

**UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
PLANT PROTECTION AND QUARANTINE**

**CONTAINMENT GUIDELINES
For Nonindigenous Snails**

CONTAINMENT GUIDELINES FOR NONINDIGENOUS SNAILS

I. APHIS Standards for Snail-Rearing Facilities

These guidelines are a reference to help you (a state, federal researcher, educator, or commercial entity) design, build, maintain, and operate a facility for specific types of organisms-- in particular, nonindigenous snails (including *Helix aspersa* = *Cryptomphalus aspersus*, *Cantareus apertus* = *Helix aperta*, *Eobania vermiculata* = *Otala vermiculata*, *Helix pomatia*, *Otala lactea* as well as native species of land snails which are transported interstate). While snails may not require a containment facility, their great reproductive potential and ability to escape coupled with their plant feeding activities means that great care should go into developing plans to house and contain them. Field collections of these organisms may be contaminated with described and undescribed organisms such as plants, parasites, plant pathogens, other pathogens, arthropods, etc.

The inspection and permitting procedures of the USDA APHIS PPQ are intended to prevent the release of nonindigenous plant pests to the environment of the United States. Accidental or purposeful release of these organisms is a violation of the **PLANT PROTECTION ACT** and is subject to civil and/or criminal penalties and loss of permits.

USDA, APHIS, PPQ welcomes alternatives that are proven to meet or exceed the standards. To insure timely permitting, please review this document, and research design alternatives. For any questions, call or fax PPQ's Containment Facilities staff at (301) 734-5304, or FX (301) 734-5392.

II. CONSTRUCTION STANDARDS FOR THE ENTIRE CONTAINMENT STRUCTURE

CONSTRUCTION STANDARD A. Locate the facility in areas with minimal human, agricultural and environmental risk. Identify the facility as dedicated and secure.

SUGGESTIONS:

1. Locate the facility in areas relatively free of agricultural zones, environmentally sensitive areas (e.g. areas with endangered species that may be negatively impacted by accidental release), high risk microclimates (e.g.. known flood zones) or other high-risk areas.
2. If possible, design the containment facility as a separate, dedicated building. Always design and build the facility to prevent pest escape.

3. At the public or main entry to containment, post:
 - Containment director/ containment officer name and contact numbers.
 - A sign stating “ACCESS IS BY AUTHORIZED PERSONS ONLY”.
 - Emergency telephone numbers.

CONSTRUCTION STANDARD B. Design the **Floor Plan** to prevent escape of the enclosed organism(s).

SUGGESTIONS:

1. Build public restrooms outside of containment rooms. However, if restrooms must be built inside a containment room, use the same construction standards as listed for that type of containment room.
2. Build offices outside of containment areas.
3. Install self-closing doors throughout the containment areas.
4. Install exterior doors that lock.
5. Eliminate hiding places in the facility for snails. Keep facility clean, remove clutter and debris.

CONSTRUCTION STANDARD C. CONSTRUCT WALLS, CEILINGS AND FLOORS THAT ARE IMPENETRABLE TO THE ENCLOSED ORGANISMS, AND WITHSTAND REPEATED CLEANING AND DECONTAMINATION.

SUGGESTIONS:

1. Construct the walls and ceilings from building materials that resist moisture and withstand repeated decontaminations with bleach or other caustic solutions.
2. Install floors that are impenetrable to the organism and withstand repeated cleanings. Monolithic (in one-piece) floors, e.g. poured concrete, are desirable. Wood floors are not acceptable.
3. Seal junctions, holes or penetrations of walls, ceilings, and floors with plaster, caulk, or equivalent materials.

CONSTRUCTION STANDARD D. Windows are not required, but if they are installed, use Windows that are impenetrable to the enclosed organisms.

SUGGESTIONS:

1. Install windows that do not open, or if windows open, cover openings with 1/8 inch mesh screen or hardware cloth.
2. Seal joints between the glazing, windowsills, frames, etc. and walls with appropriate materials.

CONSTRUCTIONS STANDARD E. Install Doors that contain the organism and contribute to the security of the facility.

SUGGESTIONS:

1. Install self-closing doors throughout the containment areas.
2. Install exterior doors that lock.
3. Post signs on the exterior and interior of the emergency door that state, “USDA, APHIS Containment Facility - Emergency Exit Only”.

CONSTRUCTION STANDARD F. Design and install an HVAC System (Heating, Ventilation and Air Conditioning) that prevents escape of the contained organisms.

SUGGESTIONS:

1. Install metallic screen of at least 1/8 inch mesh in size, over all air sources and vents to prevent the escape of contained organisms.

CONSTRUCTION STANDARD G. Design and install a Plumbing System to contain the organisms and remove liquid wastes.

SUGGESTIONS:

1. Seal drains (sink, floor, shower, etc.) with 1/8 inch - mesh screen or hardware cloth.

IV. EQUIPMENT STANDARDS

EQUIPMENT STANDARD B. Use equipment to Sterilize or Decontaminate solid waste (e.g. contained snails, soil, plant material, solid waste, and contaminated or infested articles) before removing it from the facility.

SUGGESTIONS:

1. Install an autoclave, oven, or incinerator. Conduct tests to evaluate effectiveness of sterilization equipment.
2. Treat soil before disposal by steam heat (15 lbs pressure at 250 ° F. for 30 minutes) or dry heat (250 ° F. for 2 hours or 310 ° F. for 30 minutes).
3. All materials except soil that are removed from containers (e.g. unconsumed food, dead snails, other debris) are immersed in bleach solution (maximum dilution 1 part 0.5% sodium hypochlorite to 5 parts water) for 5 minutes before disposal. These materials may also be incinerated or autoclaved.

EQUIPMENT STANDARD C. Use Cages and Containers to confine arthropods.

SUGGESTIONS:

1. Construct containers (e.g. rearing bed or box) with a cover of either screen or hardware cloth (mesh size 1/8th inch or smaller) stretched across a wood or metal frame. Cages may be constructed from glass, Plexiglas, polycarbonate, etc, to prevent arthropod escape.
2. Cover cage ventilation areas with at least 1/8 -mesh hardware cloth or screen.
3. There should be a space of at least 8 inches left between soil or substrate in the container and the lid.
4. Insure cages are easy to clean and disinfect.
5. Anchor cages in the to a solid structure to prevent tipping or pushing the cages.
6. Lock cages or lids to prevent unauthorized access to snails.
7. If snails are to be processed somewhere else than at the containment location, live snails are to be transported from the containment facility to the processing facility in a container covered with a screen lid of 1/8 inch or smaller.

III. OPERATIONAL STANDARDS

OPERATIONAL STANDARD A. The permittee is responsible for the daily operation and physical integrity of the snail facility.

SUGGESTIONS:

1. The permittee is responsible for containment of the organisms in the facility. He/she also maintains a copy of the Standard Operating Procedures (SOP) Manual for the facility. SOPs contain directions for normal use, maintenance, testing, disinfestation, and disinfection of the facility and it's equipment.
2. The permittee should meet all PPQ requirements or conditions as listed in permits for snails kept in the facility. Permits from other Federal and State Agencies may also be required for certain plant pests. Receipt of USDA Plant Pest Permits does not relieve applicants from the responsibility of obtaining other permits. USDA Permits may be withheld or revoked if other Federal and State requirement are not satisfied.
3. Obtain permission from PPQ prior to moving regulated organisms outside of the facility.
4. If the facility stops operating as a containment facility, either temporarily or permanently, notify PPQ.
5. Notify PPQ of any structural or containment changes prior to implementation.