

# THE LAST MEAL FOR BIVALVES AND THE FIRST CHOICE FOR CONSUMERS: MICROENCAPSULATED FORTIFICATION ON THE DEPURATION PROCESS



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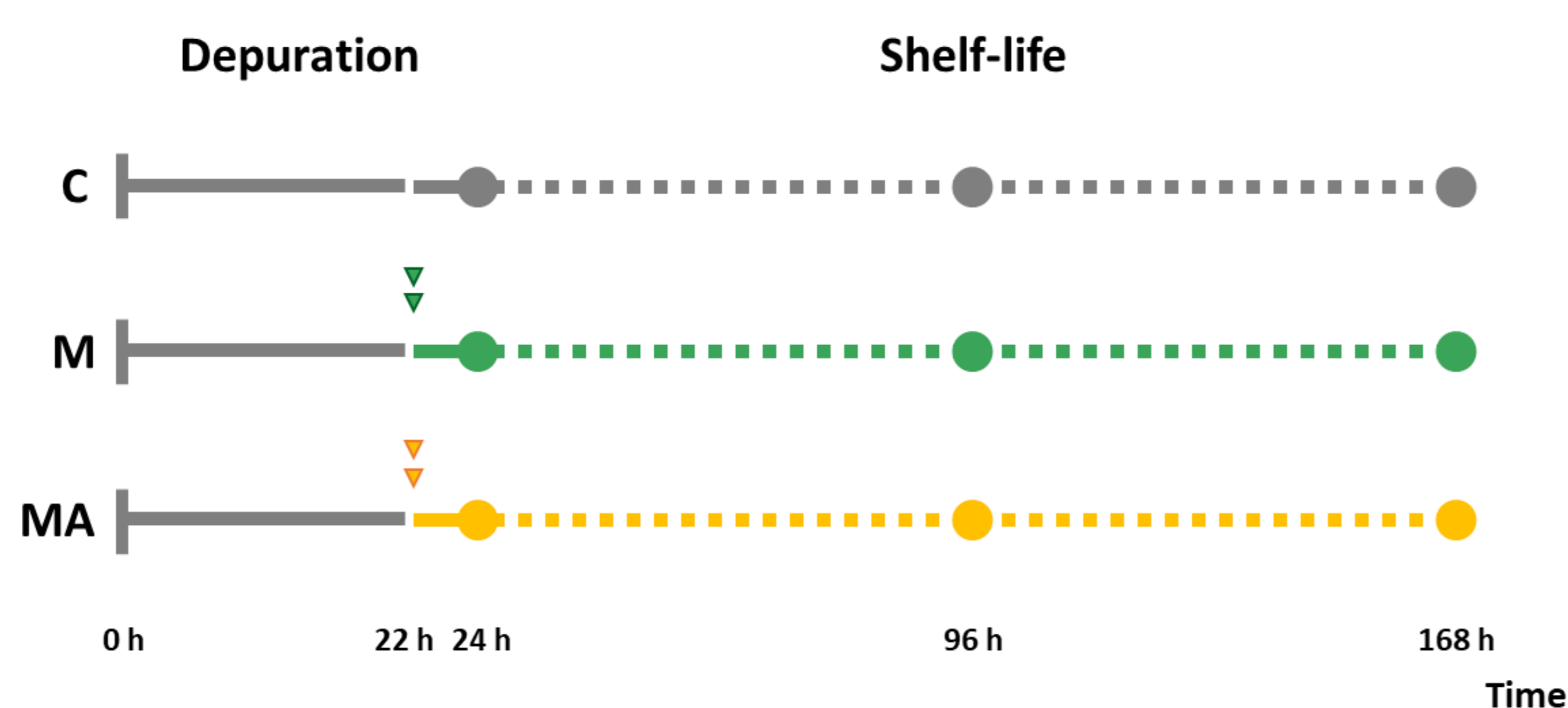
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Micronutrient deficiency affects more than two billion people. One way to meet the recommended daily intake is to provide **fortified foods**, and bivalves, as naturally **healthy and nutritious** food sources, are an excellent option.

A nutritional intervention on the **depuration process** offer a unique opportunity to incorporate functional components, modifying and customizing the nutritional contents, providing products with **added health benefits**.



Evaluate whether food supply associated with the depuration of the clam *Ruditapes decussatus* can contribute to reducing food losses and improving product quality.



▽▽ Food introduction (13.3 mg/L)

■ C - Control, with no feed supply

■ M - Microencapsulated diet, with *Nannochloropsis* sp. in 40 µm diameter particles

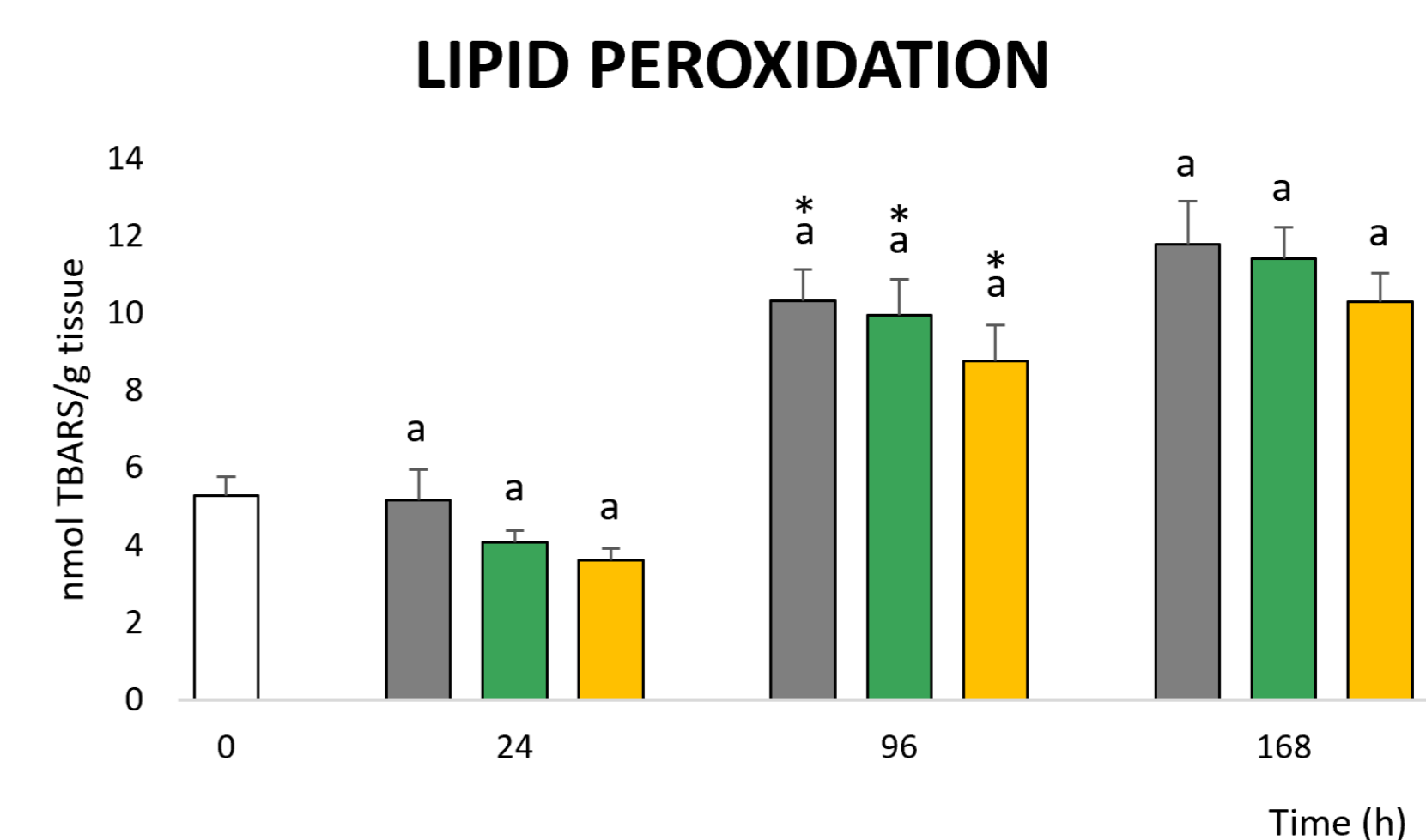
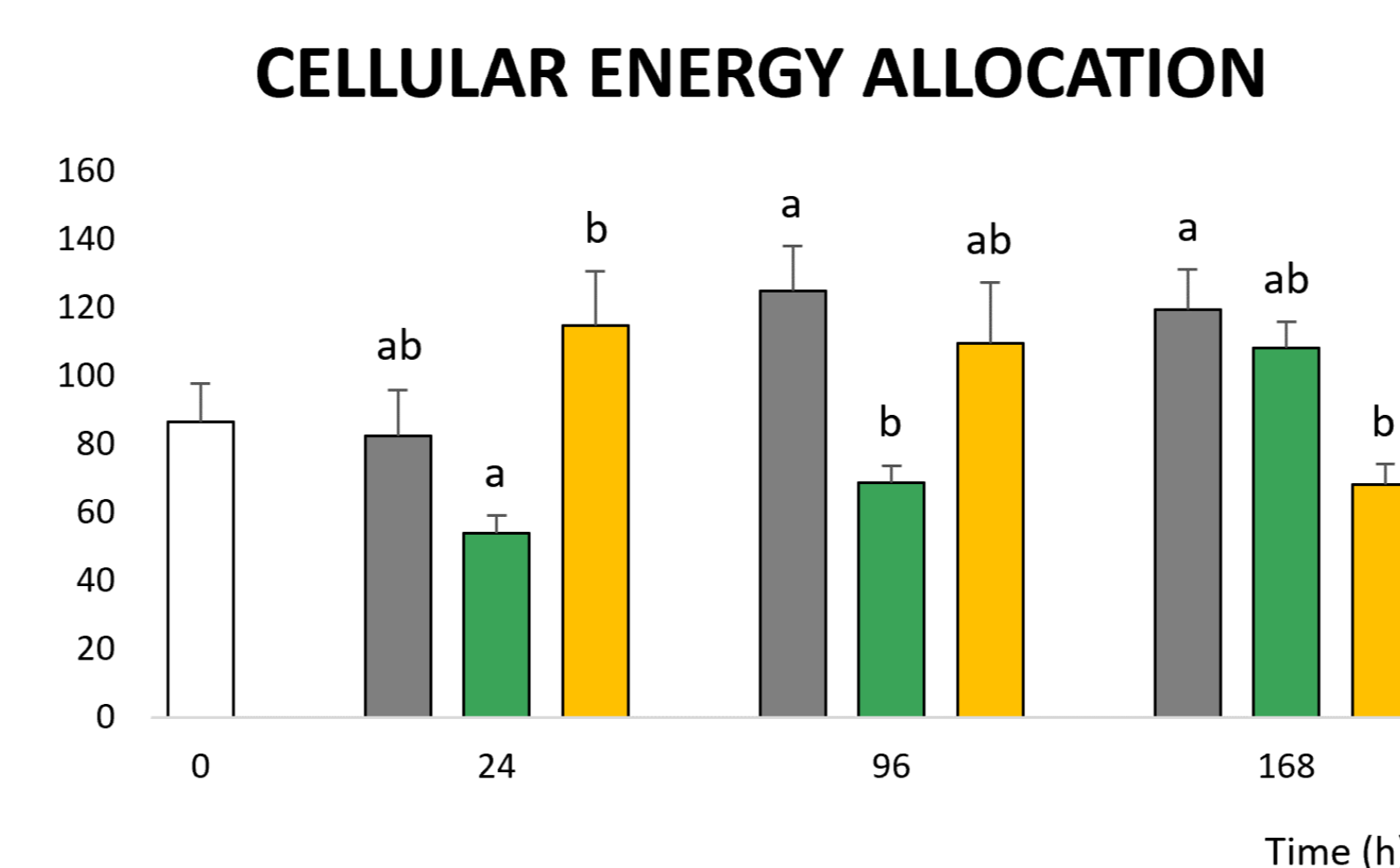
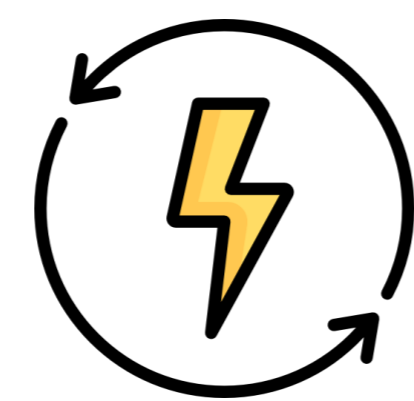
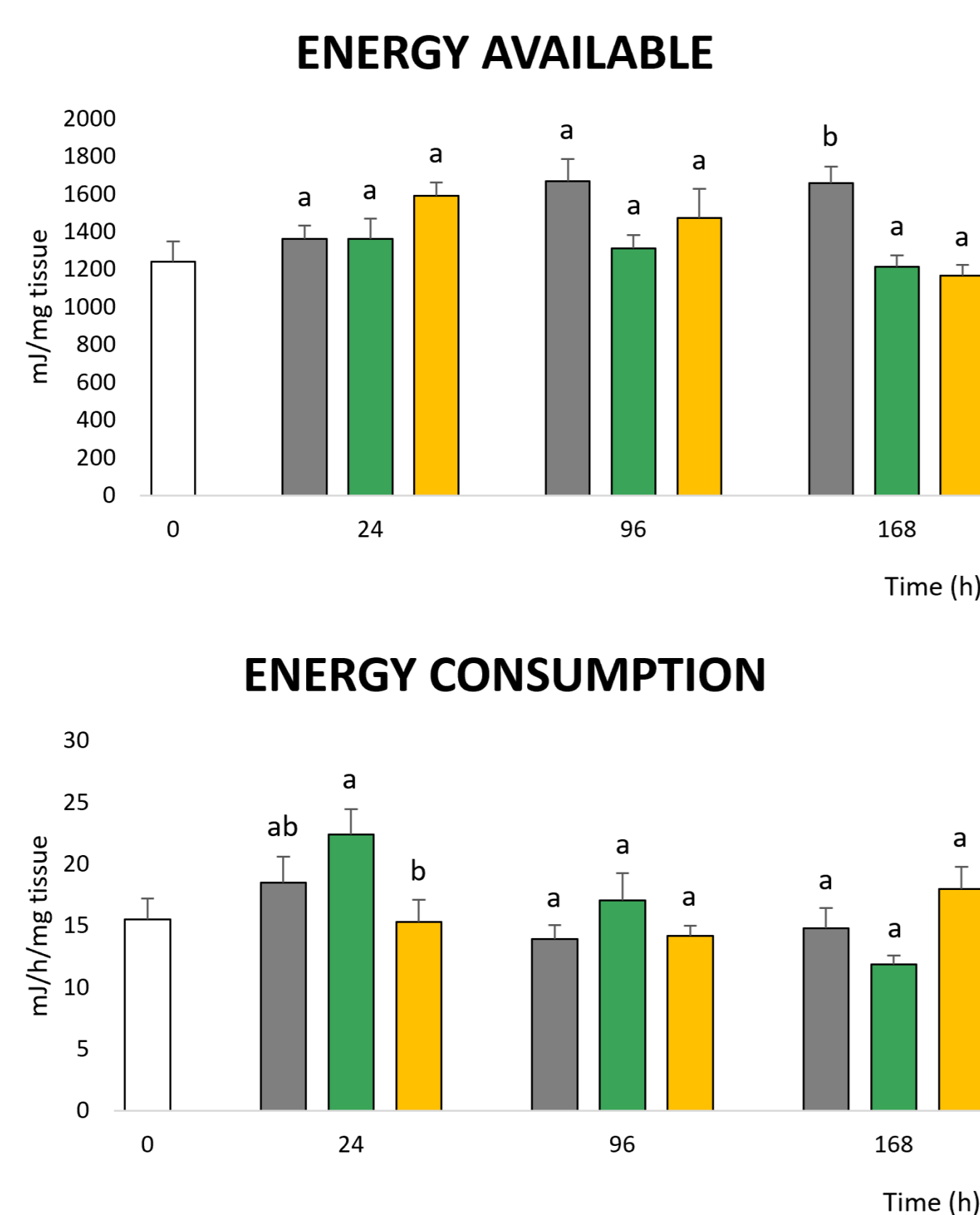
■ MA - Microencapsulated diet (M) enriched with Antioxidants (vitamins C and E)



Ria Formosa, Olhão, Portugal.

Three-step experiments were carried out, with a 24-h depuration, including a 2-h feeding period, and a subsequent shelf-life of 144 h (6 days).

Depuration was performed in recirculated 250-L tanks equipped with a filtration system and a UVc unit.



Mean values (mean ± SE) of Energy available, Energy consumption, Cellular Energy Allocation and Lipid Peroxidation. Statistically significant differences ( $p < 0.05$ ) are presented by (\*) between the corresponding group at the previous sampling moment, and by different letters within each sampling moment.

- ✓ 2-h feeding period has no adverse effects on lipid peroxidation or survival, maintaining the **standards of food quality and safety**, up to 6 days of shelf-life;
- ✓ Energy budget was not affected by the supply of microencapsulated diet (M) at the end of the trial;
- ✓ Results are promising for the incorporation of fortified clams as a complement to a human balanced diet.

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