Title: Biochemical characterization of six commercially marine bivalves species from the Portuguese coast

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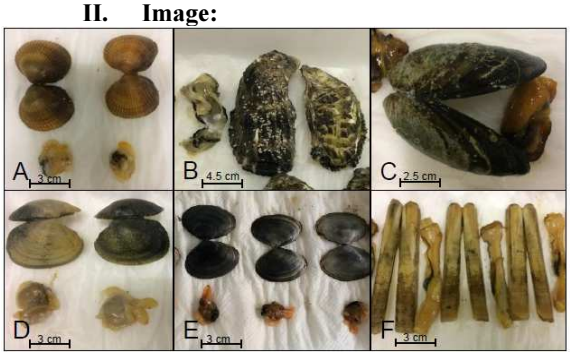
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Keywords: Bivalves, Economic value, Biochemical composition, Nutritional value, Mondego estuary, Ria Formosa lagoon

I. Abstract (up to 250 words)

Marine bivalves are highly appreciated by humans, representing an important economic value with an increasing demand. Aquaculture is a promising solution to overcome this demand. Aquaculture development has a stronger manifestation in some Asiatic, American, and European countries, like Portugal. In this study, six commercially important species (*Cerastoderma edule* (A), *Crassostrea gigas* (B), *Mytilus galloprovincialis* (C), *Ruditapes decussatus* (D), *Scrobicularia plana* (E) and *Solen marginatus* (F)) were sampled in areas of harvest and established aquaculture production in Portugal, the Mondego estuary and the Ria Formosa lagoon, in winter 2016 and summer 2017. These samples were used to: 1) determine the biochemical composition for total protein content, fatty acid (FA) and carbohydrate profiles, 2) identify potential spatial and seasonal variations in the biochemical composition, and 3) assess feeding behaviour of the bivalve species in both seasons and study areas. All species presented higher total protein content, followed by diverse FA content, specially DHA and EPA, and glucose and glycogen as the main sugar and polysaccharide, respectively. Omnivory was confirmed in all bivalve species, with only *S. marginatus* presenting an exclusive herbivorous behaviour in summer. *M. galloprovincialis* and *R. decussatus* showed the highest nutritional value in the Mondego estuary, more noticeable in winter. In Ria Formosa, *C. edule* and *R. decussatus* presented the highest nutritional value, while *C. gigas* exhibited higher nutritive value in summer. These species are pointed out as the best choices for a healthy human diet and confirmed as a reliable choice for harvesting and production in aquacultures.

II. Image:



III. Reference:

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IV. Biography:

Ana Marta Gonçalves completed her PhD in 2011 at Coimbra University, Portugal. She is a researcher in Coimbra University and collaborator in Aveiro University. She is Board member of the Research Unit MARE, representative of MARE in MARS and representative (substitute) at General Assembly in EuroMarine network. AMG is Vice-Chair of SETAC Europe Education Committee and member of the Scientific Council of the Institute for Interdisciplinary Research–Coimbra University. She has published 38 papers in SCI journals and 13 book chapters and has been serving as an editorial board member of Ecological Indicators and Integrated Environmental Assessment and Management Journals.

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Session name/ number: Coastal and Marine Aquaculture / Track 6
Category: Oral presentation