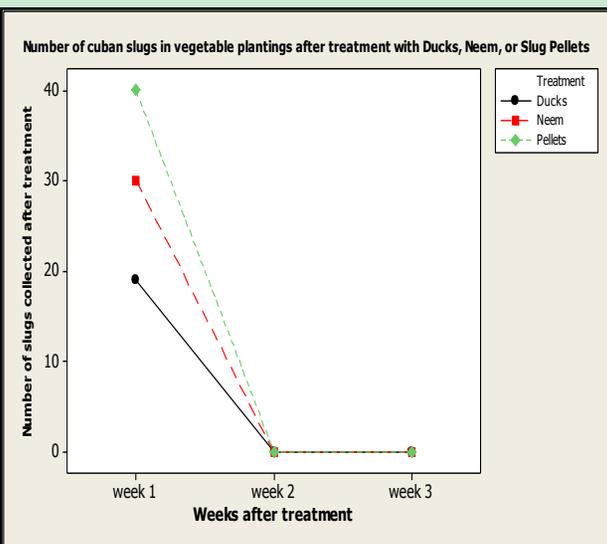


## Data Analysis

Slug mortality data were analyzed based on weekly average of dead slugs intruded in the treated area. Testing of the treatments in this study is not an experimental design.

## Results and Discussion

Mortality of Cuban slugs was high in the first week of treatment.. There were few or no slugs detected in the following weeks after treatment. Results of the three practices in field trials indicate that any of these practices should be effective at controlling Cuban slugs.



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Project Duration: Two (2) years

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## Professional + Producer Gant

**Project Number:** FW 08-305

**Project Title:** “Comparative Study of Cuban Slugs (*Veronicella cubensis*) Suppression Using Grazing Ducks, Neem (*Azadirachta indica*) Extract and Chemical Baits in the CNMI.”

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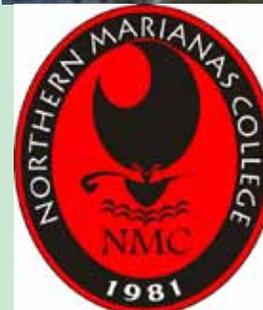
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**Suppression to Cuban Slug (*Veronicella cubensis*) (Pfieffer) Using Select Practices in the CNMI**

## Abstract

The Cuban slug (*Veronicella cubensis*) has recently risen in prominence as an agricultural, ornamental and nuisance pest on the island of Rota, CNMI. This study examines and demonstrates the most effective suppressing practice for Cuban slug during testing of three available management practices in field demonstrations. Results showed that three practices at weekly observations: Ducks Feeding on Cuban Slug, Neem (*Azadirachta indica*) Extract and Slug Pellets (Deadline M-Ps) suppressed the population of Cuban slug. Observations indicated that these practices should be effective at controlling Cuban slug.



## Introduction

Agricultural industry on Rota, an island within the Commonwealth of the Northern Mariana Islands, is vulnerable to slugs and snails. Slugs are causing severe crop losses and a false image of the safety of vegetable grown. The high cost of current control measures, such as baiting, is prohibitive, so this Professional + Producer grant will explore three cost-effective and sustainable control methods for slugs in vegetable crops.

The first producer used grazing ducks to eat the Cuban Slugs. The ducks also clear weeds and fertilize the ground. The second producer planted rows of Neem trees to use as windbreaks and for their pesticide properties. These trees are also known for their germicidal and medicinal purposes. The third producer set up modified baiting traps on his farm that are safe and cost effective.

This project has developed sustainable practices for Rota's agriculture industry. Increased harvest yields led to decreased imports. Risks from harmful pesticides are reduced.



## Using Slug Pellets (Deadline M-Ps)

We tested Deadline M-Ps ability to withstand breakdown of pellet due to weather, safeness and sustainability of baiting Cuban slug. The demonstration plot was conducted at Nurul Islam Paeda in Sabana area. This area has an abundant population of Cuban slug due to its topography and farming activity. Modified slug baiting traps, using pallets were placed five feet apart in the perimeter of the demonstration plots. It was covered with tin and treated with Deadline MP-s., replenishment was done as needed.

Plots were planted with head cabbage and tomatoes and treated weekly with Deadline M-Ps. Weekly monitoring by treating the plots with Deadline M-Ps, was done, dead individuals were counted, recorded, removed from the experimental arena and discarded immediately in all practices.

Each practice had four treatment plots with an area of three feet by forty feet and three feet apart covered with a plastic weed blocker.



## Using Ducks Feeding On Cuban Slugs

Lead producer Mr. Jack Manglona was responsible for the 38 ducklings' parent stock, (brooding, growing to laying stage). He was feeding the ducks and trained them to feed on Cuban slugs. Three feet wide duck confinement using chicken wire was placed in the perimeter of the vegetable beds to prevent slug damage.



## Using Neem Extract

Edel Depalog & Brian Richard's farm in Santa Cruz, Rota was chosen as a source of Neem as organic pesticide against the Cuban slugs. Neem was planted in one row in the perimeter ten feet apart, designed for windbreak and soil erosion control. A three feet wide perimeter was sprayed with a dilution of 1 liter of Neem leaf extract to 9 liters of water plus 100ml of dish soap. Stirred well and sprayed evenly to repel the slugs from intrusion into the vegetable beds.