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Risk and management of the Mediterranean fruit fly

Ceratitis capitata (Wiedemann), also known as the Mediterranean fruit fly, is one of the world's most destructive plant pests. It feeds on more than 300 different fruit crops, mainly temperate and subtropical fruit species, such as peaches and nectarines but also citrus, apples and pears. Some years ago, *C. capitata* was introduced into Europe and easily established in the Mediterranean basin. More surprisingly, it is also colonizing Central European countries, far outside the range of expected favorable environmental conditions.



The Euphresco project 2017-A-236 ‘*Ceratitis capitata*: better knowledge for better risk management (FruitFlyRiskManage)’ aims to contribute to a better understanding of Medfly European populations and their movement. Information gathered on invasion/dissemination patterns under the different European climatic conditions were used to help to predict the further movement of the pest and will strengthen preventive and control strategies.

Medflies populations from mainland Portugal and two Azorean Islands, mainland Spain and Tenerife, mainland France and Corsica, Austria, Poland, Romania, Montenegro, Turkey and Brazil were collected in order to study their genetic diversity. Sampling was performed in different years (2017-2019) and at different locations, whenever possible. Medflies from Germany were previously genotyped and the data was included in the project analysis. To understand the genetic diversity and structure within and between populations, Simple Sequence Repeats (SSR) markers were used because they offer the potential to detect multiple alleles (highly polymorphic) and are uniformly distributed in the genome. Therefore, they are very informative compared to other markers, such as single nucleotide polymorphisms (SNPs). Analysis of the results is in progress.

