

Pacific Pests, Pathogens and Weeds - Online edition

Giant African snail (050)

Common Name

Giant African snail

Scientific Name

Lissachatina fulica, previously known as *Achatina fulica*

Distribution

Asia, Africa, North (Florida, Hawaii), South and Central America, Oceania. It is recorded from American Samoa, Federated States of Micronesia, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, New Caledonia, New Zealand, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu, and Wallis & Futuna.

Hosts

Usually, the snail eats rotten vegetation and animal wastes; however, a wide range of vegetables, ornamentals and tree crops are also eaten.

Symptoms & Life Cycle

The snails vary considerably in size and colour. Some grow to 15 cm in length and 5-8 cm wide, whereas others grow only to 6.5 cm long. Commonly, the shells are light brown with darker brown and cream bands, but there is variation (Photo 1).

The snail feeds at night or during the day when the weather is overcast and rainy; it avoids the sun by sheltering under stones (Photo 2), logs or between leaves (Photo 3). If dry weather lasts, the snail seals the opening of the shell awaiting a return to favourable conditions.

Each snail has male and female sex organs (hermaphrodite), but reproduction requires cross-fertilization. Eggs are first laid when females are about 6 months' old. The eggs are cream, about 5 mm diameter (Photo 4), laid below the soil surface or on the sides of logs, in batches of 200 to 300. The eggs hatch within 1 to 2 weeks. One snail can lay up to a 1000 eggs each year and snails live for up to 5 years.

The snails can travel up to 50 m in a night, moving on the slime made by the soft part known as the 'foot'. Long distance travel is by human beings: the eggs and young snails may be in soil of pot plants or sawdust; and the adult snails may be taken and raised for food, kept as pets, or transported as hitchhikers on boats or land vehicles.

Impact

The snail attacks more than 500 types of plants, but it prefers breadfruit, cassava, cocoa, papaya, peanut, rubber and most species of legumes and cucurbits. Cuttings and seedlings are especially vulnerable. Damage is greatest when outbreaks first occur in a new area. Population explosions result in hundreds of snails per square metre.

The rat lungworm parasitises the snail, and if the snails are not cooked thoroughly before being eaten by human beings, the lungworm can cause meningitis.

The economic impact of the snail is unclear. When first introduced, populations soar, but population explosions are often followed by population crashes. The snail then becomes a minor pest of agriculture and human health. But it does have an impact on the environment: (i) dead snails are places where flies breed; and (ii) it causes loss of biodiversity: native plants are eaten, and it competes with local snails.

Detection & inspection

Conduct surveys at night looking for signs of rasping on leaves or defoliated plants, ribbon-like excreta (Photo 5) and slime trails. Look for snails much larger than any indigenous to Pacific islands; look for the typical colour banding on the shell.



Photo 1. Giant African snail, *Lissachatina fulica*, in this case the shell is brown with light brown stripes.



Photo 2. Giant African snail, *Lissachatina fulica*, sheltering under a rock by day to prevent dehydration.



Photo 3. Giant African snails, *Lissachatina fulica*, on banana.



Photo 4. Eggs of the giant African snail, *Lissachatina fulica*.

Management

NATURAL ENEMIES

Predatory snails, such as *Euglandina rosea* and *Gonaxis quadrilateralis*, and flatworms, e.g., *Platydemus manokwari*, have been introduced to control the snail, but the effects have been a disaster for local snail populations. Environmental impact studies are essential before the introduction of these predators because of their non-specific nature.

Ducks (e.g., Indian runner ducks) will attack the snail; they are the only type of livestock that will do so. Although population explosions can be immensely destructive immediately after spread to a new area, invariably snail population will decline. The problem is how to deal with the snail until that happens, which may be months or years.

CULTURAL CONTROL

Cultural control is important. The following should be done:

- Make a strip of bare earth about 1.5 m wide around cultivated areas. Bands of sand are also effective.
- Collect the snail regularly, preferably by mobilising the community, schools in particular, then bury the snails or feed them to pigs after boiling for an hour.
- Conduct awareness campaigns: (i) snails should not be kept as pets; (ii) they are a threat to human health; and (iii) community action is needed to control them.

CHEMICAL CONTROL

The usefulness of metaldehyde (pellets containing 1.5-1.8 % active ingredient) over large areas is not encouraged, it is a chemical toxic to livestock and human beings, as well as slugs. If used:

- Take care to prevent livestock, pets and children from eating the pellets.
- Poisoned snails should never be fed to pigs or other livestock.
- Put the pellets in tins or bamboos in the evening and collect them in the morning.
- Note, chemical control needs to be combined with cultural methods to be effective.

More recently, baits with iron-based poisons, e.g., iron phosphate and sodium ferric EDTA have been shown to be effective and safer to use against snails. *However, use to manufacturers' instructions.*

Note, a ban on the outdoor use of metaldehyde will be introduced in the UK from March 2022. It can be used in permanent greenhouses. It poses an unacceptable risk to birds and mammals. Ferric phosphate can be used as an alternative, but follow manufacturers' instructions.



Photo 5. Excreta of the giant African snail, *Lissachatina fulica*.

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Information from CABI (2020) *Achatina fulica* (giant African land snail) Cop Protection Compendium. (<https://www.cabi.org/cpc/datasheet/2640>); and Walker K (2005) Giant African Snail (*Achatina fulica*); PaDIL - <http://www.padil.gov.au>; and Giant African snail (2019) Business Queensland. Queensland Government. (<https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/crop-growing/priority-pest-disease/giant-african-snail>); and from Waterhouse DF, Norris KR (1987) *Achatina fulica* Bowdich. *Biological Control Pacific Prospects*. Inkata Press.

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