



IMMR'12

INTERNATIONAL MEETING ON MARINE RESOURCES

24-25 MAY 2012 » PENICHE · PORTUGAL

Auditório da Escola Superior de Turismo e Tecnologia do Mar

 CERTIFICATE OF PARTICIPATION 

Poster Communication

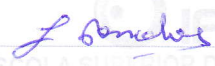
This is to certify that,

Jaime Miguel Costa Aníbal

*attended to the International Meeting on Marine Resources 2012 (IMMR'12) held at Peniche (24th-25th May), Portugal and made an **poster communication** during the conference.*

Peniche, May, 25th, 2012

On behalf of the organizers,


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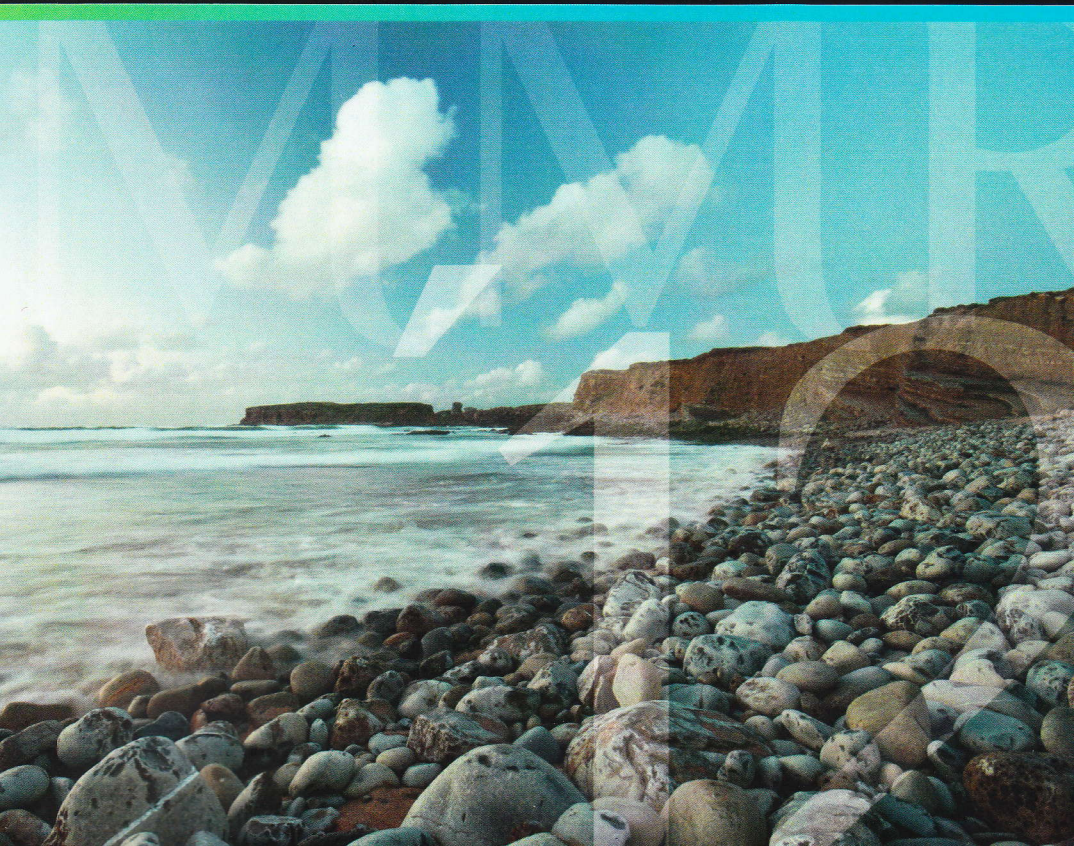
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BOOK OF ABSTRACTS



» Is total volatile basic nitrogen (TVB-N) a reliable spoilage indicator for the deep water shrimp (*Parapenaeus longirostris*)?

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Seafood is highly perishable due to post-mortem microbial activity and/or spoilage-specific chemical reactions and thus has limited shelf-life. Moreover, the assessment of freshness is one of the most important issues in seafood quality. In the European Union, total volatile basic nitrogen (TVB-N) is one of the regulated methods for the control of fishery products (cf. Regulations (EC) No. 854/2004, No. 2074/2005 and 1022/2008); besides organoleptic assessment/sensory analysis it is the only that provides timely results. This study addressed the reliability of using TVB-N as a spoilage indicator for deep water shrimp (*Parapenaeus longirostris*). Two experiments were conducted during which samples were regularly taken to determine TVB-N content using the microdiffusion method of Conway. In the first experiment, fresh shrimp stored at 3 ± 2 °C for up to 23 days were subjected to three storage procedures: [1] in plastic box covered with ice (renewed every 8-12 h) – “commercial/control treatment”; [2] in perforated plastic box covered with ice; melted ice/water was collected and analysed and new ice added to samples; [3] samples inside a box without ice. The changes in TVB-N content were rather different: in [1] TVB-N content in shrimp decreased steadily with time; in [2] shrimp’s TVB-N remained constant, but melted ice/water displayed increasing levels of dissolved TVB-N; and in [3] the TVB-N content of shrimp progressed exponentially. Seemingly, volatile compounds originated from spoilage are rinsed/leached by melting ice/water during storage and/or transport and do not reflect spoilage dynamics. In a second, follow-up experiment, samples of shrimp were stored, without ice, at five different temperatures (5, 10, 15, 20 and 25 °C) for up to 76 h. Therein, exponential kinetics of TVB-N production was observed for all temperatures tested. Moreover, the rate of TVB-N production was linearly and positively related to storage temperature.

Keywords Deep Water Shrimp · Freshness · Reliability · Spoilage · TVB-N