

## USE OF STEAM HEAT TO CONTROL AN INVASIVE HITCHHIKING SNAIL, *CERNUELLA CISALPINA*, ON IMPORTED MILITARY SHIPPING CONTAINERS

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The efficacy of steam heat to treat military shipping containers infested with a hitchhiking Mediterranean snail, *Cerņuella cīsalpīna*, was examined in the field. Military ordnance is routinely shipped in containers from points in Europe to ports in the United States. Whole container fumigations using methyl bromide are often ineffective for a variety of reasons (e.g. poor fumigation technique, suspected dormant snail resistance to methyl bromide). Testing of alternative snail control measures is essential as we approach the impending phase-out of methyl bromide.

At an infested roadside location in Beaufort, North Carolina, a twenty foot military type shipping container was leased and placed on site. *C. cīsalpīna* was collected by hand, divided into lots of 50 individuals, and placed in cheesecloth packets. Packets of snails were then taped to a number of locations on the exterior of the container in association with DataTrace remote temperature probes. A 400,000 BTU portable steam generator manufactured by Sioux steam cleaner corporation was fitted with a manifold that flanked both sides of the test container. The container was then covered with 6mm polyethylene sheeting and steamed for a period of twenty minutes. A total of 5 replicated trials were completed. Treated snail packets were removed from the sides of the container, then transferred to a refrigerated incubator for 24 hr at 50F to allow for any recovery. All snail specimens were then observed for mortality.

Snail mortality was 100% for treated locations where temperatures exceeded 130F for 20 minutes. Results will support the development of a steam heat schedule for actionable snails in the USDA Treatment Manual.