

# FACT SHEET

TT: Ag Ext : 20:07

by: Roshni S. Ramsingh, Entomologist (Ag.)

## Managing Giant African Snail (GAS) on the Farm

### Introduction

Giant African snail (**GAS**), *Lissachatina fulica* (previously *Achatina fulica*) is one of the worst invasive pests in the world. It was smuggled into Trinidad in 2008 and promptly escaped and is now wreaking havoc across most of Trinidad. Since **GAS** is new to the ecology of our Island most citizens are unfamiliar with its behaviour and are uncertain as to how to manage it. This factsheet deals specifically with managing **GAS** on farm and minimising the risk of spreading **GAS** from farm to farm and from producer to consumers.

### Threat of GAS

#### Threat to Humans:

**GAS** is a known vector of the rat lungworm, a parasite that can cause a form of meningitis in humans. It is important that we do not handle **GAS** with our bare hands; use waterproof gloves to handle.

#### Threat to Plants:

**GAS** is known to feed on 500 different species of plants including many commercially important ones such as papaya, banana, cabbage and melongene.

#### Threat to Environment:

**GAS** is very unsightly leaving slime and faeces on buildings and walkways.

### How to Identify GAS

- The giant African snail is a land snail that can grow up to 20 cm (8 inches) in length.
- The shell of **GAS** is reddish brown with cream to yellow stripes running in one direction along the length from the pointed part of the shell.
- The colour of **GAS** varies slightly depending on age and diet but it is usually within the brown and cream spectrum.
- The shell is long and has between 7 - 9 whorls when full grown.
- **GAS** is a hermaphrodite meaning every snail has both male and female reproductive structures, this is one of the reasons **GAS** is so prolific, each individual lays eggs.
- The adult snail lives for 9 years. It starts to lay eggs at 5 months old and lays three times a year up to 400 eggs at a time.
- The eggs of **GAS** are about 5mm in size, oval and cream to white in colour.

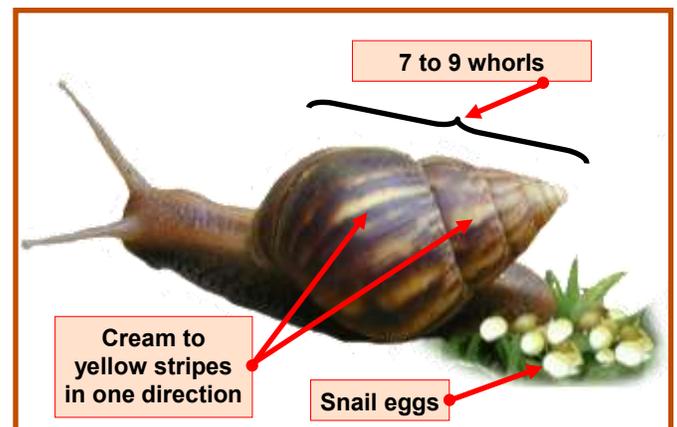


Figure 1. Giant African Snail (GAS) and eggs

# Keeping Your Farm GAS Free

## 1. Minimise Hitchhikers

If your farm is in an area that is free from **GAS** it is very important that precautions are taken to exclude this dreaded hitchhiker from your property. **GAS** is usually spread by humans and can enter your property:

- ⇒ In plants
- ⇒ In soil or land fill
- ⇒ In the dirt that sticks on to the wheels and ploughs
- ⇒ By crawling onto vehicles parked in infested areas

### You can reduce the risk of hitchhikers

Inspect your vehicles, including the undercarriage when coming back on your farm especially if you have travelled through a **GAS** infested area or parked in close proximity to other vehicles from infested areas e.g. whole sale markets and nurseries.

It is advisable to sprinkle metaldehyde or iron phosphate pellets close to your vehicles at night to draw out and kill any snails that may be hiding in them.

## 2. Good Sanitation

### Where would GAS hide on a farm?

There are areas on your farm that **GAS** will naturally congregate.

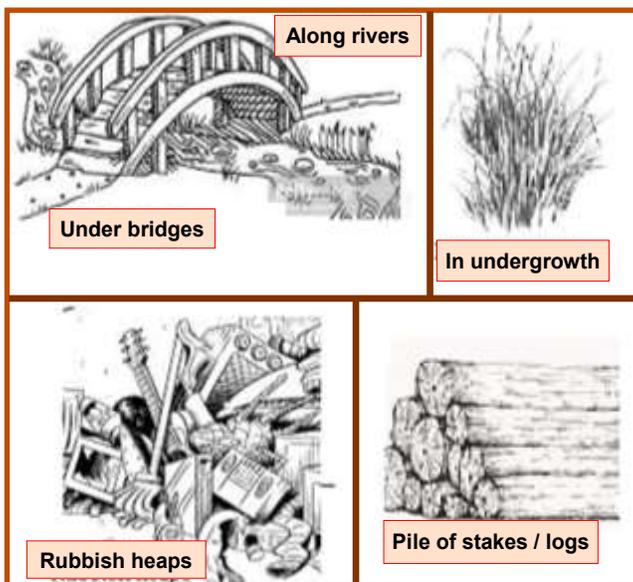


Figure 2. GAS Hiding places

Eliminating as many hiding spaces as possible will reduced the threat of **GAS**.

- ◆ Trim undergrowth
- ◆ Keep drains and pond and river edges clear
- ◆ Remove rubbish heaps
- ◆ Do not store stakes and other such material in piles on the bare earth
- ◆ Secure compost bins

## 3. Clean Planting Material

Pay attention to the source of planting material, try to bring in plants and animals only from **GAS** free farms. If this is not possible, examine plants and soil carefully to make sure there are no small snails or eggs present. Even though **GAS** gets to 20 cm. in size, hatchlings are about 5mm, small enough to hide in seedlings and planting material.

Soil can harbour small snails and eggs, examine soil that plants come planted in. As far as possible try to bring in soil-less planting material.

Pay special attention to bananas and plantain plants, not only are they large enough to harbour larger snails, but **GAS** has a preference for these plants and are usually found on them.

Seedlings and plants brought onto a **GAS** free farm should be taken to a designated holding area and treated with iron phosphate or metaldehyde bait.

## Management of an Infested Farm

Management of **GAS** on the farm involves the use of both chemicals and cultural practises.

If you have **GAS** on your farm you will want to ensure that you do not inadvertently spread it to other farms or to customers. You want to make sure that your produce is not contaminated with the chemicals used to manage **GAS**. Most critically you want to take steps to eradicate **GAS** from your property.

### Use of Chemicals

The two baits Metaldehyde and Iron Phosphate are recommended to control **GAS**.

In areas with vegetables and tree crops metaldehyde can be broadcast at the recommended rate. Metaldehyde degrades when wet so this method is constrained by the weather and irrigation of the crop. Instead of broadcasting, the pellets can be put in a large pipe to protect them from rain and irrigation.

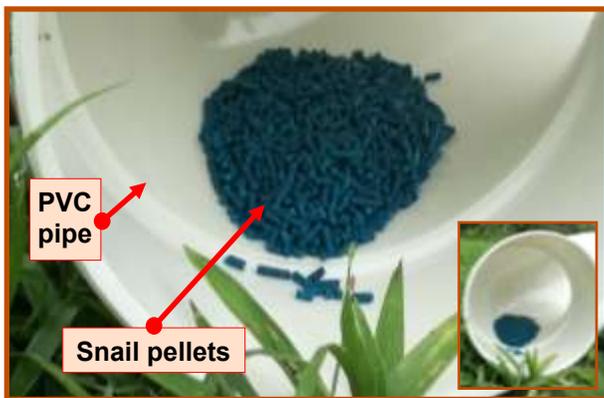
**The Chemicals that can be used to manage GAS are:**

- 1. 4% metaldehyde - a pellet that is applied on the surface of the soil.**
- 2. Iron phosphate - a pellet that is applied on the surface of the soil.**

**Limiting spread of GAS**

- Wash produce to be sold properly to make sure neither eggs nor snails are on it. This applies to fruit, vegetables, seasonings, flowers, planting material.
- Pay attention to packaging, ensure bags, crates, boxes and baskets are free of GAS and GAS eggs.
- Eggs, milk, honey, meat and live animals are less likely to be contaminated with GAS and GAS eggs but still pay attention to containers and packaging including the underside of churns.
- Make sure there is no soil anywhere on livestock that are being sold, pay special attention to the hooves.
- Manure is a common by-product of livestock farms, if there is GAS on the farm care must be taken to ensure the manure is not infested. The area where the manure is stockpiled should be ringed with iron phosphate to keep the snails out. Iron phosphate is preferred since it will not harm animals.
- Any equipment that is loaned or borrowed should be properly washed to remove all soil etc. that may be harbouring snails or eggs.

If GAS is present on your farm make sure you eliminate as many of its hiding places as possible by practising sanitation.

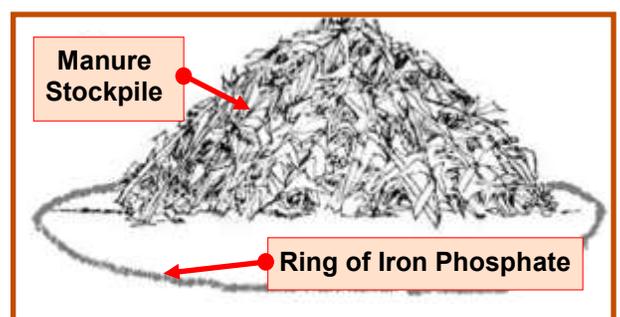


**Figure 3. Pellets in a PVC pipe**

Make sure the pipe is on the ground so the snails can easily crawl in to get the bait. Metaldehyde can be mixed with kitchen scraps and placed in heaps within the field. This serves two purposes, the scraps entice the snails and the distribution of the metaldehyde within the field is very controlled so there is little risk of contaminating produce.

Metaldehyde will kill adults and larger juveniles, dying snails will instinctively expel all of their eggs some of which will survive and hatch. In order to adequately control GAS, the metaldehyde has to be routinely reapplied until no more juveniles are seen.

Iron phosphate can also be broadcast within the field or placed in little heaps. Generally iron phosphate is handled the same as the metaldehyde. Iron phosphate is safe for use around animals.



**Figure 4. Using Iron Phosphate to kill Giant African Snails**

## Preventing Pesticide Contamination

No chemical or residue should be present on produce being sold for human consumption. The chemicals used to control **GAS** are applied to the ground not to the plants, yet there is still a slight risk of the pesticide coming in contact with the produce.

Ensure the recommendations on the label are followed especially dilution rates, re-entry period and post-harvest interval.

Metaldehyde is considered safe for all crops except cauliflower which has a harvest interval of 21 days. Iron phosphate is classified as generally safe and has no re-entry or post-harvest period.

Basic commodity handling such as washing produce in clean water is sufficient to safeguard consumers once the post-harvest interval has been adhered to.

### MANAGING GAS ON THE FARM



Figure 5. Metaldehyde in between shrubs



Figure 6. Metaldehyde mixed in kitchen scraps

Technical content by Roshni S. Ramsingh, Entomologist (Ag.)  
Layout and design by Saskia H. Ramesar, Illustrator

"All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, transmitted in any form, or by any means reproduced without permission in writing, of the Ministry of Agriculture, Land and Fisheries."