Improved maintenance protocol for corals (Lophelia pertusa)

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1. Collection of coral (*Lophelia pertusa*) fragments from the Mingulay reef complex (western Scotland) using a modified Van Veen grab with video camera and electro-magnet to prevent false grab release. An ROV with manipulator arm would work equally well.
2. At least 6-10 grabs taken from different mother colonies collected from a depth of 120-170 m. The coral is kept separated in labeled autoclave baskets in a "coral hotel". This is a portable aquarium (volume 500L) with a chiller unit (Teco TR15) to maintained temperature at ~8 °C, and a filtration unit (Eheim Classic 350) to prevent loss of water quality whilst at sea.
3. In the lab the coral fragments are broken up manually or with pliers and the apical sections of branches (nubbins) are removed (2-300 fragments from a typical field campaign).
4. The nubbins are cable tied to a 1ml plastic pipette tip (4 cm high) embedded in a concrete circular stand (diameter 3cm)
5. The attached nubbins are labeled (on the circular stand) with a unique identifier.
6. The coral nubbins are housed in 25L aquaria connected to a semi-continuous flow through system. The total volume of the flow-through system is 450L. With 200ml/min water exchange the system replaces the tank contents in less than 2 days.
7. Water movement within the 25L aquaria is generated by a power head/ wave generator.
8. Incoming seawater is filtered and temperature maintained at 8-9° C.
9. Optimal salinity is 32-35‰.
10. pH in the aquaria should be monitored and range between 8.15 and 7.95 for optimal calcification and growth.
11. Nubbins are kept in the dark at all times to prevent algal growth in tanks except during feeding, cleaning or maintenance of aquaria systems.
12. The nubbins should be fed 4 times a week with a mixture of Pacific krill and red plankton (*Calanus* sp.) supplied in frozen blister packs. Water flow in the aquaria is reduced during feeding, and any excess food siphoned out of the tank.
13. Coral nubbin growth can be measured using a buoyant weight technique.
14. To date we have not observed any reproduction events.