



- Paying extra attention to various agricultural procedures such as irrigation and balanced fertilization, in order to strengthen the palm trees.

2. Mechanical Control:

- Using light traps, as the insects are attracted to light at night. The traps are used to hunt and collect insects during their activity season and then to eliminate them.



3. Biological Control:

- Using the entomopathogenic nematodes, which effectively attacks the larvae of the *Oryctes spp.*

4. Chemical Control:

- Using granular pesticides, which are mixed with the soil, in order to get rid of the larvae of the pest that reside on the roots within the soil.
- Directing the spraying towards concentrating on the adult insect on the racemes, vegetative part, and palm crown, since the adult insect (beetle) always exists in these parts.

The following condition should be met when conducting the control process:

1. Using highly efficient sprayers.
2. Using protective clothes during the control process.
3. Weather conditions should be appropriate for spraying.
4. Safe disposal of empty pesticides containers by collecting and delivering them to competent authorities.

Dear farmer,

Contact an agricultural expert as soon as possible to help you learn the appropriate control methods, materials, and techniques, to make sure you get the desired results.

Date Palm trees are a national treasure, let's maintain them

Date Palm Fruit Stalk Borer

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Date Palm Fruit Stalk Borer

Introduction:

Oryctes spp. is one of the major pests that causes severe damage to date palms, as well as the coconut trees and many other palmaceae trees. This beetle is spreading in all palm trees cultivation sites in the UAE and Gulf Cooperation Council states.



Adult *Oryctes spp.* (Beetle)

Life Cycle:

The adult insect is a nocturnal active, large - 35 mm - beetle; its color is dark brown or glossy black. It burrows the base of the fronds, excavating deep galleries that make the fronds break, dry, and dead. It also attacks the heart of the palm and the base of the racemes, causing the death of the palm's crown and the death of the palm itself, reducing the size of the fruits, forcing the marketing value of the fruits to decline, or making the full frond dry. *Oryctes spp.* has one generation each year. The adult beetle emerges in palm trees plantations in the beginning of March and April. It remains active until the end of September.

The females lay eggs inside the infected tunnels. In the absence of these tunnels, they often lay eggs in organic materials, especially organic fertilizers, during autumn and winter, or in the heart of the palm.

The summit activity of the females is in the months of April and May, when they are mating and laying eggs.

The eggs hatch in a week, producing white larvae locally known as Al-Aqur. The length of the larvae is approximately 70 mm. They are known for their circular shape and have strong pectoral legs and strong jaws. They attack the base of the palm, making deep galleries. The larvae go through four molting during their life cycle that takes 9-12 months, turning eventually into a pupa in the upcoming spring. After 3-4 weeks, the adult insect emerges to restart the life cycle.

Symptoms of Infestation:

The beetles emerge at the end of winter. The adult insect causes direct damage to the palm trees, as it excavates superficial tunnels on the racemes, base of the fronds, and pollen, where they excavate deep tunnels within the base of the fronds, causing them to break and hang down on one side of the stem, eventually damaging the raceme and the fruits it is bearing. The tunnels made in the pollen are then contaminated with fungi, which cause the rotting of the leaflets within the pollen shell. The larvae are the most damaging - especially under the surface of the soil - to the root and base of the palm trees, as they cause dismantling the tissues, turn their color into black, and make them decay, eventually leading to the death of the palm tree. The larvae are voracious; thus, if they do not find a host date palm tree, they will attack the root of other hosts.



Adult *Oryctes spp.* (Beetle)



Larva locally known as Al-Aqur.



Larva locally known as Al-Aqur inside decaying bio substances.



A young palm tree infected with date palm fruit stalk borer. The blackness and decay of tissues are visible.

Protection and Control Methods:

The integrated control system of the *Oryctes spp.* includes many measures and techniques, the most important of which are:

1. Agricultural Control:

To reduce the chances of infection by this pest and limit its spread, the following measures should be taken:

- Keeping the farms clean by disposal of weak and near dead palm trees, as they provide appropriate environment for *Oryctes spp.* to lay eggs;
- Disposing of decaying plant waste, piles of bio fertilizers, and animals waste and not leaving them on the farm.