Ceratitis capitata is a highly polyphagous insect that attacks all types of fruit. The larvae live inside the fruit and prefer those that have the most sweet and fleshy pulp such as the peach, but they also damage figs, apricots, oranges, mandarins, persimmons, grapes, pears, pomegranates, mangos, custard apples, papayas, loquats, plums, quinces, etc.

It can produce several generations every year, depending on the climate of the area. During the cold season, they live on the ground in pupal stage. In areas with a mild climate, it can produce up to 7 or 8 generations.

### BIOLOGY

According to Gómez-Clemente, it can have the following cycle in the Mediterranean regions:

In winter, the first generation of female adults appears and attacks oranges and clementines, looking for the sunniest branches. The mature fruits are more vulnerable. All citrus fruits are exposed to its attacks, but the thickness and the texture of the peel as well as the density of the essential oils glands play an important role in their immunity, as is the case with the lemon.

They fly over the fruits looking for the right place. They select the fruit to lay their eggs depending on its colour and scent (they prefer yellow and orange).

They lay their eggs in groups of 5 to 10. Each female lays between 300 and 400 eggs. Entering inside the fruit, the larvae feed on the pulp. The rotten fruits fall to the ground and the larvae emerges from them by pupating underground at a depth of 5-10 cm. In spring, a second generation appears and affects the apricots. At the beginning of summer, there is a third generation that affects the peaches. In August and September, a fourth and fifth generation affects peaches, pears, figs, persimmons and grapes. Ceratitis capitata also begins to bite oranges and mandarins that are still green.

Later on, there is a sixth generation that attacks late fruits, such as oranges and mandarins. If the temperature is mild, there could be other generations. Activity is reduced in winter but when the temperature rises above 14°C, the flies become active again.
**NECESSARY MATERIAL**

We can use the following traps: **INVAGINATED EOSTRAP**, **INVAGINATED EOSTRAP® ORANGE LID**, **ECONEX MOSQUERO**, **ECONEX BOTTLE TRAP**, **ECONEX WHITE TRIANGULAR without sheets**, **ECONEX YELLOW TRIANGULAR without sheets**, **ECONEX DISPOSABLE WHITE TRIANGULAR**, **ECONEX DISPOSABLE WHITE TRIANGULAR MINI**, **ECONEX JACKSON TRAP** or **ECONEX YELLOW CHROMATIC 40 X 25 CM**.

The **INVAGINATED EOSTRAP** and **ECONEX MOSQUERO** traps are more appropriate than the **ECONEX TRIANGULAR** and **ECONEX JACKSON** traps for mass trapping. In the **INVAGINATED EOSTRAP** and **ECONEX MOSQUERO** traps it is recommended to use a **SNAILNEX** or place a substance capable of killing or retaining the captured insects inside the traps, for example olive oil.

**DETECTION AND MONITORING**

Place 1 to 2 traps per hectare on the south side of the trees at a height of 1.5 to 2 metres, for the detection and monitoring of the Mediterranean fruit fly populations.

The traps should be placed approximately between 1 and 3 months before harvesting the crops.

**MASS TRAPPING**

Males of this species are captured in order to reduce mating, meaning that the unfertilised females will lay unviable eggs. In this way, the pest population is reduced.

For this purpose, the amount of traps per surface area must be increased, according to location and uniformity of the plots. A trap controls a surface area between 500 and 1,000 m². This means a density of 10 to 20 traps per hectare placed on the south side of the trees at a height of 1.5 to 2 metres.

On the borders of the plots, it will be necessary to place a barrier of traps separated 10 to 15 metres apart from each other.

**PERIOD OF USE**

To obtain a good level of control of the Mediterranean fruit fly it is advisable to combine two methods: detection and monitoring; and mass trapping.

In spring, 1 to 2 traps per hectare can be placed for the detection of the pest and observation of its population levels. Through tolerance thresholds established in each area, the moment to adopt control measures is later defined, in this case mass trapping.

The tolerance threshold for *Ceratitis capitata* is very low and varies according to the area and type of traps used. In general, captures per trap and per day are between 0.5 and 3.

**STORING THE DIFFUSERS**

The **ECONEX JACKSON TRAP** includes an adhesive sheet impregnated with a pressure-sensitive adhesive, without solvents, in which the insects are trapped.

The **ECONEX YELLOW TRIANGULAR without sheets** trap is specifically designed to increase the effect of the pheromone diffuser by its chromatic attraction. The colours used in the design of the trap with its chromatic attraction (visual) reinforce the use of the pheromone diffuser, creating a highly attractive environment for the *Ceratitis capitata*.

The **ECONEX YELLOW CHROMATIC 40 X 25 CM** is an adhesive trap. It is a yellow polythene sheet of 1000 cm² (40 x 25 cm), resistant to sunlight, and with a 2x2 cm black grid on both sides. The sheet is covered on both sides with a pressure-sensitive adhesive, without solvents, which is protected by translucent silicone paper. There is a 1 cm margin on the longer sides of the sheet that does not contain the adhesive to facilitate its handling. It has a hole in each corner to make its installation easier.

The **ECONEX BOTTLE TRAP** is a bottle-shaped disposable trap with a capacity of 1 litre and made of PET. It has 4 diagonal holes with yellow polypropylene inserts that are a truncated cone shape. These inserts make it easier for the target insects to enter the trap both by chromotropic attraction as well as its funnel shape, also preventing them from escaping. It is a versatile and economical trap, optimised for its use in attraction and capture, by filling it with the appropriate attractant (not included) for the Mediterranean fruit fly (*Ceratitis capitata*).

The traps **ECONEX WHITE TRIANGULAR without sheets**, **ECONEX YELLOW TRIANGULAR without sheets**, **ECONEX DISPOSABLE WHITE TRIANGULAR**, **ECONEX DISPOSABLE WHITE TRIANGULAR MINI**, **ECONEX JACKSON TRAP** and **ECONEX YELLOW CHROMATIC 40 X 25 CM** stand out because of their simplicity of use. They still working until the pheromone runs out or the adhesive sheet is saturated with captured insects. They are less recommended in areas with lots of dust in the air.