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BOOK OF ABSTRACTS

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I10. Industrial and Food Microbiology and Biotechnology

P353. Valorisation of marine peptones as alternative growth substrates for lactic acid bacteria

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The increase in discards and by-products resulting from unsustainable fishing practices is a pressing issue, mainly due to the waste of resources it presents. The implementation of measures to valorise these resources, addressed through the development of novel methods for their conversion into value-added products, has thus become a necessity. Fish peptones obtained via hydrolysis of these materials possess well-documented potential, including their use in microbial growth media. They acquire significant importance as alternative growth sources, since growth substrates account for the majority of production costs of microbial cells and fermentation bioproducts. In this work, peptones obtained from ten species of fish discards (divided in three fractions: skin and bones, heads, whole fish) were tested against MRS media in the growth of *Lactobacillus rhamnosus* R11 and *Lactobacillus acidophilus* Ki to ascertain their efficacy as sources of carbon and nitrogen, among other parameters. Growth curves were performed in triplicate, with two aliquots collected at predetermined times. One was used for microbial enumeration, with viable cell numbers determined by the plate count technique (log (CFU)/mL). The other allowed for assessment of metabolic activity, with pH measured before centrifugation and the supernatant used in the quantification of protein (Lowry method) reducing sugars (DNS method) and glucose and organic acids (HPLC). Media containing marine peptones were observed to be more effective than controls for most of the parameters studied. In particular, they showed greater efficacy as sources of carbon and in promotion of microbial growth (supported by 0.2 units lower pH, higher optical density and CFU – one log cycle higher, in some cases) when compared to commercially available MRS medium. It can therefore be concluded that these peptones have potential as alternatives to commercial growth media for lactic acid bacteria.

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