

The box tree moth *Cydalima perspectalis* is a lepidoptera which belongs to the Crambidae family. It originates from East Asia but it has been also found throughout Europe as invasive exotic species since 2006. It feeds on box trees leaves and causes severe defoliation.

MORPHOLOGY AND BIOLOGY

The adult moths have a wingspan of about 4 cm. The body is largely white with a brown head and lower abdomen. The adults have a thick dark brown border around the edges of white-coloured wings. Also, the wings have a characteristic white spot.

The female lays clusters of 10 up to 30 eggs on the underside of the leaves of the box tree where they are surrounded by a translucent gelatinous mass. The egg is round shape and measuring approximately 0.8-1 mm diameter. At the beginning it is pale yellow but as it matures, the egg develops a black spot where each larval head capsule is forming.



© Ben Sale

The neonate larvae measure between 1 and 2 mm long up to 35-44 mm when they are completely developed. The larvae (caterpillars) are characterized by an entirely velvety light green body and a black head. Also, they develop a striking pattern of thick black and thin white stripes along the length of the body, with large black dots outlined in white on the dorsal side. The larvae of *Cydalima perspectalis* feed on mature leaves of box tree species (*Buxus* spp.). Total defoliation of these trees happens when *Cydalima perspectalis* caterpillar reaches a large number of population.



It overwinters as caterpillar, hidden between box leaves that have been spun together with silk in late autumn, and completes its development in spring. In this season, it develops as pupa which measures between 25-30 mm long. After the pupal phase, whose duration varies between 10 and 14 days, the adult moth emerges from the chrysalis. The flight of the adult *Cydalima Perspectalis* for mating is at night and it normally happens in late May-early June. The adult has a positive phototropism, its movement is towards the source of light.

The number of generations per year can vary from 1 to 4, mainly depending on climate.

Source: Gobierno de Navarra. Servicio de Conservación de la Biodiversidad, Sección de Gestión Forestal.

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ECONEX CYDALIMA PERSPECTALIS

SOLUTIONS OVERVIEW



CODE	TRADE NAME	IMAGE
VA348	ECONEX CYDALIMA PERSPECTALIS 2 MG 60 DAYS Pheromone diffuser with a duration of 60 days.	
VA373	ECONEX CYDALIMA PERSPECTALIS 3 MG 200 DAYS Pheromone diffuser with a duration of 200 days.	
TA001	ECONEX POLILLERO	
TA273	ECONEX FOLDING WHITE TRIANGULAR WITHOUT SHEETS	
TA248	ECONEX SHEET FOR TRIANGULAR	
TA242	ECONEX DISPOSABLE WHITE TRIANGULAR	

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Box tree moth

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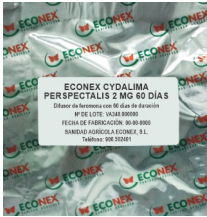
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Anniversary
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DESCRIPTION

CODE	TRADE NAME
VA348	ECONEX CYDALIMA PERSPECTALIS 2 MG 60 DAYS
VA373	ECONEX CYDALIMA PERSPECTALIS 3 MG 200 DAYS
Sexual pheromone diffuser of the species <i>Cydalima perspectalis</i> to attract males, with a duration of 60 and 200 days respectively.	

The diffuser is a closed polyethylene tube that is individually packaged in an aluminium sachet with labelled specifications.

Once removed from the packaging, the diffuser needs no activation or opening, just place it properly in the trap.



ECONEX CYDALIMA PERSPECTALIS 2 MG 60 DAYS.
Packaging and pheromone diffuser

NECESSARY MATERIAL

A trap **ECONEX POLILLERO**, **ECONEX FOLDING WHITE TRIANGULAR WITHOUT SHEETS**, or **ECONEX DISPOSABLE WHITE TRIANGULAR** and a pheromone diffuser **ECONEX CYDALIMA PERSPECTALIS**.



ECONEX POLILLERO



ECONEX FOLDING WHITE TRIANGULAR WITHOUT SHEETS



ECONEX DISPOSABLE WHITE TRIANGULAR

The trap **ECONEX FOLDING WHITE TRIANGULAR WITHOUT SHEETS** is activated by placing an **ECONEX SHEET FOR TRIANGULAR** on its base. The sheet is impregnated with a pressure-sensitive adhesive, without solvents, in which the insects are trapped. This trap also includes a special hanger. The trap **ECONEX DISPOSABLE WHITE TRIANGULAR** is coated on its inner face with a layer of contact adhesive, solvent free, for the retention of the insects.

Both traps stand out above all for their simplicity of use, and will be operative until pheromone depletion or saturation of the sheet or adhesive surface. The ECONEX CYDALIMA PERSPECTALIS pheromone diffuser is placed inside the trap on the sheet or adhesive surface.

DETECTION AND MONITORING

1 to 3 traps per hectare should be placed at the same height as the crops, in the box trees or on specific supports. The traps should be placed in late May-early June.

MASS TRAPPING

The males of this species are specifically captured in order to reduce mating. In this way, the pest population is reduced.

For mass trapping, the amount of traps per surface area must be increased, depending on the location and uniformity of the plots. One trap controls a surface area between 500 and 1.000 m². This means a density of at least **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.

DAMAGES

Cydalima perspectalis is related to plants of the *Buxus* genus (*Buxus sempervirens*, *Buxus microphylla*, *Buxus sinica*, *Buxus colchicum*).



Caterpillar feeding on a box tree

The feeding damage produced by the larva on the leaf edges is one of the most visible symptoms. This causes severe defoliation of the box trees which reduce the performance of their photosynthesis process (among other consequences).

However, when larvae attack the bark of the box trees, causing them to dry out and die is the most serious damage.



The first generation of *Cydalima perspectalis* causes less damage to box trees than the second and later generations, in which this most serious damage can happen.

Source: Gobierno de Navarra. Servicio de Conservación de la Biodiversidad Sección de Gestión Forestal.

PERIOD OF USE

To obtain good control of the *Cydalima perspectalis* moth, it is advisable to combine two methods: detection and monitoring; and mass trapping. In late May-early June, 1 to 3 traps per hectare should be placed for the detection of the pest and observation of 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 *Cydalima perspectalis* is very low and varies depending on the area. In general, it is approximately 3 captures per trap and per week.

For mass trapping, traps should be placed throughout the plot.



FACTORS THAT INFLUENCE THE NUMBER OF TRAPS NEEDED

Pest population, bordering crops, level of control required, etc.

One important factor is the size of the crop. In small and irregular crops, a greater number of traps are required than in larger and more uniform plots.

Another important factor is the distance between plots that have the same pest. In cases like this, the borders of the plots must be reinforced, so it could be necessary to place up to 20 traps per hectare or even more for mass trapping.

STORING THE DIFFUSERS

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