

SNAIL FREE ZONE

May 2009



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Detection of snails on one Australian export box can result in 100% mandatory inspections of all Australian exports to the USA.

Australia has several species of snail, some common, some rare, and some native, whilst some are introduced species. Most constitute a pest species when exporting products overseas.

In 1996, three different species of snails were intercepted at USA ports on citrus shipments from Australia. Two of these species, the common white snail and the small brown snail, were of concern to USA quarantine authorities¹.

Since that time there have been other incidents whereby shipments from Australia have been intercepted due to the presence of a variety of species of snails.

The presence of snails of all types in shipments (mostly on the external surfaces of containers) poses a severe threat to Australian exports of products, such as citrus, to the USA².

In the thirteen years since issues were first identified, the problem has not been adequately addressed and instead has spread from citrus exports to a whole range of other products as varied as dairy and mineral sands.

THE COST OF COMPLACENCY

There is a significant cost associated with snail infestation, which is usually borne by the exporter. These costs can include:

- Fumigation costs
- Inspection costs
- Costs associated with delayed cargo, including demurrage
- Re-export costs (including loss of price)
- Administration costs

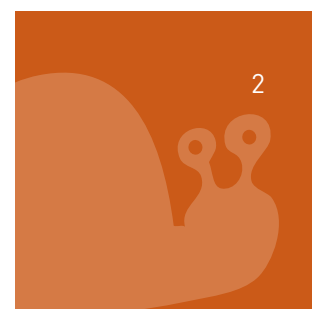
In 2006 a dairy exporter had to pay a shipping line over \$100,000 over a two year period to change goods over to clean empties after they had been quarantined in the US due to the detection of snails on their containers.

The exporter also had to enlist the help of the AQIS and the Australian embassy in Washington to secure the release of their goods. The company now has eight staff employed to inspect containers for four hours each month at a cost of \$24,000 per annum.

In 2008, detection of snails resulted in the exterior of twenty containers being fumigated for seventy two hours after the cargo was unloaded. Only one container was found with 1 tiny brown snail. All twenty containers had to be fumigated and the total cost of the process was \$2000 per container. Another exporter reported thirteen containers being infested at a cost of \$25,000.

Random inspections changed to 100% mandatory inspections from August 2008 to January 2009 across **all Australian exports** to the US. Significant costs for fumigation are based on a master Bill of Lading, so for example if a snail is detected on one of four containers in a consignment, all four will be fumigated.

The significant costs are for demurrage, seventy two hour fumigation treatment and \$120 per day levied for late returns. The actual cost of fumigation varies but in Los Angeles the charge is \$750/container plus \$100 per container handling fee under USDA supervision³.



¹ The white Italian snail was also intercepted but was of less concern as it is known to occur in USA

² Snails—a quarantine concern for export citrus to the USA, Dennis Hopkins, Entomology Unit, SARDI; http://www.sardi.sa.gov.au/__data/assets/pdf_file/0004/44878/cit_snailfact2.pdf

³ Riversun Exports Pty Ltd, Case study, 2008

WHAT TO LOOK FOR

The Common white snail (fig 1), the Small brown snail (fig 2) and the Pointed snail (Fig 3) are illustrated below.

Figure 1

- Common white snail (*Cerutuella virgata*)
- Shell diameter up to 22 mm



Figure 2

- Small brown snail (*Microxeromagna vestita*)
- Shell diameter up to 7 mm



Figure 3

- Pointed snail (*Cochlicella acuta*)
- Shell length up to 18 mm



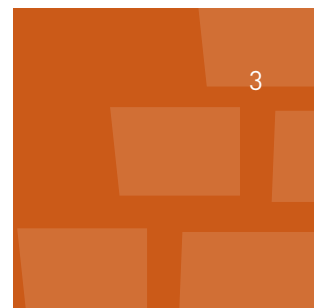
Due to their small size (especially juveniles) these snails may be difficult to distinguish on a container as highlighted in figure 4 & 5 to the right, (the white circled area), hence the need for vigilance!

Snail infestation is a year round issue but during the summer months, some snails survive by climbing up structures (containers) to escape high soil temperatures and also by entering a process known as aestivation, or summer sleep, where the snails go into a state of dormancy similar to hibernation. This makes it hard to determine whether the snails are dead or alive, but they should always be treated as being alive.

Figure 4



Figure 5



MAJOR CONTROL POINTS AND INDUSTRY RESPONSIBILITIES

To be effective, major control points must be where transport containers, transport and loading equipment, field bins, packaging materials, and finished pallets of produce are stored. Infestation and contamination is most likely at these locations. These include

- Container depots and road, rail and sea terminals
- Transport company storage yards
- Pallet manufacturers and packaging storage facilities
- Packing sheds
- Wharf side storage and loading facilities

Control Procedures

All of the following procedures are designed to either reduce the snail populations in a given area, or reduce the risk of snails climbing onto, or into, shipping containers at various stages from the packing shed to the wharf

Reduction methods consist of two main components. These are physical and chemical control methods. For optimum control the physical control measures must be followed by a chemical control program.

Physical Control

1. Removal of vegetation and topsoil for six to eight metres around the perimeter of storage areas followed by application of a soil treatment that prevents regrowth of vegetation.
2. Removal of all rubbish and debris that may harbour snails around the perimeter walls of sheds, loading bays, storage areas and fence lines. Removal of non essential objects that snails climb to escape ground temperatures e.g. old fence posts.
3. Reduction of grass and weed levels by grading, slashing or control with herbicides along shed walls, fence lines and storage perimeters. Removal of organic material left behind after slashing and spraying. Burning off of the vegetation that aestivating snails are attached to, or that remains after slashing.
4. Cultivation of soil. Ploughing and discing has been found in trials to reduce the numbers of both adult snails, eggs in the soil and immature snails. This practice is useful in areas adjacent to storage areas and production facilities.
5. Process separation: Good physical separation of production and storage facilities will greatly assist in reduction of numbers of snails moving from infected areas or produce, onto pallets, packaging supplies and finished pallets.

If possible, place shipping containers well away from areas where snails are likely to be harbouring, preferably on bare ground or surfaced areas. If possible, place containers on bearers while they are present in the packing shed yard. Bait a three metre band around the container if it is considered that there are snail populations within 30 metres of the container.



Chemical Control

Snails feed on organic matter. The slashing or spraying of unwanted weeds and other vegetation provides an excellent food source if this material is left on the ground. Where the vegetation is left on site, a baiting program should follow up the physical control.

1. Implementing a baiting program when snails are active during damp conditions will destroy immature and adult snails.
2. Two types of baits are effective; these contain the active ingredient metaldehyde or methiocarb. These are for outside use **only** and at no time should these chemicals be allowed to come in contact with fruit.
3. When using these baits it is essential to follow the manufacturer's instructions and spread the pellets out evenly. The pellets should not be heaped, as this action will make the product attractive to domestic pets.
4. The placing of baits in areas likely to provide shelter and food for snails is an effective monitoring tool for checking snail numbers. These checks are most effective in damp weather after rain.⁴

Container Inspection

1. Because of the tendency of snails to hide in crevices or crawl into holes it is necessary to inspect both interior and exterior of containers. Occasionally, the presence of snails may be indicated by a faint slime trail and this normally indicates recent snail activity.
2. Particular attention must be paid to the twist locks and bottom of the containers, as well as forklift tine channels.
3. All containers must be inspected and the results documented
4. Empty containers should be inspected at the point of pick-up to check for container integrity and snail infestation. Upon receipt of a container at a packing facility, an external and internal visual inspection should be performed prior to loading with cargo.
5. Loaded containers should be inspected for exterior contamination on departure from your facility and on arrival at terminals.

BE VIGILANT

“As contamination can occur at any stage in the export chain, it is important for all stages of the export chain from the empty container park, through the various transport companies, packing establishments, freight forwarders, depots, rail heads, port operators and shipping companies to be aware of this issue and take measures to address the risk of container contamination”⁵



⁴ Riversun Export Pty Ltd, Specification Manual 28/04/97

⁵ Neil Murphy, General Manager, South Australian Freight Council Inc

USEFUL CONTACTS

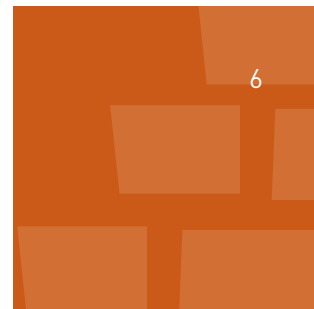
As a first reference point, you should discuss this issue with the local representative of your shipping company and/or logistics service providers.

OTHER USEFUL CONTACTS INCLUDE:

Australian Freight Councils Network (AFCN)	www.freightcouncils.com.au
Australian Quarantine & Inspection Service	www.daffa.gov.au/aqis
Victorian Freight & Logistics Council	www.vflc.com.au
South Australian Freight Council	www.safreightcouncil.com.au
Logistics Information & Navigation Centre (LINC)	www.the-linc.com.au
South Australian Research & Development Institute	www.sardi.sa.gov.au
Shipping Australia	www.shippingaustralia.com.au

This document was prepared under the auspices of the Australian Freight Councils Network (AFCN). The Australian Freight Council Network (ACFN) comprises:

- Queensland Transport and Logistics Council
- Queensland Multimodal Freight Council
- Freight & Logistics Council of NSW (FALCONSW)
- South Australian Freight Council
- Tasmanian Freight Logistics Council
- Victorian Freight & Logistics Council
- Western Australian Freight and Logistics Council
- Australian Logistics Council



REFERENCES

- Riversun Export Pty Ltd, Specification Manual 28/04/97
- Snails-a quarantine concern for export citrus to the USA, Dennis Hopkins, Entomology Unit, SARDI

Disclaimer

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