

Guidance on producing, harvesting and importing terrestrial edible snails for human consumption

Snails for human consumption are defined in paragraph 6.2, Annex I of Regulation (EC) No. 853/2004 as meaning: terrestrial gastropods of the species *Helix pomatia* Linné, *Helix aspersa* Muller, *Helix lucorum* and species of the family Achatinidae. Annex I of this document contains more, general information on these species of snail.

Marine gastropods are not covered by this guidance.

INTRODUCTION

All food of animal origin for human consumption must meet the requirements of the food hygiene legislation, including Regulation (EC) Nos. 853/2004 and 852/2004 (unless exempt - see Article 1 of each of these Regulations for details of exempt businesses). Based on the legal requirements of the food hygiene legislation, this document, which should be read in conjunction with the relevant legislation, aims to provide advice on how food business operators can meet their legal obligations. It makes suggestions on training, monitoring and maintaining hygiene and food safety management procedures. It does not replace the requirements of the legislation.

Every effort has been made to ensure that the information in this document is correct and as helpful as possible. While food business operators are not obliged to follow this advice - there may be other, equally valid, ways of achieving compliance with the food hygiene legislation - it is ultimately the responsibility of individual businesses to ensure they comply with the law. The information in this document is not an authoritative interpretation of the law as only the Courts can make such decisions.

EC FOOD HYGIENE REGULATIONS

Three EU Food Hygiene Regulations have applied in all Member States from 1 January 2006. They are:

- **Regulation (EC) No. 852/2004** – on the hygiene of foodstuffs
- **Regulation (EC) No. 853/2004** - laying down specific hygiene rules for food of animal origin
- **Regulation (EC) No. 854/2004** - laying down specific rules for the organisation of official controls on products of animal origin intended for human consumption

Regulation (EC) No. 852/2004 – on the hygiene of foodstuffs

Regulation (EC) No. 852/2004 sets out general hygiene rules in the form of objectives for 'good hygienic practices' to be applied by all food businesses to protect consumers. These include structural, cleaning, maintenance and training requirements. The combined implementation of these 'pre-requisite' hygiene requirements and permanent procedures based on the hazard analysis and critical control points (HACCP) principle should together form the operator's 'Food safety management system'.

Regulation (EC) No. 853/2004 – laying down specific hygiene rules for food of animal origin

Section XI, Annex III of Regulation (EC) No. 853/2004 sets out the requirements for the killing and preparation for sale of snails for human consumption. This Regulation shall not apply to primary production¹ of snails, the retail sale of snails or to the supply of snails from one retail establishment to another retail establishment when that supply is on a local, marginal and restricted basis. There is more information on the 'retail-to-retail' exemption and on the meanings of local, marginal and restricted in paragraphs A.3.3.2.5 – A.3.3.2.7 on pages 107 and 108 of the Food Law Practice Guidance (England). Codes of Practice and Practice Guidance for each of the four UK countries are at:

<http://www.food.gov.uk/enforcement/enforcework/foodlawcop/>

Neither shall this Regulation apply to food containing both products of plant origin and processed products of animal origin – ie processed snails. However, processed products of animal origin used to prepare such food must be obtained and handled in accordance with the requirements of this Regulation. There are definitions of 'processing', 'unprocessed products' and 'processed products' in Article 2 (m), (n) and (o) respectively in Article 2 of Regulation (EC) No. 852/2004.

Regulation (EC) No. 854/2004 – laying down specific rules for the organisation of official controls on products of animal origin intended for human consumption

This Regulation lays down the specific rules for the organisation of official controls on products of animal origin; it applies to all activities and persons to which Regulation (EC) No. 853/2004 applies. The general principles for official controls are set out in Article 4 of this Regulation. In the case of snail producers, the competent authority will be the local food authority.

The following Regulations also apply to the production of food for human consumption

Regulation (EC) No. 178/2002 – laying down the general principles and requirements of food law

Article 17 of this Regulation puts the onus on the food business operator to ensure that food for human consumption satisfies the requirements of food law relevant to their activities. Article 14 of this Regulation requires food to be safe and fit for human consumption. It also requires, in Article 18, food business operators to have in place systems and procedures to identify the other business from whom they have received supplies and to whom they have sent their products.

Insufficient attention to detail when planning food business operations can lead to the production of food that is not fit for human consumption or is unsafe (ie it does not meet Regulatory requirements).

Regulation (EC) No. 2073/2005 (as amended) – microbiological criteria for foodstuffs

This Regulation sets out the food safety criteria and process hygiene criteria for food of animal origin – both raw and ready-to-eat foods. Specific food safety criteria for gastropods are set out in lines 1.17 and 1.24 of 2073/2005. The food business operator must carry out testing at the frequency set out in the Regulation, they must also take into account the context of the operational procedures based on HACCP principles, good hygiene practice and the instructions for use of the foodstuff.

¹ 'Primary production' is defined in Article 3.17 of Regulation (EC) No. 178/2002 as: the production, rearing or growing of primary products including harvesting, milking and farmed animal production prior to slaughter. It also includes hunting and fishing and the harvesting of wild products.

UK FOOD HYGIENE REGULATIONS

The EU regulations are applied in the UK by:

- The Food Safety and Hygiene (England) Regulations 2013, (SI 2013/2996)
- The Food Hygiene (Scotland) Regulations 2006, as amended (SSI 2006/3)
- The Food Hygiene (Wales) Amendment Regulations 2007, as amended (SI 2007/373 (W.33))
- The Food Hygiene Regulations (Northern Ireland) 2006, as amended (SI 2006/14)

These regulations make provision for the enforcement and execution of the Community Regulations and provide for enforcement measures (hygiene improvement notices, hygiene prohibition orders, hygiene emergency prohibition notices and orders, and remedial action notices and detention notices) to be available in respect of a food business operator whose procedures or controls need to be improved. These regulations provide that a person who contravenes or fails to comply with specified provisions of Regulation (EC) No. 852/2004 or Regulation (EC) No. 853/2004 is guilty of an offence. They also provide powers of entry for authorised officers of an enforcement authority; penalties for offences and rights of appeal.

COMPLYING WITH THE EU FOOD HYGIENE REGULATIONS

There are two main elements to snail production and harvesting: primary production (rearing snails); and secondary production (processing of snails).

Primary production: food business operators are expected to comply with the requirements of Annex I of Regulation (EC) No. 852/2004.

Secondary production: food business operators are expected to comply with the relevant requirements of Annex II of Regulation (EC) No. 852/2004 and apply food safety management procedures based on HACCP principles (see below). These procedures should cover:

- periodic verification checks to see if working instructions are being followed continuously and properly. This might also include what to do in the case of disruptions to normal working, such as breakdowns or contamination incidents. This should be followed by corrective actions to restore control if food safety management procedures fail, including dealing with any contaminated product; establishing the underlying cause of a failure; preventing similar incidents in the future;
- confirming that company procedures meet legal requirements.

The local competent authority has a duty to undertake official controls and enforce the legislation in food businesses.

Hazard analysis and critical control points (HACCP)

Article 5 of Regulation (EC) No. 852/2004 requires food business operators to put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles. The seven HACCP principles provide a systematic way of identifying food safety hazards, making sure that they are being managed responsibly and showing that this is being done day-in, day-out. The HACCP principles are:

1. Identify any hazards that must be prevented, eliminated, or reduced to acceptable levels;
2. Identify the critical control points at the step or steps at which control is essential to prevent or eliminate a hazard or to reduce it to acceptable levels;
3. Establish critical limits at critical control points which separate acceptability from unacceptability for the prevention, elimination or reduction of identified hazards;
4. Establish and implement effective monitoring procedures at critical control points;

5. Establish corrective actions when monitoring indicates that a critical control point is not under control;
6. Establish procedures, which shall be carried out regularly, to verify that the above measures are working effectively;
7. Establish documents and records commensurate with the nature and size of the food business to demonstrate the effective application of the above measures.

In short this involves the following steps:

PLAN... *what needs to be done to maintain food safety and write it down.*

DO... *what you planned to do to maintain food safety.*

CHECK... *that you are doing what you planned to do to maintain food safety and write down what was checked and when.*

ACT... *to correct any food safety problems and write down what has been done about the problem and when.*

The FSA have developed MyHACCP which is a free web tool intended to support small food manufacturing businesses through the process of developing a food safety management system based on Hazard Analysis and Critical Control Point (HACCP) principles as required by EU Food Hygiene rules. For further information, please click on the link below.

<https://myhaccp.food.gov.uk/>

Hazards in food production

A hazard is ‘a biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect’ (Codex Alimentarius)

Hazards may be introduced, increased, or controlled at each step in food handling operations. Establishing what those hazards are is a key step in the HACCP process. To produce safe food for consumers, all the important safety hazards that are associated with the production of food need to be prevented, eliminated or reduced to an acceptable level. These food safety hazards may be biological, physical or chemical.

Biological Hazards: Bacteria

The main hazards that can occur in food are harmful food poisoning bacteria, like *E.coli* O157, Salmonella and Campylobacter. Many of these harmful bacteria can live in the guts of healthy animals/snails, and can be shed in their faeces and be carried on the shell or skin of the snail. The risks from these hazards are that: food-poisoning bacteria can be transferred to other snails during preparation; food-poisoning bacteria from e.g. worker’s hands, tools, working surfaces, equipment, water, pests, cleaning equipment, packaging or other snails, can be transferred on to raw snails; food-poisoning bacteria on snails can grow during production, storage or transport if the conditions, particularly temperature, are suitable.

Although thorough cooking kills most food poisoning bacteria, food may be handled many times before it is cooked and the bacteria on it may be spread to other foods that may not be cooked before being eaten. When conditions are ideal, certain types of bacteria can double their numbers every 20 to 30 minutes. Depending on the organism, the number of bacteria needed to cause illness in a healthy adult may vary from 1,000,000 to as low as 10 (*E. coli* O157). Food business operators and consumers need to take precautions that include maintaining temperature controls and keeping raw product separate from cooked product and other ready-to-eat foods.

Biological Hazards: Parasites

Parasites in the form of protozoa are/can be common in snails. Thorough cooking should eliminate these parasites. The food hygiene legislation (paragraph 6, Section XI, Annex III of Regulation (EC) No. 853/2004), requires a snail's hepato-pancreas to be removed and not used for human consumption, if it might present a hazard.

Chemical Hazards

Possible sources of chemical contamination of snails might include residues of pesticides if the snails have been gathered from the 'wild'. If they have been farmed they may have been given 'medication' and still contain residues. Possible sources of chemical cross-contamination of snails during processing, storage or transport include contact with cleaning and disinfecting agents, lubricants, or pest baits used in the processing premises or from a reaction between packaging material and the product. Poorly executed cleaning programmes and careless storage and use of cleaning materials may also give rise to chemical hazards. Procedures are needed to prevent or minimise the risk of such hazards causing illness or injury to consumers. Processed snail flesh can often show signs of fermentation which may be a chemical hazard worth noting, as snail flesh decomposes very quickly if not chilled.

Physical Hazards: 'foreign bodies'

Possible physical hazards or foreign bodies that may occur in snails include shards of material such as metal, glass or china that they may have eaten in the 'wild'. During production snails may become contaminated with, for example, bits of shell, hair, splinters of wood, plastic, glass, dust or from process operatives.

PRE-REQUISITES

In order for food safety management to be effective, HACCP should be supported by a number of pre-requisites, such as:

Design and Facilities

The siting, location, design, layout and construction of food premises and the choice of fixtures, fittings and equipment are crucial to ensure that food businesses can operate under hygienic conditions and produce food safely. Poorly designed and constructed buildings and equipment are a potential source of physical, chemical and/or biological hazards. Such hazards could cause illness or injury to consumers and so must be prevented or minimised.

Water

Water used in the rearing of snails for human consumption should be potable or clean, as necessary, to prevent contamination. The water used in the processing of snails must, however, be potable (which means that it must meet the minimum requirements of Directive 98/83/EC) and there must be an adequate supply of it, including for food washing, hand washing, cleaning and other requirements. It may be drawn from the public mains supply network operated by a water company or from a private supply, such as a borehole. Where water is drawn from a private supply/borehole it may require treatment (e.g. filtration, ultra-violet light or chlorination) to ensure it is potable.

Where non-potable water is used, for example for fire control, steam production or refrigeration, it must circulate in a separate, identified system. It must not mix with the potable water system.

Maintenance

Food premises and equipment that are not kept in good repair and condition are a significant, potential source of biological and physical contamination of food. Poorly maintained premises and equipment cannot be effectively cleaned. Poor maintenance may also allow the entry of other sources of physical, biological and chemical contamination such as water, pests and dust. (Note: Poor maintenance can also have health and safety implications for workers.) It would be useful to keep a maintenance schedule to record what has been done, for example, in the event of a breakdown.

Cleaning

Clean means: free from dirt, marking, or soiling. Dirt and soil can be organic e.g. fat; or inorganic e.g. rust, lime scale. Surfaces in contact with food should be:

- **Physically clean** - all visible dirt/soil/residues have been removed.
- **Chemically clean** - all cleaning material residues have been removed.
- **Microbiologically clean** - the number of micro-organisms has been reduced to a level acceptable for human health. This usually involves the use of disinfectants.

Dirt, food waste and other debris are a significant potential source of biological and physical hazards and will attract pests that can contaminate the production environment. Effective cleaning on a regular basis is essential to remove dirt and debris from the food premises. Effective cleaning depends on the removal of physical contamination followed by the correct use of chemical agents. This means using the right chemicals, applying them at using the right equipment and at the right concentration, and allowing them time to work and, if necessary, washing them off with clean, potable water. Effective disinfection of clean food contact surfaces is necessary to reduce bacteria to an acceptable level. Advice on best practice would be to keep a cleaning schedule to record what/when cleaning is undertaken; this should include a cleaning programme for equipment, facilities and environment.

Pest Control

Pests (insects, rodents, birds, as well as domestic animals) entering or infesting food plants are a significant potential source of biological and physical hazards. Poorly executed pest control programmes and careless storage and use of pesticides may also give rise to chemical hazards. Procedures are needed to prevent or minimise the risk of such hazards causing illness or injury to consumers.

Training

Poor personal hygiene or behaviour of staff involved in food (including snail) production are a significant potential source of microbiological and physical hazard. Poor work practices or failures to follow instructions may also give rise to microbiological, physical and chemical hazards. Staff at all levels need sufficient training and instruction to know and understand the consequences of their actions. Clear work instructions should be given so that they handle food safely.

Personal Hygiene

People employed in, or visiting, food plants are an important potential source of biological, chemical and physical hazards. Procedures are needed to minimise the risk of such hazards causing illness or injury to consumers. Operators should be aware of the Guidance on Food Handlers Fitness to Work which is available, with a summary, at:

<http://www.food.gov.uk/foodindustry/guidancenotes/hygguid/foodhandlersguide>

Temperature controls

A warm and wet environment provides the ideal conditions for growth of food poisoning and spoilage bacteria. A combination of low temperatures and dry surfaces in the processing area (including for storage and distribution) will inhibit the growth of bacteria and extend shelf life of “snail meat”. Bacteria can multiply quickly if “snail meat” is stored or transported at too high a temperature or if heat treatment is inadequate. Procedures are needed to minimise the risk of this hazard causing illness to consumers. The Agency’s guidance on temperature control, including for chilled foods, is available at:

<http://www.food.gov.uk/foodindustry/guidancenotes/hygguid/tempcontrolguidanceuk>

Snail Processing

Raw materials accepted for snail production should, as far as possible, be free from microbiological hazards, such as E. Coli O157 and *Salmonella*; from chemical hazards, such as chemical residues from cleaning, and from physical hazards such as metal, dirt or other foreign bodies. Poor hygiene will increase the potential for contamination of food, including transfer to ready-to-eat products, and increase the possibility of food poisoning. Procedures, such as effective cleaning, hygienic handling and correct storage are needed to minimise the risk of these hazards causing illness in consumers.

Food Traceability and Identification Marking

Regulation (EC) No. 178/2002 requires food business operators to be able to identify from whom they receive any raw materials and to whom they are supplied. Information about suppliers and customers means that if a food safety emergency occurs, the food can be tracked backwards or forwards through the food chain. This information can be used to withdraw or recall food more quickly from the market and to target these actions to specific products. Emergencies may be due to concerns over microbiological contamination (e.g. E.coli O157, *Salmonella*), chemical contamination or physical contamination (e.g. glass) of the product, or if unfit food failing to meet food safety requirements has been released on to the market.

An identification mark, which includes the approval number of the premises of production, should also be applied to snail products. It indicates that the snails have been produced in premises that meet the relevant legal requirements (ie those in Regulation (EC) No. 853/2004, including those of Regulation (EC) No. 852/2004) and is an important part of the traceability system. The local authority will be able to provide advice as to whether the establishment requires approval under Regulation (EC) No 853/2004.

Wrapping, Packaging and Transport Hygiene

Unprotected or poorly wrapped and/or packaged food is vulnerable to physical damage as well as microbiological contamination and cross-contamination. Use of the wrong wrapping materials or the unhygienic storage of snails (including the finished product) may lead to chemical contamination of the food. Procedures are needed to prevent or minimise the risk of such hazards and thus of causing illness to consumers.

During transport food may be exposed to any number of hazards from the environment or through cross-contamination from other food. Poor cleaning or maintenance of transport vehicles may also give rise to chemical hazards. Procedures are needed to prevent or minimise the risk of such hazards and thus of causing illness or injury to consumers. Temperature control during transport is also important, for instance to minimise spoilage, and it may be appropriate to have temperature control devices fitted to the transport vehicle.

IMPORTING SNAILS AND SNAIL PRODUCTS

The requirements for importing snails and snail products, from approved third countries, are covered by Article 6 of Regulation (EC) No. 853/2004. Snails and snail products can only be imported into the EU at a designated Border Inspection Post (BIP). The BIP must be given prior notification of the import by means of Part 1 of a Common Veterinary Entry Document (CVED). Consignments must also be accompanied by the appropriate health certificate. There is more information on importing snails and snail products, including the list of approved third countries and the health certificate is available from the Gov.uk website at:

<https://www.gov.uk/personal-food-plant-and-animal-product-imports>

However, the Commission is currently updating the list of third countries from which snails and snail products may be imported and you are advised to check the current position with Animal Health before you arrange any imports (contact details below).

At the BIP, consignments will be subject to documentary (including of the health certificate) and identity checks and may be subject to a physical check. Where concerns arise about products from an approved country, the European Commission may apply additional import requirements, or may prohibit imports.

The UK has no bilateral agreements with any non-EU countries permitting the import of snails and as such does not have any existing lists of approved establishments from which snails may be imported. Pending the development of a list of establishments approved by the EU, authorities in non-EU countries should approve establishments which meet EU food hygiene and safety requirements. The present arrangements (from Gov.uk website) at:

<https://www.gov.uk/animal-products-import-and-export>

are that all consignments of snails for human consumption must:

- originate from approved third countries or parts of third countries listed in Community legislation;
- originate from approved establishments meeting the requirements of Regulations (EC) Nos. 852/2004, 853/2004 and 854/2004, as appropriate. (For information, the Commission has informed Member States of their intention to produce the first harmonised list of establishments from which snails, frogs' legs and egg products from non-EU countries may be imported.);
- be accompanied by an appropriate health certificate as set out in existing Community legislation. The model health certificate for the import of chilled, frozen, shelled, cooked, prepared or preserved snails intended for human consumption is contained in Commission Regulation (EC) No. 1664/2006 (page 7) which is available at:
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:320:0013:0045:EN:PDF>
- be accompanied by a CVED;
- come into the UK through an approved Border Inspection Post.

The European Commission's Guidance on import requirements and the new rules on food hygiene and official controls is available at:

http://ec.europa.eu/food/international/trade/interpretation_imports.pdf

For more information on importing snails and snail products from third countries you should contact Animal Health (an Agency of Defra) at

Hadrian House, Wavell Drive
Rosehill Industrial Estate
Carlisle, CA1 2TB
Telephone: 01228 403600

Team mailboxes

Imports

Telephone: 01228 403600 (Option 3)

Email: Imports@ahvla.gsi.gov.uk

<http://www.defra.gov.uk/ahvla-en/imports-exports/international-trade/>

Note: The Commission is drafting legislation under which products where half or more of the content is snail will be subject to similar requirements.

FURTHER GUIDANCE

There is more general information on complying with Regulation (EC) No. 852/2004 in The Guide to Food Hygiene and Other Regulations for the UK Meat Industry – Meat Industry Guide (MIG). This Guidance aims to provide risk-based, proportionate advice on the facilities and procedures that can meet the requirements in meat premises. It is available from the Food Standards Agency's website, at: <http://www.food.gov.uk/foodindustry/meat/guidehygienemeat>

The European Commission has also issued guidance on the implementation of certain provisions of Regulation (EC) No. 852/2004 on the hygiene of food for human consumption. This is available at:

http://ec.europa.eu/food/food/biosafety/hygienelegislation/guidance_doc_852-2004_en.pdf

Annex 1

Edible species of snail

Regulation (EC) No. 853/2004 defines snails as meaning: 'terrestrial gastropods of the species *Helix pomatia* Linné, *Helix aspersa* Muller, *Helix lucorum* and species of the family Achatinidae.'

- ***Helix pomatia* Linné** measures about 45mm across the shell. It also is called the "Roman snail," "apple snail," "lunar," "La Vignaiola," the German "Weinbergschnecke," the French "escargot de Bourgogne" or "Burgundy snail," or "gros blanc." Native over a large part of Europe, it lives in wooded mountains and valleys up to 2,000 meters (6,000 feet) altitude and in vineyards and gardens. The Romans may have introduced it into Britain. Immigrants introduced it into the U.S. in Michigan and Wisconsin. Many prefer *H. pomatia* to *H. aspersa* for its flavour and its larger size, as the "escargot par excellence."
- ***Helix aspersa* Muller** is also known as the French "petit gris," "small grey snail," the "escargot chagrine," or "La Zigrinata." The shell of a mature adult has four to five whorls and measures 30 to 45mm across. It is native to the shores of the Mediterranean and up the coast of Spain and France. It is found on many British Isles, where the Romans introduced it in the first century A.D. (Some references say it dates to the Early Bronze Age.) In the early 1800's the French brought it into California where it has become a serious pest. These snails are now common throughout the U.S. It was introduced into several Eastern and Gulf states even before 1850 and, later introduced into other countries such as South Africa, New Zealand, Mexico, and Argentina. *H. aspersa* has a life span of 2 to 5 years. This species is more adaptable to different climates and conditions than many snails, and is found in woods, fields, sand dunes, and gardens. This adaptability not only increases *H. aspersa*'s range, but it also makes farming *H. aspersa* easier and less risky.
- ***Helix lucorum***, or Turkish snail, is a large, edible air-breathing land snail or escargot, a terrestrial pulmonate gastropod mollusc in the family helicidae. As its name suggests, it originates from the Black Sea region, adjacent Asia Minor, today's western and central Turkey. Now it is also found on the central Balkan peninsula (Southern Romania, Bulgaria and Thrace (in North-eastern Greece) as far as Albania) and Italy west of the Apennine. The species does not occur in Germany but has been introduced in Austria, south of Vienna; it has also been introduced in parts of Southern France and on the Iberian peninsula. With a shell diameter of between 30 and 60 mm the Turkish snail is usually larger than the Roman snail (*Helix pomatia*), see above; its size depending on the temperature of its environment (its natural habitat is bushes, light forests and cultivated areas and it is only active at night and after strong rains). The form of a *Helix lucorum* shell is similar to that of *Helix pomatia*: globular with a depressed spire and largely rounded red-brown strips going around the whorls. The shell walls are thick and the surface is irregularly striped; the aperture looks oblique and has a thickened rim of a reddish or brownish colour. *Helix lucorum* is not cultivated but is collected 'from nature'. In delicatessen shops in Central Europe cultivated Roman snails (*Helix pomatia*) are sometimes sold in the more colourful shells of *Helix lucorum*.

Species of the family Achatinidae, (New Latin, from Greek "agate") is a family of medium to large sized tropical land snails, terrestrial pulmonate gastropod mollusks from Africa. The family includes some 13 genera. Well known species include *Achatina achatina* the Giant African Snail, and *Achatina fulica* the Giant East African Snail. These snails are amongst the largest terrestrial snails and may reach twenty to thirty centimetres (eight to twelve inches respectively). The shell of an agate is longer than it is wide; it is conical with an extended body whorl and a blunt apex. Today giant African land snails are found almost anywhere where the natural environment, such as climate and food, are right. The giant African land snails are mainly herbivores feeding on fruit and vegetables, the most nutritious parts of a plant. But they have been known to feed on a dead animal to provide protein. In many places, it is a serious agricultural pest that causes considerable crop damage. Also, due to its large size, its slime and faecal material create a nuisance as does the odour that occurs when something like poison bait causes large numbers to die. The U.S. has made considerable efforts to eradicate Achatina.