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Effect of methylmercury on feeding behaviour and social interactions in glass eels

Presentation: Poster

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Abstract

The European eel (*Anguilla anguilla*) life cycle spans over a large area and through various ecosystems from the Sargasso Sea, where spawning occurs, to the European continental shelf, where larvae undergo their metamorphosis into glass eel. At this stage, glass eels migrate up estuaries to join rivers for a long period of growth. Most glass eels feed little or not at all during estuarine migration but there is some evidence that they restart feeding at stages VIA2-VIA3 in the Adour estuary, when the temperature reaches 10 °C. To our knowledge, feeding resumption and the effects of environmental conditions on this resumption are far from being understood. Estuaries are often exposed to anthropogenic discharges due to extensive urban development and can represent a stressful aquatic ecosystem. For example, the Adour estuary exhibits relatively high sedimentary concentrations of MeHg but the effect of contaminant on glass eels feeding behavior have never been investigated. To address this question, we studied the effect of methylmercury on food resumption and agonistic behaviour in glass eels. 40 tagged glass eels were exposed during seven days to a concentrations of 100 or 1000ng/L of MeHg, while the same amount of fish was kept in freshwater for control. Then, eight glass eels per condition were killed for MeHg concentration analyses and 32 were transferred into aquaria filled with freshwater (8 fishes per aquaria, 3 aquaria per condition), in order to observe their social interactions and feeding resumption. At the end of the experiment, metabolism of all fish was evaluated by measuring oxygen consumption in order to assess relationships between MeHg concentration, social interactions, feeding behaviour and metabolism.

Key words: glass eel, feeding behaviour, methylmercury, metabolism