

## Effect of kaolin on infestation reduction of Mediterranean pine bark beetle, *Orthotomicus erosus* (Coleoptera: Curculionidae)

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The Mediterranean pine bark beetle, *Orthotomicus erosus* Wollaston (Coleoptera: Curculionidae), is one of the most important pest of pine trees, which cause direct harms to these trees, and also are vector of some virus and bacterial pathogens. Most pine trees in forest parks of Iran including Isfahan parks and Tehran's Chitgar Park died because of extensive infestation of this pest. There is limited information about the control methodologies for Mediterranean pine bark beetle. So, this research was established with the aim to find the most efficient method for control of Mediterranean pine bark beetle. One of the non-chemical methods is application of inorganic compounds with detergency and feeding inhibitory properties. Kaolin is a mineral and non-toxic compound to mammals and is suitable and safe for integrated pest management programs. To prevent pest infestation, application of inorganic and insecticide compounds including kaolin clay (Sepidan<sup>®</sup> WP 95%, 50000 ppm), mixture of kaolin (100000 ppm) and coconut soap insecticide (Palizin<sup>®</sup> SL70%, 3000 ppm), mixture of kaolin (100000 ppm) and chlorpyrifos insecticide (*Dursban*<sup>®</sup> EC 40.8%, 2000 ppm), were tested on the pine trees in Bakhtiardasht park of Isfahan region in 2015. Experiment was conducted in a randomized complete block design with 4 treatments, 10 replicates and 40 pine trees. The trees canopy was sprayed, before the beetles laying, three times at 60 days intervals from March to September. The oviposition deterrence was calculated by infested trees during the season. Based on the field studies, kaolin application deterred oviposition of Mediterranean pine bark beetle. The percentage of oviposition deterrence was 100% for kaolin, kaolin + cocunut soap insecticide, kaolin + chlorpyrifos insecticide treatments. Also, in all treatments containing kaolin any infected tree was found and infected tree was observed, only, in control treatment (40%). Therefore, kaolin (Sepidan<sup>®</sup> WP) and Mix of kaolin with insecticides, could be used successfully to reduce beetles oviposition and their damage.

**Keywords:** Control, kaolin, *Orthotomicus erosus*, oviposition deterrence