Rhynchoprotect

Red palm weevil *Rhynchophorus ferrugineus*

The red palm weevil, *Rhynchophorus ferrugineus* Olivier (Coleoptera: Curculionidae), comes originally from the South and South-East Asia. It has spread widely in various areas becoming one of the most severe pests of palm trees in the Mediterranean region and Middle East. Most of the species attacked by this insect belongs to the genus *Phoenix*, specifically *P. dactylifera* and *P. canariensis,* but also other ornamental palm trees are susceptible to be damaged.



Rhynchophorus ferrugineus
Coleoptera: Curculionidae

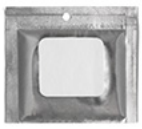
Adult females lay about 300 eggs in the base of young leaves or in wounds of leaves and trunks. Larvae feed on the soft fibers and shoot tissues. They subsequently move into the palm tree making tunnels and big cavities in any part of the tree. After 1-3 months the larva spins a cocoon with dry palm fibers and pupates. Larvae can remain in this stage from two to four weeks before the emergence of adults. The biological cycle of *R. ferrugineus* lasts between 3 to 4 months (normally 3 generations per year) Adults stay in the palm tree while they can feed. Once the palm shows serious damage, adults fly away to colonize other palm trees, preferably those with any accidental or pruning wound. Usually, damage caused by larvae takes a long time to be visible. When the first syntoms are observed, damage is so important that in most cases it involves the death of the palm tree.





CONTROL MANAGEMENT

The control of this species must be carried out by the combination of different strategies, since the utilization of just one method is not efficient enough to manage it. Among all these strategies the evaluation of the palm trees is of vital importance in order to detect the first evident symptoms. Also cultural methods, like the pruning of palm trees when the insect is less active (December-February) and also the chemical treatment of the wounds. The use of pheromones and finally authorized chemical products can be applied. If the palm tree is already infested by the red palm weevil, according to the degree of infestation, it could be appropriate the sanitation of the affected parts or in cases where the attacks are severe, the elimination of the palm tree. Within the control methods mentioned above, the use of pheromones supposes a continuous capture and elimination of adults.





FORMULATION

Dispensers

The product RHYNCHOPROTECT comprises a vapor pheromone dispenser. The active substance used in the product is a mixture consisting of 4-methyl-5-nonanol and 4-methyl-5-nonanone. This mixture is described as the aggregation pheromone of the red palm weevil, attracting both sexes of this species. Likewise, this dispenser can go with another product, RHYNCHOPROTECT PLUS, composed of the kairomone, ethyl acetate, which is considered to be a synergist. The efficacy time of the dispenser depends on the environment conditions, especially temperature, ventilation and ambient humidity. In normal weather conditions the field life of the dispenser is 90 days depending on temperature.



APPLICATION





- Each dispenser is put inside a PICUSAN trap held through two lateral holes with a zip-tie. The base of the trap is filled with water in order to kill the insects that enter inside. It is also possible to add an insecticide in the base of the trap, with no necessity to pour water into the device.
- Traps should be placed on the ground in shady areas and separated from the palm trees at least 50 m. In case of private palms, then traps can be placed at a shorter distance (20 m minimum).
- For monitoring, one trap per hectare should be placed in small areas or one every three hectares in large and homogeneous areas.
- Evaluation of the traps should be carried out every 7-15 days to control the number of adults captured.
- Monitoring traps should remain throughout the year.
- Once the pest is detected in a plot, then four traps per hectare should be placed, separated 50 m between them. The number of devices can be increased in those areas with most captures. Furthermore, within a 1000 m radius from the place where the insect has been detected, it is advisable to monitor the pest in those areas with palm trees. In these cases traps should be away from the palm trees to avoid, in case they are not attacked, a weevil infestation.
- All palm trees found within a 50 m radius from the traps, should be protected with regular chemical sprayings in order to avoid the risk of incoming attracted females.
- Positioning of more than 1 trap/ha should be mostly performed from Spring to Autumn.

HANDLING AND STORAGE

The dispenser RHYNCHOPROTECT is supplied in packs with the convenient number of units. It is recommended to keep the product in its original packaging unopened. RHYNCHOPROTECT should be kept in the freezer and RHYNCHOPROTECT PLUS (Kairomone), in case it is utilized, in the refrigerator until ready to use. Under these conditions the product RHYNCHOPROTECT can be stored for a period of two years and RHYNCHOPROTECT PLUS one year. Avoid cutting or perforating the dispensers. The product is a dispenser located inside a trap and emits to the air vapors of the active substance at a low and controlled rate. Therefore, water and soil pollution risks are discarded. The dispensers used and their packing have to be managed according to current legislation for residues disposal.

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