Lab and field studies confirm Cryonite efficacy

In a recent field research study conducted by the American Academy of Entomological Sciences (AAES), results supported a 95-percent efficacy rate of the Cryonite system for mortality on mounds of established colonies of the red imported fire ant (*Solonopis invicta,* or RIFA) in their natural habitat.

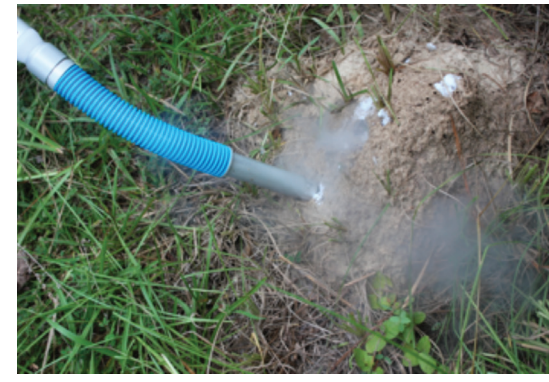
Although not widely used by pest management professionals (PMPs) nationwide, the Cryonite system has, for years, been known as an environmentally friendly alternative with a high efficacy rate for eradicating a broad range of insects by using freezing technology and dry ice.

Early laboratory studies show that none of the many examined species survived a temperature below -22° F, regardless of life cycle stage. The same study also concluded that the faster the cooling speed was, the lesser coolness was needed to achieve mortality in general. This also was true for pests perhaps lesser known as suitable for Cryonite treatments, such as moths and museum, flour, tobacco and grain beetles.

With these facts in mind, it was perhaps not surprising the efficacy rate was close to 100 percent for RIFA, according to the field studies conducted by AAES.

"Insects can be immune to toxins, but it isn't possible to be immune to mechanical methods," says Henrik Björkqvist, a PMP and Cryonite specialist with Silvandersson. "The study proves what we already know: Freezing technology is a great alternative to pesticides, and Cryonite is versatile —far from eradicating only bed bugs. Some technicians even use it against sea tulips (*Pyura spinifera*) on boat hulls."

There are more uses for Cryonite than many PMPs realize.



About the field study

Four RIFA mounds were selected, and two Cryonite systems were used. Each site was prepared with a plastic tarp, shovel and probe. Each was treated in a slightly different procedure and evaluated.

In the researchers' opinion, the most effective observed mortality (95 percent) was the method used approaching the mound with a plume from the lance while plunging the probe into the bottom of the mound from a downward angle of 45°; the lance tip inserted into the hole left by the probe and full injection held for 15 to 20 seconds. Other procedures were attempted with favorable results.

The researchers recommend the procedure be done as deeply as possible (not below the depth of the mound base, to ensure the Cryonite plume travels up and to the side channels) for the highest efficacy. The time should be extended to at least 30 seconds, depending on the size and depth of the mound. The researchers suggest that treatment commence by initiating the lance trigger, aiming it at the mound, opening to kill escaping ants while the probe is being inserted at the downward 45° angle as far as possible, and then insert the lance tip.

For additional information, contact Dr. Jeffrey Brown at AAES at **americanentomologyacademy@gmail.com** or **850-499-7961.**

Significance of cooling speed

Cooling rate (X-axis) related to mortality time (Y-axis) of common cloth moth larvae, *Tineola biselliella*

Please note: The graph is illustrative and cooling rate data has been rounded off.