

## **APPAGO PROJECT: INNOVATIVE MANAGEMENT TECHNIQUES FOR HILLY OLIVE ORCHARDS**

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“AppAGO” - Innovative management techniques for hilly olive orchards - is a project co-funded by Tuscany Region (Italy) under Regional Development Programme 2014-2020 (PSR). Consistent with PSR, the priority of the project is the transfer of knowledge and innovation in agriculture, fostering the development of rural areas.

AppAGO started in July 2016 and will end in September 2018 involving the DISPAA of the University of Florence, the Private Research Institute “FCS”, an olive oil mill and 4 olive farms. The project is carried out in Val d’Orcia, a hilly area located in the south inland of Tuscany (Central Italy) where olive (*Olea europaea* L.) is historically cultivated on the slopes and hilltops with traditional techniques, representing one of the most important socio-economic crop of the area.

The main activities of AppAGO were to study the population dynamic of the olive fly (*Bactrocera oleae* Rossi) and to introduce innovative precision farming techniques to control its rapid growth and spread. Air temperature and rainfall were monitored in order to characterize the olive orchards microclimate assessing its relation with olive phenological stages. Soil tillage techniques were evaluated to hinder the dormant overwintering individuals and cover crop species were seeded to host the natural antagonist of olive fly. Updating seminars on monitoring and control techniques of this pest were presented to the farmers, introducing also foliar fertilization, spinosad and copper and/or kaolin treatments. Furthermore, based on the relationship between the olive fly development and olive temperature, field measurements of the parameter inside the fruits were carried out, in order to define upper temperature thresholds which cause high mortality to eggs and young larvae of the species. Improvements of the knowledge on this topic is mandatory in order to reduce chemical input as well as to strengthen simulation models for the olive fly in area wide olive system.