

**Report for MASTS Small Grant Award Scheme:  
Installation of a common marine algal culture facility**



**UNIVERSITY OF  
STIRLING**

Support by MASTS was requested for the purchase and set-up of an apparatus permitting the small-to-medium scale culture of marine algae at the Institute of Aquaculture, University of Stirling.

Components and design of the culture system: The simple modular semi-static chemostat system consists of 5 L conical flasks serving as culture chambers, which are placed in front of a light panel. A flow of sterile air is provided by a multichannel pump and ensures mixing of chamber content. The system operates in a semistatic fashion, where fresh media is added to a given culture once or several times a week followed by the withdrawal of an equivalent culture volume. Sterile algal growth media is provided from an autoclavable carboy situated above the culture chambers. Media flow is driven by gravity and controlled by clamps. The system can be extended at moderate costs by the addition of further flasks and light panels.

Benefits of culture system: The facility is open to all IoA staff and collaborators, and will be used for BSc and MSc student projects in the 2014/2015 cohorts. Among offered project titles are ecotoxicological investigations with the marine copepod *Tisbe battagliai*, which require algae (e.g. *Rhinomonas reticulata*) as food. Further applications of the culture system will include research projects on the food requirements of fish larvae involving both the direct feeding of algae and the use of algae to produce zooplankton.

Acknowledgements: We thank of Dr Tom Little (University of Edinburgh) and Dr Stuart Auld (University of Stirling) for advising on chemostat design.

