

CONTROL OF THE RED PALM WEEVIL

SOSPALM PROTOCOL: A VERY EFFECTIVE SYSTEM TO CONTROL THE RED PALM WEEVIL LEAVING NO PESTICIDE RESIDUES IN POLLEN OR DATES IN DATE PALM TREES.

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From among the different systems of application of pesticides by Endotherapy, the city of Alicante (Spain) adopted the SOSPALM system in 2010 to combat the red palm weevil in about 5000 palms in the municipal parks of the municipality.

To try to answer any questions presented by the SOSPALM system, several trials have been designed by the professorship since early 2011.

The first question was: Is SOSPALM an effective system? To answer this question, in early May 2011 Canariensis palms with a stem of less than one metre were used, in pots with drip irrigation and covered with nets, into which the same number of adults, male and female, were introduced.

The same insecticide was injected through SOSPALM pegs at monthly intervals.

The result was that six months later, all the treated palm were healthy while all the untreated examples were dead.

The second question was: Do all insecticides behave in the same way when applied with the SOSPALM system?

To answer this question, in June 2011 a trial was devised in which various palms previously fitted with the SOSPALM peg, covered with nets and with the same number of adult male and female red palm weevil introduced, were injected with ten different insecticides via SOSPALM pegs.

Six months later, all the palm trees treated with the most effective insecticides remained healthy while the palm trees treated with less effective products had died.

The third question was: What is the persistence of the effective insecticides under conditions of high pest pressure? In two trials similar to the above, the most effective insecticides were applied at a frequency of 15, 30, 45, 60 and 90 days. These trials also served to establish the curative effects of the tested insecticides.

Six months later, of the palms treated every 45 days one died and of the palms treated every 90 days, two died, while those injected every 15 to 30 days were healed.

In turn, various dilutents were tested, from which SOSPALM LIQUIDO was obtained, in order to improve the behavior of the pesticides.

This trial was repeated on a larger scale in April 2012 with Phoenix Canariensis palms of more than two metres in height.

The fourth question was: How does the palm tree react to the introduction of the SOSPALM peg? In 2011, seven months after the first trial, the palm trees where the SOSPALM pegs had been installed were opened and inspected, whereby it was verified that the surrounding tissue only showed slight damage caused by the drill bit when drilling the perforation whereas the rest of the tissue remained healthy.

Since 2012, whenever a palm tree in the



Effect and persistence trial.



Upward systemia in tall dactilyferas.



Effect of the peg.



Effect of the peg.

municipal gardens of Alicante that has been fitted with a SOSPALM peg falls due to a structural fault, the opportunity is taken to section and inspect the effect of the peg on the inside. Now, four years later, it can be proved that when the system is installed correctly no lesions appear inside the palm, with the peg remaining functional and able to continue with the treatments.

The fifth question was: Is the behavior of the insecticides applied by Endotherapy in date palms between 5 and 13 meters high similar?

Two trials of monthly applications were carried out beginning in August 2012. In this case, the trial were designed in a different way. Four months after the implementation of the SOSPALM protocol, samples of the apical meristem were collected and brought to the Regional Agricultural Laboratory of Valencia to test for pesticide residues.

It was found that the insecticides applied were present at the apical meristem. Similar tests were conducted in 2014 with the same results and repeated in 2015.

The sixth question was: Do SOSPALM pegs keep the same effectiveness with the passage of time? To this end, in June 2014, a trial was performed in Canariensis and dactilyferas palms between five and eleven meters high, in a park in Alicante, where the pegs had been installed

four years earlier and insecticides had been injected periodically. Only one insecticide was applied and samples were taken of the apical meristem to detect the presence of the pesticide.



Pesticide residues in dates.



Pesticide residues in pollen.

The samples were analyzed in the same laboratory and it was determined that the insecticide applied was present in the meristem, meaning that after four years the SOSPALM pegs maintain their effectiveness.

Two more trials were conducted in commercial fields of tall date palms, in the town of Elche, with SOSPALM pegs which had been installed two years earlier.

A third trial was made with Phoenix Canariensis palms with SOSPALM pegs which had been installed three years before and after more than a year without applying any product. In both trials the insecticide was found in the meristem.

Similar trials have been done in 2015.

The **seventh question** was: **Do pesticide residues appear in dates when implementing the SOSPALM protocol?** To this end, two trials were designed in commercial production fields of Metjoul and Confitera varieties of dates. Monthly applications of insecticide were made since June 2014.

The SOSPALM protocol was applied and when the dates were ready to harvest they were taken to the same laboratory for residue determination. It was found that there was no presence of insecticides in the dates analyzed.

This test was repeated in 2015.

The **eighth question** was: **Do pesticide residues appear in palms flowers when implementing the SOSPALM protocol?** In May 2015, applying the same protocol, flower samples were taken and brought to the same laboratory.

The result was that no pesticide residues were found in the pollen of flowers when applying the SOSPALM protocol.

It is planned that this trial be repeated in 2016.

Full details of the trials cited in this summary are posted on the website of the University Miguel Hernández: <http://palmeralelx.umh.es/trabajos-catedra-2/lucha-activa-contra-el-picudo-iii-tratamientos-con-endoterapia/>

For these reasons, THE SOSPALM PROTOCOL IS A VERY EFFECTIVE SYSTEM TO CONTROL RED PALM WEEVIL, LEAVING NO PESTICIDE RESIDUES IN POLLEN OR DATES IN DATE PALM TREES.