aquabioLab™
Instruments

Une division de:
A division of:
aquabiotech
Coaticook, QC
CANADA J1A 2S5
Ph: (819) 849-4440
Toll free: 888-933-0303 (CND)
Email: info@aquabiotech.ca
Web site: www.aquabiolab.com

NEW STAND-ALONE, POLYVALENT AQUABIOLAB SYSTEM FOR SHELLFISH HOLDING

The state of the art!

This **polyvalent** system can economically hold up to 250 kg of shellfish. Chilling and pumping costs are minimised through highly recycled water (close to 100% by volume per day), and clever 2-circuit design. It is an extremely reliable and flexible system for the simplest to the most advanced shellfish holding configurations.

Figure 1: Holding unit with stacked totes for short term holding. Unit dimensions with insulation panels: 230 x 170 cm H: 247 cm

Rapidly stow shellfish right upon its arrival in the laboratory

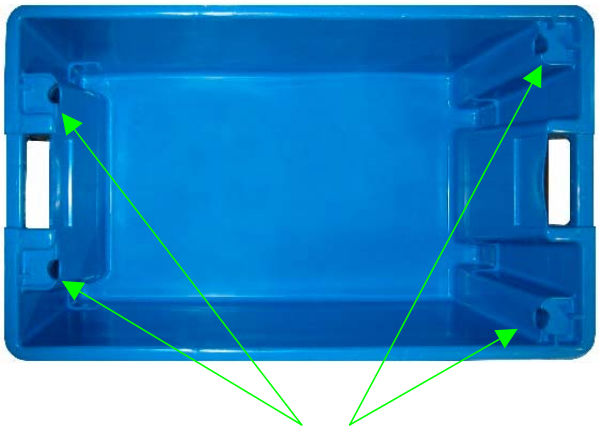
Live lobster in North America is commonly shipped in FlapNest™ plastic crates stacked via refrigerated Lories. At the reception site, these crates (40 kg capacity - 90 lb) are floated in concrete pools for purging, keeping handling to a minimal. This aquabioLab lobster system allows reproducing this process on a small scale. Up to two FlapNest plastic crates can be floated in each system. Our recent tub model offers ample space to easily handle the crates in and out of the tub. Here is an excellent opportunity to assess these popular crates.

Figure 1: Flap-Nest Floating Crate

Note that rapidly filling a closed system with non-purged lobster normally results in soaring ammonia levels. This can be prevented by adding lobster gradually to the system (e.g., one 40 Kg crate at the time) to let the biofilter adapt. The other option is to take advantage of the ability of most of our aquabioLab units to automatically control the water flushing rate. By briefly raising the Water Exchange Rate setting on the Enviro-Monitron, a solenoid valve will automatically let fresh seawater in at that new flushing rate. This feature also facilitates water requirements management for the laboratory.

Simulate state-of-the-art short term holding configurations

If the goal is to keep the animals alive for a few days to a few weeks while taking advantage of the vertical space, stacked fish totes is another option. We've selected these totes for their convenient moulded-in overflows that keep the animals submerged as swiftly flowing water flows from one tote to the next below through calibrated holes bore that we bore on the bottom. With up to 25 kg of non fed shellfish per tote, the 250 kg holding capacity is reached with two stacks of five totes. This compact way of storing lobster for a short term period is gaining recognition in the industry.



Fish tote with moulded-in overflows

Test long-term contention

Testing long-term contention (up to six months) on high quality lobster can be done with this unit. The original IPL trays with movable dividers, combined with the maintenance of optimal environmental conditions for long term holding (long-term holding requires water chilled to 2-5°C), allow conducting these tests on shellfish.

Figure 1: Trays in cabinet-like assembly

Easy access to each animal

The animals in each tray are isolated in individual compartments, a creative arrangement which protects them from attacking one another. Movable plastic inserts, called dividers, are custom located to accommodate a wide variety of lobster sizes and storage densities. Each tray has two moulded-in overflows that keep the animals in just enough water to be submerged (9 to11 cm, depending on water flow). The water spills from one level of trays down to the next below, travels through the dividers to the overflow located at the other end, spills to the tray below, and so on. Water is then recycled through our Water REcycling with Biofiltration (REBF) module.

Trays can be nested in a pile over the fibreglass grid. Or, they can be stacked up in cabinet-like assemblies. They are then pulled open like drawers, allowing for easy access to each lobster. Depending on lobster size and wanted density, a tray can hold between 6 and 36 individuals (Table 1).

Trays in our aquaBiota Habitats have calibrated holes strategically drilled across the floor that create a micro-current around and under each animal. With 15 to 30 water exchange rate per hour in every tray, each animal is sure to bathe in constant flow of high quality and well-oxygenated water.

Figure 1 : Plastic trays with dividers

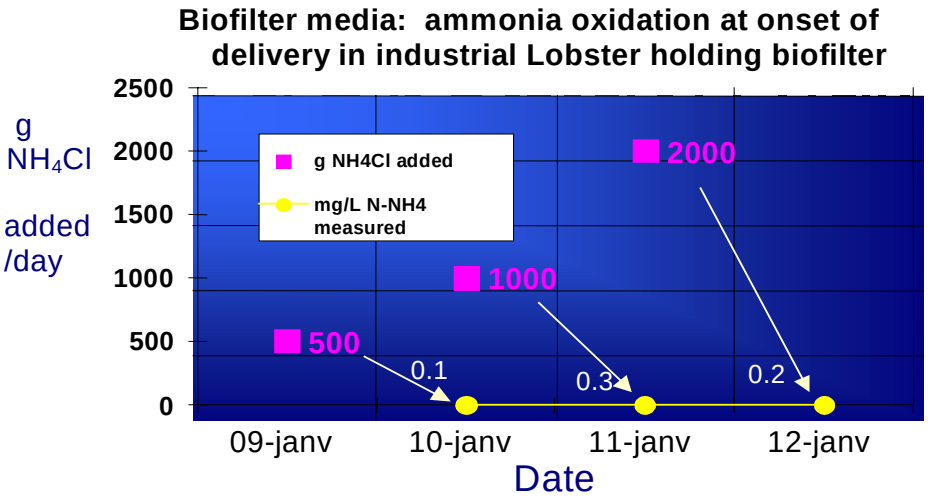
Figure 1: Nested trays (picture taken from an industrial scale system)

Table 1 Capacity of each tray for grated lobster

408 gm - 490 gm	36 pcs per tray (Canadians)
491 gm - 500 gm	32 pcs per tray (Chix)
501 gm - 600 gm	30 pcs per tray (Quarters)
601 gm-726 gm	24 pcs per tray (Halves)
727 gm-860 gm	20 pcs per tray (Three Quarters)
861 gm-998 gm	20 pcs per tray (Selects)
999 gm -1,360 gm	12 pcs per tray (2 3's)
1,362 gm - 1,814 gm	12 pcs per tray (3 4's)
1,815 gm - 2,700 gm	6 pcs per tray (Jumbos)

Gain confidence on biofilter's nitrifying capability

The biofilter is delivered at your site coated with an active population of nitrifying bacteria. This long process (two to three months) is performed at our plant before delivery. That saves you months of technician analytical time. You will learn our procedure for feeding the biofilter with ammonia (included) making sure its nitrifying bacterial population has recovered from transit, and has adapted to your operating conditions. With this one to two weeks process you will gain confidence on the biofilter's capacity to fully keep ammonia and nitrite levels down, even in cold seawater, once lobster is added. Our operating instruction manual also provides maintenance instructions and tips on water quality guidelines for shellfish holding, biofilter re-activation and storage, and lobster quality management guidelines.



Chiller installation

To achieve the low temperatures prescribed for long-term holding (2-5°C), the unit should be located in a chilled room (air temperature about 5°C above water temperature), or in a very well insulated small room.
The unit's air-cooled chiller, which is on a separate pallet, should be ducted to expel hot air outside the room, or located in an adjacent room. Alternatively, a water-cooled chiller can be provided at no added cost. Should the conditions described above be difficult to meet, insulated panels can be added in option to enclose the housing section of the unit (tub and cabinet-like structure). With these panels, the water temperature will drop down to 2°C in a room at 20°C. This is the best option for a single unit.

Figure 2: REBF Module with heat generating pallet (chiller & pumps) and water filtration pallet.

Save on installation costs and start-up time

This completely self-contained unit is to be set on a concrete floor (should be at level). The REBF module being on plastic pallets is simple and straight forward to install by a layperson. A step-by step Installation Manual guides the operator for setting up the unit in a few hours (on-site training & commissioning is available in option). To commission the Shellfish AquaLab Habitat, all which is left to do is to hire an electrician to make the required electrical connections, fill the closed system with seawater, and begin the biofilter re-activation process.

A dedicated research tool with the Enviro-Monitron

All our Lobster holding units are **integrated with the necessary control and monitoring hardware and software**. This conveys 'intelligence' to the system in ways that add considerable peace of mind, and truly enhance the environmental management capability of the unit.

Housed into a 100% polycarbonate non-corrosive NEMA 4-X (humidity and splash resistant) enclosure, the Enviro-Monitron controls the injection of pure oxygen keeping DO levels at near saturation in the water. The integrated oxygen saturator increases the oxygen transfer into the water. You simply need to link the saturator inlet tubing to a source of DO enriched air and locate the high quality Oxygard DO probe (included) in the sump. Oxygen generators can be provided in option. The Enviro-Monitron will also keep an eye on water flow (digital flow meter included), assuring that lobster never fall out of water, without you knowing it. Alarms are generated if any of these set points are off limits. Further, the water flow through the chiller is automatically interrupted if it falls below a certain safe value, thus protecting the equipment from possible mechanical failure.

Photoperiod control capabilities

The Enviro-Monitron features all the photoperiod control capabilities of the SunMatch Astral Photoperiod controller (for Light Emitting Diodes only). In other word, it simulate dawn and dusk, can reproduce the seasonal variations in day length for any geographical position, modify these natural cycles, adjust light intensity during the day, and can be turned on/off at pre-set times. An optional LED lighting circuit can be added to the unit. Finally, the Enviro-Monitron can monitor pH and salinity. If you wish to control these parameters, just let us know and we will configure the Monitron accordingly (in option).

Wireless network communication

— By means of its radio-frequency module or RS485 cable, the NW-1500 Thermo-Monitron can be integrated into the laboratory Monitron network as seamlessly as any other member of the Monitron family. For instance, the optional Monitron Network allows the operator to follow the unit's water parameters via the Internet and to receive detailed alarms on an [0]alpha-numeric pager.

Call us toll free at 888-933-0303 (Canada only) or 819-849-4440 for more information!