Poster Presentation P38

VARIATION IN METABOLIC COST OF EMBRYONIC DEVELOPMENT OF THE FRESHWATER SNAIL, PHYSA SP.

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Embryos of the freshwater snail Physa sp. complete their development within an egg capsule and hatch as juveniles. To estimate the energetic cost of development, oxygen consumption rates of egg masses were monitored from deposition to hatching. Oxygen consumption increased during development ($r2=0.173$, $p<0.01$), but there was no consistent pattern. A negative correlation existed ($r=-0.984$, $p<0.01$) between hatching time and oxygen consumption, and a positive correlation existed ($r=0.903$, $p<0.05$) between the rate of oxygen consumption and total energy expended. Masses with longer times to hatching utilize less energy than masses with shorter times to hatching. If egg capsules are initially identical, then embryos with higher metabolic rates and shorter development times will be smaller at hatching than individuals with lower rates of energy consumption. If capsule size varies, then differences in metabolism may result in different hatching times, but a common juvenile size. The effects of these differences on juvenile survivorship in the field are unknown.