

Treatment Protocol for Red Palm Weevil

Ramat Hanadiv – June 2021

Coordinated and written by Lior Hershkovitz

Monitoring and trapping:

Twenty Picusan traps, marketed by Bio-Bee, have been installed throughout the Memorial Gardens and Visitors Pavilion. Once a month, a gardener checks all the traps and performs a count of the beetles caught in the traps as well as any necessary maintenance. The gardener must report any damage to the traps. The information is recorded in Ramat Hanadiv's management dashboard.

Ongoing maintenance of the traps includes the following actions:

1. Replacement of pheromone volatisers as required (during the summer months the volatisers are replaced monthly, while during the winter months they empty at a slower rate)
2. Adding water to the bowl located under the trap
3. Filling the hanging bottle with ethyl acetate + ethanol at a ratio of 1:3



In the photo: A Picusan trap

Pruning the palms:

The palms are pruned during January–February, when the beetle's activity is minimal. The reason for this is that the cuts resulting from the pruning release volatile substances that attract the adult beetles.

Control and prevention:

I. Canopy soaking:

Once in three months the centre of the palm crown is soaked with insecticides. This action is performed using a 120-litre sprayer with an electric pump including a flow meter and a telescopic rod that reaches up to the tree's crown. The treated palms are Canary Island date palms (*Phoenix canariensis*) and the crooked date palm (*Phoenix dactylifera*) on the lawn.

II. Insecticides and dosage:

Confidor/Kohinor – 20 ml per tree (neonicotinoids)

Karate Maxx/Cymbush – 30 ml per tree (synthetic pyrethroids)

The insecticides are diluted in 15 litres of water per tree. Therefore, when using a 120-litre sprayer which contains an amount sufficient for 8 trees, the required quantities of insecticide are 160 ml Confidor and 240 ml Karate Maxx.

Procedure:

Treatment will be performed wearing the required protective equipment (spraying suit, gloves, mask and protective glasses)

Treatment will be performed by two people during the early morning. One person applies the insecticide to the centre of the palm crown using the rod. The second person watches the flow meter and stops treatment at 15 litres.

Treatment will be stopped as required (e.g. presence of people, wildlife, etc.)

Before working with the sprayer:

1. Check the battery is full (12V battery)
2. Check the intactness of the pipework connections
3. Check that the drain tap is closed
4. Check the intactness of all parts of the telescopic rod

After completion of work:

1. Discard used protective equipment in the designated bins
2. Wash your hands well with soapy water
3. Wash the spray container by opening the drain tap at its base
4. Disconnect the negative battery pole to prevent voltage leakage and battery drain



In the photo: A Diklon device installed on the trunk of a palm tree. The device is used to inject the trunk with an insecticide called Actara.



III. Trunk injection using a Diklon

The operation is performed once every two months

Diklon – a device attached to the palm trunk that serves as an opening for injecting systemic insecticides.

The treated palms:

Canary Island date palm – *Phoenix canariensis* – 3 Diklon devices around its circumference

Date palm – *Phoenix dactylifera* – 2 Diklon devices around its circumference

Insecticide and dosage:

Actara (neonicotinoid)

Preparation of a 30% Actara solution

Application:

The insecticide is applied using a syringe attached to a feeding tube.

1. Open the Diklon stopper using an Allen key / designated key
2. Fill the syringe with the solution
3. Insert the feeding tube to the end of the Diklon and begin injecting gently
4. Gradually pull the feeding tube out and continue injecting until the Diklon is full
5. Close and lock the Diklon stopper
6. If the Diklon is blocked, clean it with a designated metal pipe brush

Before work:

1. Prepare the required equipment, including the insecticide solution
2. Put on gloves and protective glasses

After work:

1. Discard used protective equipment in the designated bins
2. Wash your hands well in soapy water
3. Wash the syringe and the feeding tube