) was lower in the treatment plots compared to the control plots. The infestation level of bitter oranges was in some cases equal in the two plots probably due to the low availability of appropriate host fruits in April and May in the experimental area.

According to the results the use of Magnet traps is an effective method to reduce the medfly population density and accordingly the infestation rate of the fruits in citrus groves.