Fumigating Structures Containing Fish Aquariums

Aquariums maintained by hobbyists and for commercial display contain extremely complex and sensitive tropical freshwater or saltwater ecosystems. These systems may contain a variety of display animals, plants, such as algae, and microscopic organisms important for filtering wastes from the water and providing food sources for the display animals.

The slightest change to environmental conditions, such as air temperature or quality, can seriously impact aquarium ecosystems. A structural fumigation with Vikane gas fumigant impacts the environment within tented structures in two ways that can harm these aquatic ecosystems:

1. Most tropical freshwater and marine aquariums must be maintained at a constant temperature, usually between 74-80 F, depending on the ecosystem. Air conditioning units for structures are generally turned off during structural fumigation, because the compressor pumps can not operate if covered by tarpaulins. In southern states, interior ambient temperatures can reach 100F in summer months in tarped structures when the air conditioners are turned off. These temperatures would be lethal to many aquatic organisms. Some aquariums may have chillers, but these are uncommon due to their expense, bulkiness, and noise they produce.

2. Vikane is toxic to any organisms breathing oxygen. This includes the display organisms in the aquarium and aerobic bacteria used in the biological filtration systems found in many tanks. Biological filters may use aerobic bacteria to convert toxic nitrogenous waste of aquatic animals to less harmful nitrogen compounds. These bacteria are cultivated on a media with a large surface area , such as plastic, spiky spheres. The bacteria grow on the surface of the media, and could be killed by exposure to Vikane.

When planning a fumigation of structure containing an aquarium, consider the following:

1. Always have the aquarium owner sign a release of liability.

2. The best option is to remove the aquarium. Nonetheless, any disturbance of the aquarium may result in mortality of display organisms, and the fumigator should not be held responsible.

3. If the aquarium is too large to move, another option is to remove the display organisms, including "live" rocks, plants, and biological filter media. Have these organisms maintained at another location during the fumigation, such as a store specializing in aquarium displays. The water in the tank should be replaced before returning these organism after the fumigation to eliminate potential claims that Vikane contaminated the water.

4. Another option is to have the aquarium contents remain within the fumigated structure following the precautions below.

The water temperature in the tank needs to be controlled. In warm temperatures, placing ice cubes ina plastic bag can help reduce the temperature of the tank water. Never float ice cubes in an aquarium without enclosing them in plastic. If the aquarium has a chiller unit, leave it operating during the fumigation.

The entire tank and all peripheral pumps and filters should be sealed under airtight plastic sheeting. This would include protein skimmers, commonly found in salt water tanks. These skimmers use a pump to mix air bubbles with water drawn from the surface of the tank to create a foam for "skimming" off through a venture column.

It might be necessary to use a hose (e.g. ¼ inch ID)attached to a pump outside of the fumigated structure to slowly release fresh air into the airspace where the aquarium is located. This intake hose should be placed at a reason able distance away from tent seams and ground seals of the fumigated structure to ensure fresh air intake. An exhaust hose vented from the aquarium airspace to outside the fumigated structure may also be necessary. The purpose is to provide fresh air exchange during the fumigation in the aquarium airspace.

The fumigator should work with the owner/occupants to determine the best way to protect the aquarium organisms during the structural fumigation.