

Tecia solanivora has caused extensive damages to potato crops in the North of Tenerife and recently in Gran Canaria and La Palma. Its importance is based as much on the damage it causes to potatoes in fields, as well as the damage later produced in warehouses, where the conditions are ideal for its fast reproduction.

It is native to Guatemala, where it was described for the first time. Since then, it has spread throughout Central America (Costa Rica, Panama, Honduras, Nicaragua, El Salvador) and later to South America. Venezuela, Colombia and Ecuador are the only countries to have suffered from potato crop damage. In The Canary Islands it was detected in 1999, sp

BIOLOGY

This species only grows over *Solanum tuberosum* potatoes. As with all moths, they are nocturnal and begin their cycle by laying their eggs above the potatoes or near them. They lay between 200 to 500 eggs. The fertility of the eggs reaches 95% and the incubation period can last between 5 and 15 days, depending on the temperature.

Once hatching has taken place, the larva, which measures 1.5 mm and is a creamy white colour, enters inside the potato where it grows. It is responsible for the damage of the potato that is characterised by loss of weight and quality. At the end of the larval phase, which lasts between 15 and 29 days, the larva abandons the potato measuring 16 mm and a greenish colour to later turn a pinkish colour.

Once outside the potato, the larva stops feeding on it and creates a cocoon of silk together with bits of different materials. The chrysalis (pupa) remains inside it. This phase can occur in the ground, sacks, fissures and cracks on the floors and walls. It can also pupate inside the potato. At the beginning, the chrysalis (pupa) is light brown but when the adult emerges, it turns a darker colour. This phase lasts between 10 and 20 days.

Duration of the stages depending on the temperature			
Stage	Duration at 15°C (days)	Duration at 20°C (days)	Duration at 25°C (days)
Egg	15	7	5
Larva	29	17	15
Chrysalis (pupa)	31	14	12
Adult	20	18	10
Total no. of days	95	56	42

According to the previous table, the moth can finish its biological cycle between 42 and 95 days, depending on the temperature.

Important facts of its biology:

- In high temperatures, there are more generations but a higher percentage of mortality.
- The minimum temperature for its growth is from 7 to 9°C.
- Temperatures below 10°C and rain are a limiting factor for its growth.

SOURCE: *Consejería de Agricultura, Ganadería, Pesca y Alimentación de la Comunidad Autónoma de Canarias.*

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ECONEX TECIA SOLANIVORA 2 MG 60 DAYS



SOLUTIONS OVERVIEW

CODE	TRADE NAME	IMAGE
VA182	ECONEX TECIA SOLANIVORA 2 MG 60 DAYS Pheromone diffuser with a duration of 60 days.	
TA001	ECONEX POLILLERO	
TA027	ECONEX GREEN POLILLERO	
TA042	EOSTRAP®	
TA273	ECONEX FOLDING WHITE TRIANGULAR WITHOUT SHEETS	
TA248	ECONEX SHEET FOR TRIANGULAR	
TA242	ECONEX DISPOSABLE WHITE TRIANGULAR	
TA240	ECONEX DISPOSABLE WHITE TRIANGULAR MINI	
TA051	ECONEX TRAP SUPPORT	

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ECONEX TECIA SOLANIVORA 2 MG 60 DAYS

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Guatemalan potato moth

BIOCONTROL



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35
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Anniversary

DESCRIPTION

CODE	TRADE NAME
VA182	ECONEX TECIA SOLANIVORA 2 MG 60 DAYS Sexual attractant for males of the Guatemalan potato moth <i>Tecia solanivora</i> , with a duration of 60 days in normal field conditions. OMDF register number: 034/2017

Natural rubber diffuser with capsule shape, individually packed in an aluminum sachet with labelled specifications.

Once removed from the packaging, the diffuser needs no activation or opening, just placed correctly in the trap



ECONEX TECIA SOLANIVORA 2 MG 60 DAYS. Packaging and pheromone diffuser.

NECESSARY MATERIAL

A trap **ECONEX POLILLERO**, **ECONEX GREEN POLILLERO**, **EOSTRAP®**, **ECONEX FOLDING WHITE TRIANGULAR WITHOUT SHEETS**, **ECONEX DISPOSABLE WHITE TRIANGULAR** or **ECONEX DISPOSABLE WHITE TRIANGULAR MINI** and a pheromone diffuser **ECONEX TECIA SOLANIVORA 2 MG 60 DAYS**.



ECONEX POLILLERO



ECONEX GREEN POLILLERO



EOSTRAP®



ECONEX FOLDING WHITE TRIANGULAR WITHOUT SHEETS



ECONEX DISPOSABLE WHITE TRIANGULAR MINI

ECONEX DISPOSABLE WHITE TRIANGULAR

The trap **ECONEX FOLDING WHITE TRIANGULAR WITHOUT SHEETS** is activated by placing an **ECONEX SHEET FOR TRIANGULAR** at the base of it. The sheet is impregnated with a pressure sensitive adhesive, solvent free, in which insects are trapped. The traps **ECONEX DISPOSABLE WHITE TRIANGULAR** and **ECONEX DISPOSABLE WHITE TRIANGULAR MINI** are coated on its inner face with a layer of contact adhesive, solvent free, for the retention of the insects.

Both traps will be operative until pheromone depletion or saturation of the sheet or adhesive surface. The pheromone diffuser is placed inside the trap on the sheet or adhesive surface.



PERIOD OF USE

To obtain a good level of control of *Tecia solanivora*, it is advisable to combine two methods: detection and monitoring, and mass trapping.

1 or 2 traps per hectare should be placed 60 days before harvesting to detect the pest and observe its population levels. With tolerance thresholds established in each area, the moment to adopt control measures, in this case mass trapping, can later be defined.

The tolerance threshold for *Tecia solanivora* is very low and depends on the area. In general, it is approximately 21 captures per trap and per week. For mass trapping, traps should be placed throughout the plots.

DETECTION AND MONITORING

1 to 2 traps per hectare should be placed at the same height as the crops or on an **ECONEX TRAP SUPPORT**.

The traps should be placed as soon as *Tecia solanivora* populations increase during the crop cycle. This usually happens during the process of tuberisation, so it is recommended to place the traps when the flowers bloom until harvest time.

The traps should be placed approximately 30 to 60 cm high from the ground and the maximum height will be determined by the growth of the plants (if the traps are placed lower than usual, once the crops have grown, it will be difficult to find them).

The traps should be placed on the ground paying attention to the plot's borders, where the populations increase much faster. In addition, if the traps are placed inside the plots, it makes access to them very difficult due to the high density of the potato crops.



MASS TRAPPING

A) POTATO CROPS IN FIELDS:

The males of *Tecia solanivora* are specifically captured in order to reduce the mating, meaning that the unfertilised females will lay unviable eggs. This greatly reduces the population of the pest.

For mass trapping, the amount of traps per surface area must be increased, depending on the location or homogeneity of the plots. One trap controls a surface area between 500 and 1.000 m². This means a density of **10 to 20 traps per hectare**.

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

B) STORED POTATOS IN WAREHOUSES

For an effective use of the traps, it is necessary to have knowledge of the biology of the insect.

The traps should be placed where there is more possibility of finding the Guatemalan potato moth, as well as in specific phases of the food production process where a fast detection of the insects' presence is important. In warehouses with a smaller quantity of stored produce, it is also convenient to place traps. In places where the activity is important, the traps should be monitored weekly to observe the amount of captured insects. In other areas, every 15 days.

In warehouses, the density of traps is a minimum of 3 traps and a maximum of 9 traps per 1000 square metres. Enclosures near to the infected area should have traps as well as the corridors that are connected to this area. If the corridors come from the infected area, they should have 2 traps (one in front of the other).



FACTORS THAT INFLUENCE THE NUMBER OF TRAPS NEEDED

Pest population, bordering crops, level of control required, etc. An important factor is crop size. In small and irregular sized crops a greater number of traps will be needed.

Another important factor is the distance between plots that have the same pest. In such cases the crop boundaries should be reinforced, so a trap density of about 20 traps per hectare may be needed. More traps may be needed in the case of mass trapping.



STORING THE DIFFUSERS

The diffusers must be kept in its original packaging without opening it in a refrigerator at 4 °C, or in the freezer at -18 °C, in which case they will remain valid for 2 and 4 years respectively.