

A Challenge In Neretva Valley Area Wide Control Program: New Insight On Medfly Overwintering Capacity

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ABSTRACT

Background: Medfly area-wide suppression program in the Neretva valley integrates release of sterile medfly males from the late April till mid-November. This release strategy is implemented from since 2010 when an area-wide control program supported by FAO/IAEA was initiated. Methods: Medfly overwintering capacity in the Neretva valley was assessed during 2019-2021 as a part of the EU-funded project FF-IPM (<http://fruitflies-ipm.eu>). We analysed: i) adult, pupae and larvae overwintering capacity ii) detection of adults at hot spots from April to June and iii) available and suitable host plants fruits in late winter. Results: Experiments on the OFF -season survival potential of adults and pupae show that significant percentage of adults can survive through April and May. Significant pupal survival and long adult lifespan reach summer period and egg laying from April through July in both open field and urban conditions. Annual reports for 2014-2017 note several adult detections during early April in open fields, as well as detections of larvae in *Fortunella japonica* and *Citrus paradisi*. Conclusion: Medfly overwintering capacity in Neretva valley increased significantly in favor of the pest. Beside population that overwinters as larvae in fruit, significant percentage of adults are able to overwinter in both open field conditions as well in urban areas and reproduce through spring and summer. Findings from this research suggest that current national suppression strategy for *C. capitata* need to be adjusted. The release strategy should be optimized concentrating on hotspots supported with implementation of the off- season strategies and suppression methods with goal to control the low adult populations during winter and early spring period.

KEYWORDS: Medfly, Sterile Insect Technique, overwintering adults