

Production of an ingredient for the formulation of biostimulants by silage of rainbow trout viscera

Main results / outcomes

The optimum conditions for the silage of rainbow trout viscera to get free amino acid-rich protein hydrolysates are pH 4, room temperature and a silage time of 7 days.

Practical recommendations

The obtention of free amino acid-rich protein hydrolysates through the silage of rainbow trout viscera implies a process with a very low economic cost and very easy to perform comparing with enzymatic hydrolysis and autolysis.

The composition of these protein hydrolysates are suitable to use them as ingredients for the formulation of plant biostimulants, as they comply with the legislation.

The use of fish protein hydrolysates in plant biostimulants is presented as an alternative of phosphate rocks and other non-renewable mineral sources in the production of fertilizers.

Using silage for producing fish protein hydrolysates offers the opportunity to recirculate nutrients and can help to contribute to sustainable agricultural practices.

Fish viscera hydrolysates for biostimulant production seem a feasible alternative to fishmeal production in Europe, especially in areas located far from fishmeal plants.



Figure 1: rainbow trout viscera.

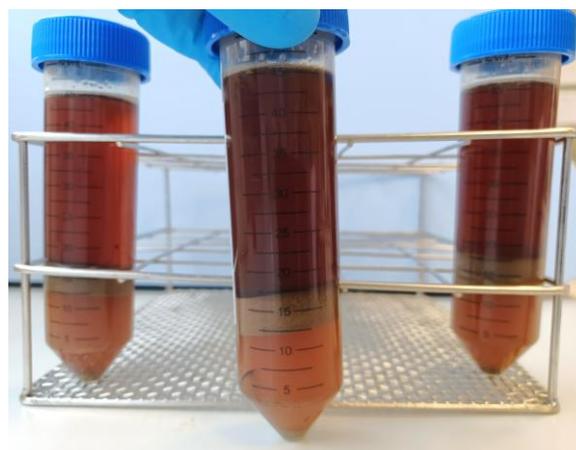


Figure 2: silage samples of viscera after 7 days.

Further information

[https://www.cell.com/heliyon/pdf/S2405-8440\(24\)03061-5.pdf](https://www.cell.com/heliyon/pdf/S2405-8440(24)03061-5.pdf)

About this abstract

Authors: Haizea Domínguez (AZTI), Bruno Iñarra (AZTI) Monica Gutierrez (AZTI) and Carlos Bald (AZTI).

Date: May 2025

SEA2LAND project is a collaborative Innovation Action(IA) funded by the EU in the frame of the Horizon 2020 programme. The project aims to provide solutions to help overcome challenges related to food production, climate change and waste reuse. Based on the circular economy model, SEA2LAND promotes the production of large-scale fertilisers in the EU from own raw materials. This solution is expected to reduce the soil nutrient imbalance in Europe. The project is running from January 2021 to June 2025.

Website: www.sea2landproject.eu



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Producción de ingredientes para la formulación de bioestimulantes a partir del ensilado de vísceras de trucha arcoiris

Resultados principales

Las condiciones óptimas para conseguir hidrolizados ricos en aminoácidos libres mediante el ensilado de vísceras de trucha arcoíris son pH 4, temperatura ambiente y un tiempo de ensillado de 7 días.

Recomendaciones prácticas

La obtención de hidrolizados de proteína ricos en aminoácidos libres a través del ensilado de vísceras de trucha supone un proceso de muy bajo coste y muy fácil de llevar a cabo comparando con la hidrólisis enzimática y la autólisis.

La composición de estos hidrolizados de proteína son adecuados para usarlos como ingredientes en la formulación de bioestimulantes para plantas, ya que cumplen con la legislación.

El uso de hidrolizados de proteína de pescado en bioestimulantes para plantas se presenta como una alternativa a las rocas de fosfato y otras fuentes no renovables de minerales en la producción de fertilizantes.

El uso del ensilado para producir hidrolizados de proteína de pescado ofrece la oportunidad de recircular estos nutrientes y puede contribuir a promover prácticas de agricultura sostenible.

Los hidrolizados de vísceras de pescado para la producción de bioestimulantes parecen una alternativa viable a la producción de harinas de pescado en Europa, especialmente en áreas que se encuentran lejos de las plantas productoras de harinas.



Figura 1: vísceras de trucha arcoíris.

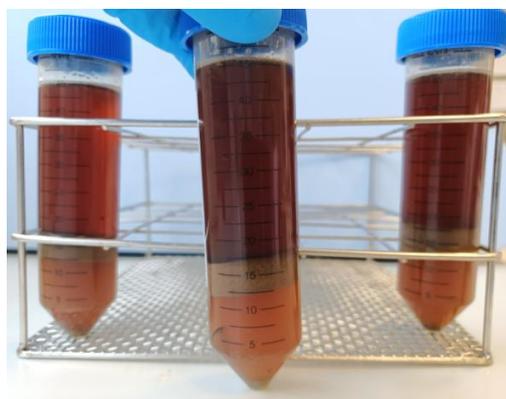


Figura 2: ensilado de vísceras después de 7 días.

Más información

[https://www.cell.com/heliyon/pdf/S2405-8440\(24\)03061-5.pdf](https://www.cell.com/heliyon/pdf/S2405-8440(24)03061-5.pdf)

Acerca de este resumen

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