

Fire Ant Repellents: Protection of Black-capped Vireos from Fire Ant Predation

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We have discovered and patented several chemical classes of repellent that have the potential to exclude fire ants from areas where they are not wanted. Examples of areas of use are electrical switch boxes, environmentally sensitive areas where insecticides are not permitted or reduction is mandated, e.g. State and National parks and military bases. The repellents are volatile and for long-term use require sustained release formulations. We have partnered with BioGuard R&D, Inc., who specializes in sustained release of bioactive compounds. This presentation discusses the repellent formulations and the preliminary use of the sustained release formulations in an environmentally sensitive area of a military base at Ft. Hood, TX. It has been documented through the Ft. Hood Endangered Species Program that significant predation occurs on the eggs and nestlings of the migratory Black-Capped Vireo and Golden-cheeked Warbler. The top two predators are snakes and the red imported fire ant, *Solenopsis invicta* (RIFA). The goal of this initial field study was to identify problem areas and assess the performance and of sustained release RIFA repellent systems in repelling RIFA away from nests and nestlings, thus increasing the probability for nestling survival. The sustained release formulations provided several months repellent activity under laboratory conditions. Similar formulations were prepared for use in preventing fire ants from foraging in scrub bushes harboring black-capped vireo nests. In this preliminary experiment of five nests that may have been predated on by fire ants only one was a treatment and four were in the controls. Additional work is planned this spring using a larger number of replicates.

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