DeliSoil

Delivering soil improvers from circular food production processes to boost soil health

Practice Abstract 1

Pyrolysis: A Sustainable Solution for Fish-Processing Waste Management and Soil Health Improvement

Summary

Pyrolysis technology offers a valuable solution for managing fish-processing waste, especially fish bones, creating high-value products that enhance agricultural productivity and sustainability. Through heating fish bones in an oxygen-free environment, pyrolysis produces biochar rich in essential minerals like calcium and phosphorous. This biochar not only improves soil structure, water retention, and nutrient availability but also serves as an effective soil amendment that can boost crop yields with fewer inputs like synthetic fertilizers. Additionally, it sequesters carbon, contributing to environmental sustainability by reducing greenhouse gas emissions.

For practitioners, pyrolysis offers cost-effective waste management, turning farm residues into valuable soil amendments. This reduces reliance on synthetic inputs and provides a sustainable solution for boosting long-term productivity. With minimal investment and scalability options, farmers can integrate this technology into their daily operations, gaining both economic and environmental benefits.

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Practical Recommendations

For optimal use, farmers can apply fish-bone biochar to soil as a natural source of calcium and phosphorous. Combining it with compost enhances nutrient availability, supporting better crop yields and soil health.

Needs addressed by the practice

Alleviating challenges in implementing pyrolysis technology, including technical, regulatory and economic issues, and for farmers using biochar, understanding its optimal application, overcoming sourcing, and ensuring cost-effectiveness.

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About DeliSoil

The EU-funded DeliSoil project is a four-year initiative that aims to transform food industry byproducts into safe, sustainable, and tailored soil improvers. This project addresses two pressing challenges: the poor recycling of industrial food processing byproducts and the degradation of soil health.

By harnessing a circular approach, DeliSoil will contribute to improving soil health and productivity, supporting the EU Mission "A Soil Deal for Europe" and the Farm to Fork Strategy, as well as other Circular and Bioeconomy Strategies and Plans.

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