



RHYFER - Red Palm Weevil Lure

A New and Highly Efficient Alternative to
Conventional Control of the Red Palm Weevil

90% 4-methyl-5-nonanol
10% 4-methyl-5-nonanone

The discovery of the male-produced aggregation pheromone [4-methyl-5-nonanol and 4-methyl-5-nonanone] for the red palm weevil (RPW), *Rhynchophorus ferrugineus* Olivier, made the implementation of pheromone-based monitoring and trapping of this weevil possible for its management. *RHYFER*, an innovative new pheromone lure, is a highly efficient alternative to chemical control of the most dangerous insect pest on date palm in the Arab Gulf Countries. Alpha Scents designs, engineers, manufactures, registers, and sells semiochemical-based products that are the foundation of modern integrated pest management strategies

RHYFER: An Effective Lure

Several laboratory and field studies on monitoring and trapping of the RPW were conducted. Results reported from a 2-year study in the UAE ([Kaakeh et al. 2001](#)) indicated that *RHYFER* (an experimental pheromone No. 8) is an effective pheromone lure for reducing weevil population (high trap catch) and for protecting date palm trees from weevil infestations in the field.

RHYFER Formulation

The active ingredients of *RHYFER* are clear liquids with slight musty color. These very high purity pheromones are preloaded on an absorbent matrix (special paper) and enclosed in an inert, permeable plastic bag. *RHYFER* is packaged in a non-permeable plastic pouch.

RHYFER Longevity

Pheromone is released from the lure at a controlled rate over a period of time. Basically, the release rate of *RHYFER*, after reaching equilibrium (usually 48-72 hours), will remain constant throughout most of the life of the lure and will diminish over time. *RHYFER* is formulated using high quality plastic to assure a constant release rate. It is important to replace lures in the field at the following recommended intervals:

Load rate per lure	Period of pheromone release and replacement
200 mg	20 days
400 mg	39 days
700 mg	65 days

* Release rate: 10 mg/24 hr at constant 24°C.



INSECT MONITORING SYSTEMS

Pheromone-Food Baited Trap

The standard pheromone-food baited trap used in most of the Arab Gulf countries consists of:

- a 10 liter plastic bucket covered from the outside by a rough cloth to allow the adult weevils to crawl up easily on the trap to reach the inside through the openings; the bucket has four 2.5 x 6 openings for the entrance of the attracted adults,
- soft date fruits placed at the lower part of the bucket as bait or food attractant,
- a non-repellent granular insecticide (1-2 g) placed on the top of the date fruit to kill adults upon arrival,
- a pheromone lure hung from underneath the bucket cover by a wire through the hole in the lure,
- about 0.5 liter of water to wet the insecticide-treated date fruits.

Note: Other types of traps can be used if found effective in trapping weevils.

Trap Maintenance

Inspecting traps weekly is sufficient to determine weevil population trends. Replace the insecticide-treated dry date fruits and add water as needed. Remove debris from the traps. Record and remove weevils from the plastic bucket after each visit for population studies. Graphing the recorded numbers gives a visual reference of flight peaks. By servicing the traps regularly, you will help maintain their efficiency.

Placement of Traps

For optimal weevil catch, place traps on the ground with the lower half of the trap inserted in the ground between date palm trees. Studies indicated that traps located at ground level captured significantly more weevils than those attached to tree trunks or attached to poles located near palm trees.

Trap density

One trap per hectare or one trap per 100 date palm trees is a common application to detect peak emergence periods and to estimate insect populations. For best results, and to locate the source of infestation, we recommend adding one more trap per farm (i.e., place 3 traps in a 200 tree farm, 4 traps in a 300 tree farm, and so on).

Care and Storage of RHYFER

Store lures in a cool, dark place until the plastic pouch is opened. It is recommended to store lures in a refrigerator or freezer. Never leave them in the trunk of a car or in areas where they may be exposed to unusually high temperatures.

Kaakeh, W., F. E-Ezaby, A. A. Khamis, and M. M. Aboul-Anour. 2001. Management of the red palm weevil, *Rhynchophorus ferrugineus* Olivier., by a pheromone/food-based trapping system. Proceedings of the Second International Conference on Date Palm (refereed), Al-Ain, UAE.