



## **Research Report**

**Title:** Evaluation of Armorex<sup>1</sup> Against Golden Apple Snail

**Location:** Los Baños, Philippines

**Principal Investigators:** L. E. Fabro, National Crop Protection Center at University of Philippines Los Baños

**Crop:** Rice

**Date:** February 21, 2001

### **Abstract:**

The purpose of this study was to evaluate the molluscicidal property of Armorex on golden apple snails (GAS) and to verify what dosages were necessary to accomplish a moribund state and death. Plastic basins were filled with mud and snails extracted from lowland rice fields and were treated with Armorex. There were moribund rates of 100% beginning at 1 hour after treatment (HAT) and 100% death by 24 HAT across all treatment protocols. There was no moribund or death in the untreated controls. Armorex was found effective against GAS in all treatments.

### **Methods:**

Plastic basins with a diameter of 40 cm were filled with mud extracted from lowland rice fields to a depth of 2-3 cm. Marble-sized golden apple snails were taken from the same field and placed into a plastic bin to acclimate for 1 hour. Golden apple snails that were still active were then introduced to the 40 cm plastic bins at a rate of 10 GAS per bin. The test was conducted following the randomized complete block design with four replications to a treatment. Approximately 15 minutes after the snails resumed their activity in the basins, treatments were sprayed using a flat fan nozzle. Treatments and dosage rates are shown in Table 1.

<sup>1</sup> Armorex is a Minimum-risk pesticide used as a biocontrol for soil pests and parasitic nematodes.

Armorex is manufactured by Soil Technologies Corp. Fairfield Iowa USA.

Treatments	Rate	
	ml/L Water	ml/16 L Water
1. Armorex	75 (7.5% v/v)	1200
2. Armorex	150 (15% v/v)	2400
3. Armorex	300 (30% v/v)	4800
4. Untreated		

Table 1: Dosage rates of treatments.

### Results:

Immediately after spraying Armorex over the test basins, activity of GAS stopped in all the treatments. Ten to fifteen minutes thereafter, the operculum of GAS opened and bubbles were observed over each snail. One hour after, snails in all treatments were counted moribund as well as at 3 and 8 hours after treatment (Table 2). No movement of GAS was evident as well as extension of the antennae. Observation was extended to 24 hours and all snails were counted dead as individual snails emitted foul odor. Armorex at all rates were found effective against GAS.

Treatments	Rate	Moribund %			Dead %
	mL/L	1 hr	3 hr	8 hr	24 hr
1. Armorex	88	100	100	100	100
2. Armorex	176	100	100	100	100
3. Armorex	352	100	100	100	100
4. Untreated		0	0	0	0

Table 2: Moribund and death percentage of Golden Apple Snail.

### Conclusion:

The results of the basin test indicated molluscicidal properties of ARMOREX against GAS. At all dilution rates tested, marble-sized GAS succumbed to the treatment and at 24 hours after treatment, all snails were counted dead.