

Effect of emersion on soft-shell clam,



Blue mussels (*Mytilus edulis*) and soft-shell clams (*Mya arenaria*) are both aquaculture species in east coast of Canada and US shellfish farmers take advantage of the byssal threads production of mussels for suspension culture and the burrowing behaviour of soft-shell clams for enhancement practices. It is important that these animals attach and burrow efficiently to minimize losses during rearing. The aim of this work was to study two potential vitality indices on mussels (23.6 ± 0.1 mm) and clams (22.6 ± 0.1 mm) seeds following various periods of emersion: attachment strength of *Mytilus edulis* and burrowing ability of *Mya arenaria*. The effect of emersion on energy content (proteins, lipids, glycogen) was also examined. We observed no significant decrease in the attachment strength of mussels after air exposure for 78 h or in the burrowing efficiency of soft-shell clams after 54 h. Air exposure had no effect on different lipid classes, proteins, or glycogen content in either mussel or clam tissues. The stressful emersion event induced in our study may not have been high enough to induce detectable behavioural responses. This can be explained by the bivalves' ability to adapt their metabolism to minimize activity during air exposure. In doing so, they do not consume their energy reserves, which are then still available when specimens are reimmersed. Thus mussels are able to efficiently produce byssal threads and clams to burrow into sediments as soon as they are back in the water.

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