



Preliminary Report
for
95 Applications L.L.C.
March 29, 2021

I. TITLE: Laboratory Evaluation of Averzion for Arthropod Exclusion.

II. OBJECTIVE: The purpose of this study is to determine if Averzion can be used as a physical against common pest species from climbing surfaces coated with this material. These tests will be run using American cockroaches (*Periplaneta americana*), Oriental cockroaches (*Blatta orientalis*), Turkestan cockroaches (*Shelfordella lateralis*), and the Arizona bark scorpion (*Centruroides sculpturatus*).

III. INVESTIGATORS: Phillip Shults, Research Associate and Dr. Ed Vargo, Professor and Endowed Chair, Rollins Urban and Structural Entomology Facility, Department of Entomology, Texas A&M University, College Station, TX 77843-2143, (979) 845-5855.

IV. PROCEDURE: A laboratory study was initiated by personnel from the Rollins Urban and Structural Entomology Facility at Texas A&M University in College Station, TX. Wild-collected scorpions (*Centruroides sculpturatus*) were utilized in this study. The testing arena consisted of a 91 x 45 cm plastic container, with the interior walls coated with Fluon® to prevent arthropod escape. Two identical wooden structures (24 x 24 x 18 cm) were constructed to be placed into the arena (Fig. 1). The vertical surfaces of one of the structures received a single coat of paint and 30-40mils of Averzion while the other was left untreated to act as a control. After application of the

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Averzion, the structure was allowed to air dry for 48 hours before the test was started. A thin layer of baby powder was dusted on top of each structure to monitor arthropod activity. Additionally, a food item (dead cockroach) was placed at the center of each structure to entice the arthropods to attempt to climb the walls. Four scorpions were placed into the arena and were monitored daily for three days. This test was run under normal laboratory conditions (24 °C ; 12:12 day/night cycle, 40% relative humidity) and pictures were used to document arthropod activity as well as removal of the food item.

V: RESULTS AND DISCUSSION:

Upon placing the scorpions into the area, they immediately started to climb the untreated structure. Attempts were made to climb the structure treated with Averzion, however, they were unable to do so. After 24 hours, the food item was removed from the untreated structure while the food item on the treated structure remained in its original location (Fig. 2). At the end of the trial, it was apparent that the scorpions had made it to the top of the untreated structure many times as the baby powder had numerous track marks (Fig. 3B). The baby powder at the top of the structure treated with Averzion remained undisturbed (Fig. 3A) and the food item was never removed. This, in combination with our direct observation, provides evidence that Averzion acted as a physical barrier against scorpions.

VI: SIGNATURES:



March 30, 2021

Dr. Ed Vargo

Date

Professor and Endowed Chair



March 30, 2021

Phillip Shults

Date

Research Associate

VII: FIGURES:

Figure 1. The testing arena and wooden structures used in this tests; the structure coated in Averzion on the left and the untreated control on the right. Pictured is a dead cockroach placed on each as a food item for the scorpions.

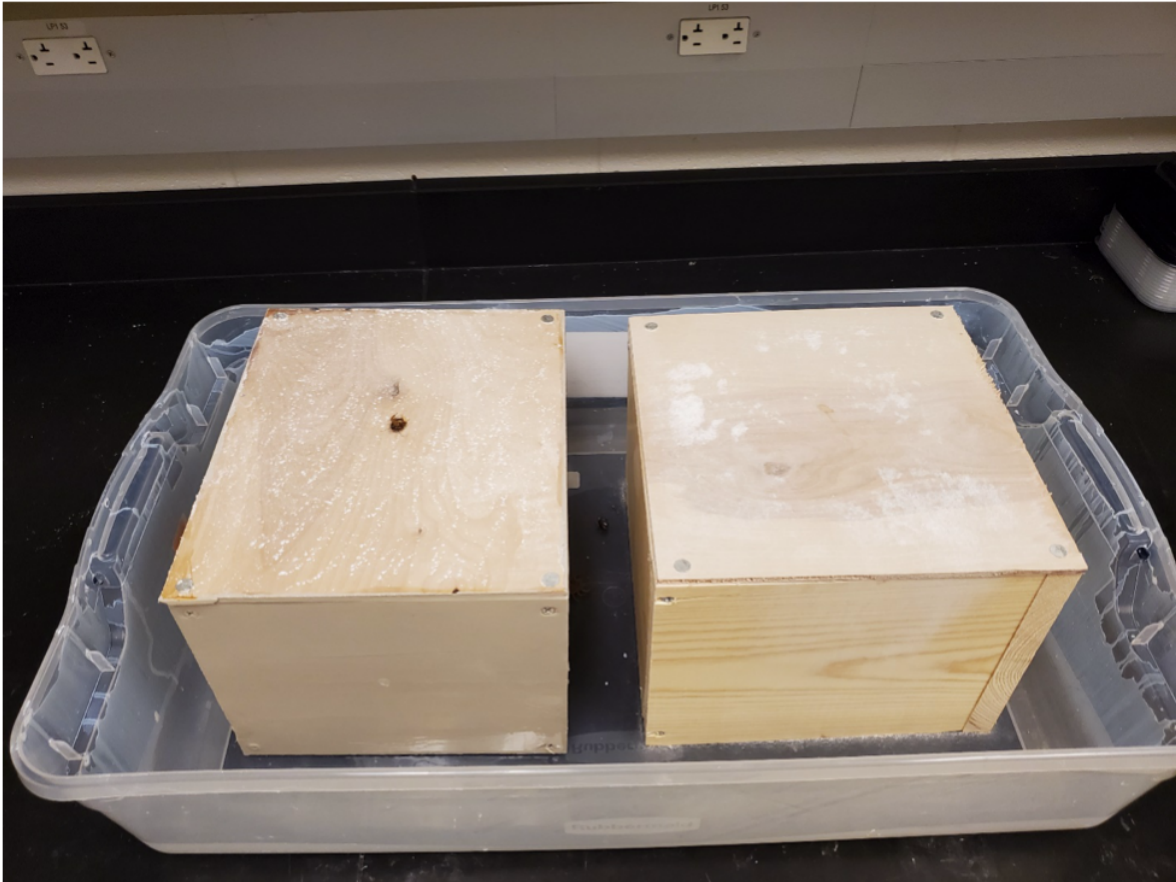


Figure 2. After 24 hours, only the food item on top of the treated structure (left) remained.

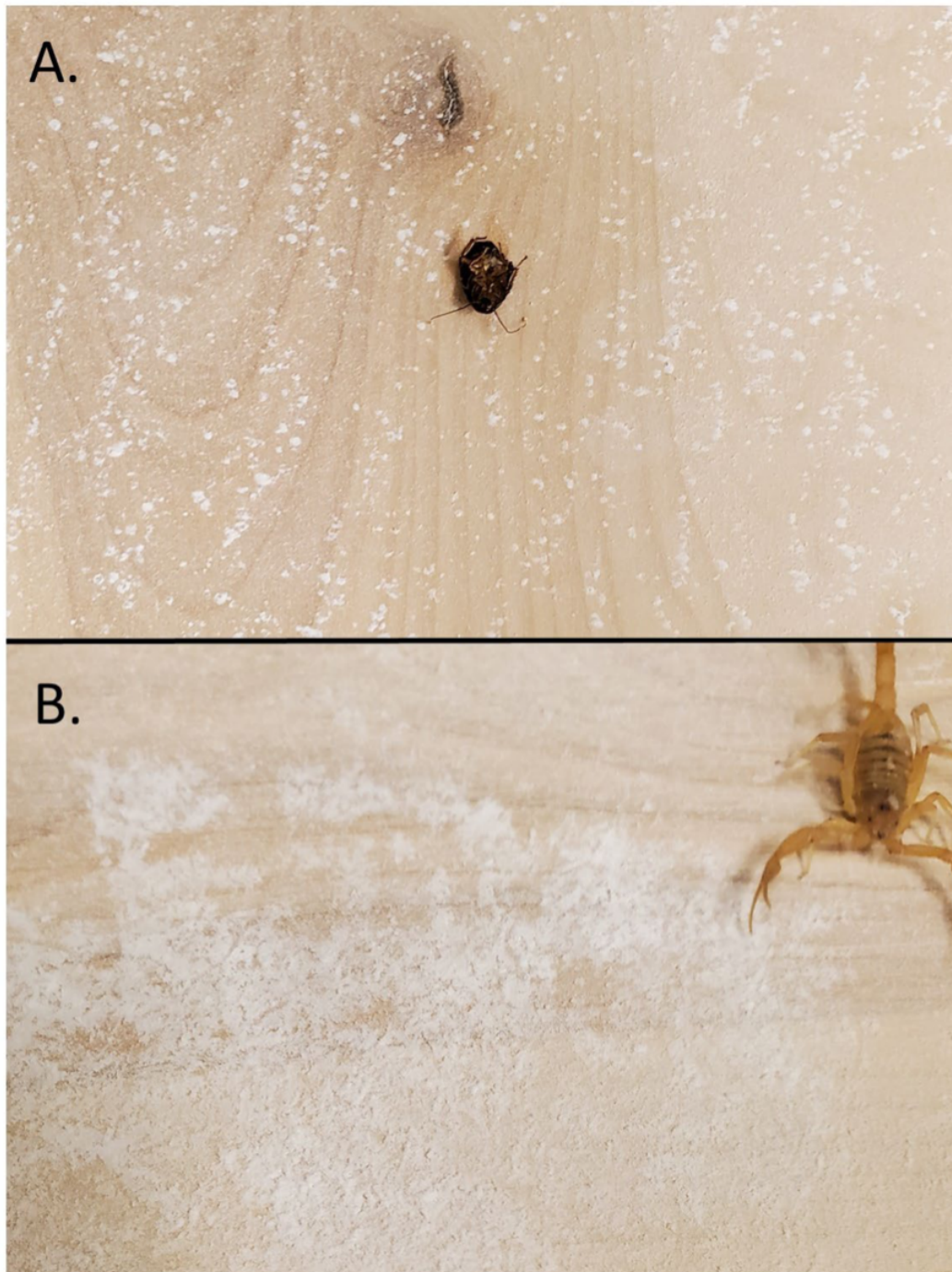


Figure 3. Baby powder was used to monitor scorpion activity and each structure was photographed at the end of the study. (A) The baby powder on top of the treated structure that is undisturbed; (B) the baby powder on top of the control structure with numerous track marks.

