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Aquaria maintenance for snails

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Introduction

Biomphalaria, *Bulinus,* and *Oncomelania* can be maintained in a wide variety of containers. For practical reasons, we prefer to use shallow trays, rather than deep aquaria for maintenance. Whatever the container or aquarium used, once the water has been established as conducive to snail growth and reproduction, water should be changed periodically to reduce build-up of snail and food by-products. Of particular importance is keeping water quality at a level in which there is no bacterial or other contaminant overgrowth that can cause noxious conditions for the snails. *Keeping water continuously aerated by using an air bubbler with an aquarium pump will reduce the need to change the water so frequently.*

Equipment

Shallow pan or aquarium
Air bubbler
Aquarium pump
Fine sieve for removing snails

Materials and reagents

Artificial Pond H_2O (water)
Pulverized limestone (lime)

Procedure

- Clean pan: prepare a clean pan with water.
- Used pan: remove uneaten pieces of lettuce or gel snail food from the pan/aquarium. Pour the pan contents over a fine sieve (held over a sink or waste bucket) to catch the snails. Using feather weight forceps, place the snails gently into the clean pan
- Cleaning a used pan: Rinse with tap water and scrub the pan with lime to get rid of the scum or debris. *Do not use soap!* Rinse well with tap water and allow to dry before use. For patent snails, clean with 70% ethanol and allow the pan to dry overnight
- Most snail colonies will do well if they are changed into a completely fresh container of water. However, some labs prefer to change only a partial amount of water, leaving some of the "conditioned" water in place. For new laboratories, this practice may in fact be preferred until one is assured that completely fresh changes of water do not increase mortality in the colony.

Comments

Each laboratory must develop its own routine for changing the water. One of the more common problems necessitating frequent water changes is the presence of dead snails in the population. This is especially true in the case of infected snail populations that are actively producing cercariae, where the mortality rate is usually considerably higher than in uninfected snails. The soft tissues of dead snails are

ready substrates for overgrowth of bacteria and protozoa. Fouling of the aquarium can occur rapidly if unchecked and will affect the health of the remaining snails. Soap and bleach *should not* be used in snail pans. Clean with 70% ethanol and allow the pan to dry overnight.

References

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2. Tucker, M. S., Karunaratne, L. B., Lewis, F. A., Frietas, T. C., and Liang, Y-S. 2013. Schistosomiasis, in Current Protocols in Immunology 19.1.1-19.1.57, John Wiley and Sons, Inc. Published online November 2013 in Wiley Online Library (wileyonlinelibrary.com). doi: 10.1002/0471142735.im1901s103.

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