

SHOWCASE

Atlantic Veterinary College installs BioBubble unit for fish disease research

The Atlantic Veterinary College (AVC) at the University of Prince Edward Island has recently installed a new quarantine system, a BioBubble®, that will be used in fish disease research. The BioBubble, manufactured by the American Company, BioBubble Inc. from Fort Collins, Colorado, has been used in the past for research on laboratory animals such as rats and mice. This will be the first time the BioBubble will be used in a water environment.

The new unit at the AVC is portable and is equipped with a 100% water recirculation system so that it can be used for research on fish diseases. The system is modular and additional modules can be added as required. Being portable, a BioBubble can be used in any space with electrical power and still meet the specific requirements of research. The BioBubble enclosures are either positive pressure exclusion environments or negative pressure inclusion environments. The units can be operated as clean rooms to protect the animals from pathogens originating from external sources, or as dirty rooms to contain any pathogens that could pose a threat to healthy fish stocks. The unit installed at AVC, which is shown in the picture, is a negative inclusion environment, but can be easily converted by staff on site to a positive inclusion environment.

"The BioBubble has been used for research on mammalian diseases for some time and we have some units at AVC used for that purpose," said Dr. Gerry Johnson, who specializes in aquaculture research. Dr. Johnson, a faculty member at AVC since 1986, who directed the design of



Shown in the new aquatic BioBubble at AVC are from the left; Wayne Petley, Manager AVC Aquatic Animal Facilities; Dr. Gerry Johnson, AVC Faculty member and Aquaculture Research Specialist; and Dr. Fred Kibenge, AVC Faculty member and Project Leader for the Center for Marine Aquatic Research (CMAR).

the new unit for fish disease research added "the new BioBubble will allow us to work safely on any known or unknown fish diseases as the system will offer biocontainment for any infectious agent, even as small as a virus. Air is filtered with high efficiency particulate air (HEPA) filters. The tanks, filtration and pumps for the water recirculation system were developed and installed by Waterline Limited, a PEI based company, and Howard's Water Treatment, a Nova Scotia Company. Once water and equipment are put in the system, they remain there until sterilized before removal."

"We initiated our first fish disease research project with the BioBubble unit, an ISA pathogen study, in September of 2003, and the unit is now being used by the Lobster Science Center for a different study," said Dr. Fred Kibenge, the Project Leader for the Center for Marine Aquatic

Research (CMAR) at the AVC. "We are very satisfied with the performance of the unit to this time. We are, however, developing continuous monitoring of temperature, water flow, water, and air quality in the unit to increase our comfort level with the bio security provided especially when used for long term research."

The biocontainment system for fish disease research at AVC cost about \$100,000 including water recirculation, electronic monitoring, and the BioBubble. Funding for the system was provided under the CMAR that has been established at UPEI with funding from the Canada Foundation for Innovation, ACOA and the University of Prince Edward Island.

For more information on the BioBubble, persons should contact BioBubble Inc. The web site for the company is www.biobubble.com or email: bb@biobubble.com.

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