Short description

This novel tool to control the Mediterranean fruit fly (medfly), developed by the FF-IPM project, consists of soil applications of the commercially available mycoinsecticide Botanigard® WP22. It is based on a strain of *Beauveria bassiana* an entomopathogenic fungus (EPF), targeting the soil-dwelling life phase of *Ceratitis capitata.*

The FF-IPM project demonstrates that using high doses (107 conidia/g) of this EPF there is a long-lasting effect of soil treatment on *C. capitata* emergence. The fungus is able to maintain itself in the soils of apple orchards tested in Italy, being pathogenic and able to reduce significantly emergence for at least one year. Laboratory experiments demonstrated on one hand that Botanigard WP22 soil treatment can provide an On-Season control of *C. capitata* as it significantly reduced emergence and increased mortality of emerged adults of *C. capitata* whatever the dose (105, 106 and 107 conidia/g of soil) and temperature (10, 15, 20, 25°C) tested. *Ceratitis capitata* mortality was positively correlated with the dose of Botanigard® WP22. On the other hand, it demonstrated that it also provides an OFF-Season control of *C. capitata* as mortality was negatively correlated with the temperature. At low temperature, the fungus remained active while the insect developed slowly or did not. So, this biocontrol strategy could be particularly adapted to target the first and the latest generations of *C. capitata* produced in the field (in spring, and/or in autumn).