

**Experiment:** Residual Efficacy of “EcoRaider” Spray Solution against Bed Bugs.

**Objective:** To evaluate if 7 and 14 days aged dry residues of EcoRaider spray solution are effective against bed bugs.

**Method:** The EcoRaider spray solution was applied to 10 cm by 10 cm cardboard panels covered with white cotton fabric at the rate of 4.07 mg/cm<sup>2</sup> (1 gallon/ 1000 sq. ft.) using a Potter spray tower. The control panels were sprayed with water. These panels were aged for 7 and 14 days in the laboratory at 25°C. A field strain bed bugs were released onto the treated fabric and confined with a plastic ring (9 cm diameter and 2 cm height) for 5 min. Bugs were immediately transferred to a clean 1.5 cm diameter screened plastic dish. Dishes were placed in laboratory conditions at 27 °C with 40-50% RH and a photoperiod of 12:12 (L:D). Each treatment was replicated four times. Mortality data were recorded at 1, 3, 5, 7, 10, and 14 days after exposure. The bed bug was considered dead if there was no movement when it was prodded with a forceps.

**Results:** Both 7 and 14 days aged dry residues of EcoRaider were equally effective at 1, 3, 5, 7, 10, and 14 days after exposure. Both treatments caused 97.5 ± 1.5% mortality at 14 days after exposure. The mortality in the control was 7.5 ± 2.5% at 14 days (Figure 1). The results demonstrate high residual efficacy of EcoRaider when bed bugs are briefly exposed to treated substrates.

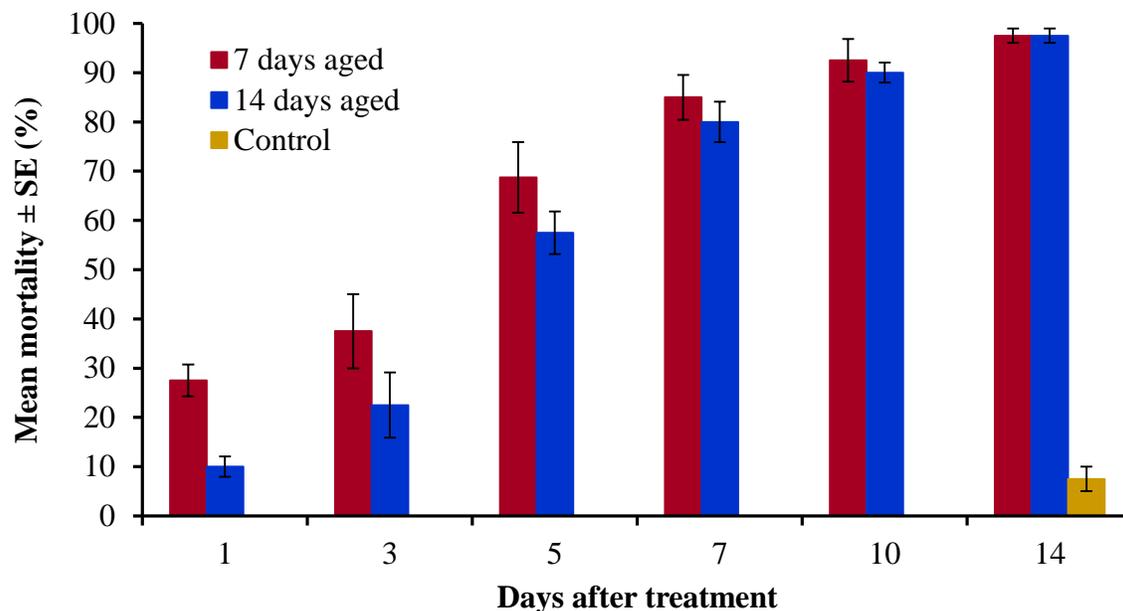


Figure 1. Percent mortality (mean ± SE) in bed bugs after 5 minutes exposure to 7 and 14 days aged dry residues of EcoRaider.