FISH IT
FISH HYDROLYSATE

A Science-Backed Biostimulant for Healthier Soil & Stronger Growth

Fish Hydrolysate presents farmers & growers with a viable and productive option for use on their properties.

We are often asked about the science behind Fish IT and the use of Fish Hydrolysates for use in agriculture and horticulture. Independent research confirms that Fish Hydrolysates are a powerful, natural biostimulant that enhances soil health, crop productivity, and pasture resilience. Scientific studies show that Fish Hydrolysates:

- ➔ **Boost Soil Microbiology & Nutrient Cycling** – Improving root health, nutrient uptake, and water retention for stronger, more resilient plants.
- ➔ **Increase Pasture & Crop Yields** – Supporting better growth, higher-quality forage, and more nutritious fruits and vegetables.
- ➔ **Enhance Stress Resistance** – Helping plants withstand drought, heat, and disease pressure naturally.
- ➔ **Reduce Dependence on Synthetic Fertilizers** – Providing a sustainable, eco-friendly alternative for long-term soil and farm health.

Where's the science? Here's the science.

What follows are a review of two scientific documents that studied the impacts and benefits of Fish Hydrolysates in agriculture and horticulture. These documents are as follows: (Use the QR codes to the right to link to the original papers.)

2020 *Molecules by MDPI: Fish By-Product Use as Biostimulants: An Overview of the Current State of the Art, Including Relevant Legislation and Regulations within the EU and USA*

2023 *International Journal of Molecular Sciences: Biostimulant Properties of Protein Hydrolysates: Recent Advances and Future Challenges*

We have summarised these documents to take out the unnecessary detail and focus on the outcomes and benefits that can be expected by users of Fish Hydrolysates. Each section is referenced to the document from which the information or conclusion/ outcome is found enabling readers to review these documents for themselves if they wish.

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Paper 1.

Molecules by MDPI: Fish By-Product Use as Biostimulants: An Overview of the Current State of the Art, Including Relevant Legislation and Regulations within the EU and USA - 2020.

General Benefits of Fish Hydrolysates as Biostimulants

- Fish Hydrolysates are rich in **amino acids, peptides, and bioactive compounds** that promote **plant growth, nutrient uptake, and stress tolerance** (p. 6).
- They **enhance soil microbial activity**, improving nutrient cycling and plant health (p. 4).
- Fish Hydrolysates **stimulate root and shoot growth,** increasing crop productivity (p. 7).
- They provide a **sustainable alternative to synthetic fertilizers,** aligning with sustainable and regenerative farming (p. 3).

Benefits for Dairy Farming (Pasture & Forage Crops)

Dairy farming relies on high-quality pasture and forage to support animal nutrition and milk production.

Improves Soil Health & Nutrient Availability

- Fish Hydrolysates increase microbial diversity, which enhances nutrient availability (nutrient cycling) for plants (p. 5).
- They help unlock bound nutrients in the soil, such as nitrogen and phosphorus (p. 6).

Increases Forage Yield & Quality

- Fish Hydrolysates stimulate stronger root development, leading to greater nutrient and water uptake (p. 7).
- Improve pasture biomass production, creating higher-quality forage for livestock (p. 8).

Enhances Drought & Stress Tolerance

- Fish Hydrolysates improve soil water retention by strengthening plant root structures, making pastures more resilient to drought (p. 9).
- They promote faster pasture recovery after grazing or adverse weather conditions (p. 7).

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Benefits for Sheep & Beef Farming (Pasture & Finishing Crops)

Sheep and beef farmers rely on productive pasture and high-energy finishing crops for efficient livestock growth

Supports Healthy Pasture Growth & Recovery

- ➔ Fish Hydrolysates enhance soil microbiology, leading to improved pasture establishment and regrowth after grazing (p. 5).
- ➔ Stimulates deeper and more efficient root systems, helping plants withstand grazing pressure (p. 6).

Improves Finishing Crop Performance

- ➔ In brassica and forage crops, Fish Hydrolysates enhance sugar content and nutrient density, improving livestock energy intake (p. 8).
- ➔ Increases biomass production, ensuring greater feed availability for finishing stock (p. 7).

Reduces Input Costs & Enhances Sustainability

- ➔ Fish Hydrolysates improve nutrient efficiency, helping to reduce reliance on synthetic fertilisers (p. 4).
- ➔ Supports regenerative farming practices, improving soil fertility and long-term productivity (p. 3).

Benefits for Horticulture (Fruit, Vegetables & Vineyards)

Horticultural growers benefit from stronger plants, better yields, and improved stress resilience with Fish Hydrolysates.

Boosts Crop Yields & Quality

- ➔ Fish Hydrolysates increase fruit set, size, and quality, leading to higher-value produce (p. 6).
- ➔ They enhance photosynthesis and nutrient absorption, improving flavor, color, and nutritional content (p. 7).

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Benefits for Horticulture (Fruit, Vegetables & Vineyards)

cont.

Enhances Plant Resilience Against Stress & Disease

- ➔ Fish Hydrolysates contain antioxidants and bioactive compounds that protect crops from heat, drought, and salinity stress (p. 8).
- ➔ Strengthens natural plant immunity, making crops more resistant to pests and diseases (p. 9).

Improves Soil Fertility & Microbial Balance

- ➔ Encourages beneficial microbial activity, leading to healthier soils and plants (p. 5).
- ➔ Enhances nutrient retention and efficiency, reducing leaching and runoff issues (p. 6).

Key Takeaways for Fish Hydrolysates from The Molecules by MDPI 2020 Paper

- ➔ Enhances root and shoot development, leading to stronger, healthier crops and pastures (p. 7).
- ➔ Stimulates beneficial soil microbes, improving nutrient cycling and uptake (p. 5).
- ➔ Increases crop resilience to drought, heat, and disease stress (p. 8).
- ➔ Boosts pasture and crop yields, leading to higher farm productivity and better livestock nutrition (p. 6)
- ➔ Supports organic and regenerative farming, helping to reduce chemical inputs and improving soil health (p. 3).

DOWNLOAD THE FULL PAPER BELOW

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Paper 2.

International Journal of Molecular Sciences:
Biostimulant Properties of Protein Hydrolysates: Recent Advances and Future Challenges - 2023.

General Benefits of Fish Hydrolysates as Biostimulants

- ➔ Fish Hydrolysates are rich in **amino acids, peptides, and bioactive compounds** that promote **plant growth, nutrient uptake, and stress tolerance** (p. 6).
- ➔ They **enhance soil microbial activity**, improving nutrient cycling and plant health (p. 4).
- ➔ Fish Hydrolysates **stimulate root and shoot growth,** increasing crop productivity (p. 5).
- ➔ They provide a **sustainable alternative to synthetic fertilizers,** aligning with sustainable and regenerative farming (p. 3).

Benefits for Dairy Farming (Pasture & Forage Crops)

Dairy farming relies on high-quality pasture and forage to support animal nutrition and milk production.

Improves Soil Health & Nutrient Availability

- ➔ Fish Hydrolysates stimulate beneficial soil microbes, helping to release bound nutrients in the soil (p. 4).
- ➔ Enhances nitrogen efficiency, reducing reliance on synthetic fertilizers (p. 5).

Increases Forage Yield & Quality

- ➔ Supports stronger root growth, improving nutrient and water uptake (p. 6).
- ➔ Improves plant biomass production, leading to more nutritious and abundant forage for livestock (p. 5).

Enhances Drought & Stress Tolerance

- ➔ Fish Hydrolysates improve water retention in soil, making pastures more resilient to dry conditions (p. 7).w
- ➔ Helps plants recover from grazing pressure and environmental stress (p. 6).

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Benefits for Sheep & Beef Farming (Pasture & Finishing Crops)

Sheep and beef farmers rely on productive pasture and high-energy finishing crops for efficient livestock growth

Supports Healthy Pasture Growth & Recovery

- ➔ Fish Hydrolysates enhance soil microbial diversity, leading to better pasture establishment and regrowth after grazing (p. 5).
- ➔ Stimulates root elongation, making plants more resilient to drought and overgrazing (p. 6).

Improves Finishing Crop Performance

- ➔ Enhances nutrient uptake and sugar content in crops like turnips, kale, and fodder beet, leading to higher energy feed for livestock (p. 7).
- ➔ Increases biomass production, ensuring greater feed availability (p. 5).

Reduces Input Costs & Enhances Sustainability

- ➔ Helps reduce reliance on synthetic fertilizers, lowering long-term costs (p. 4).
- ➔ Supports regenerative farming practices, improving soil health and nutrient cycling (p. 3).

Benefits for Horticulture (Fruit, Vegetables & Vineyards)

Horticultural growers benefit from enhanced plant growth, stress resilience, and improved crop quality with Fish Hydrolysates.

Boosts Crop Yields & Quality

- ➔ Fish Hydrolysates increase fruit set, size, and taste, leading to higher-value produce (p. 6).
- ➔ They enhance photosynthesis and nutrient absorption, improving flavor, color, and nutritional content (p. 7).

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Benefits for Horticulture (Fruit, Vegetables & Vineyards)

cont.

Enhances Plant Resilience Against Stress & Disease

- ➔ Fish Hydrolysates contain antioxidants and bioactive peptides that protect plants from heat, drought, and disease stress (p. 5).
- ➔ Strengthens natural plant immunity, making crops more resistant to pests and diseases (p. 6).

Improves Soil Fertility & Microbial Balance

- ➔ Encourages beneficial microbial activity, leading to healthier plants (p. 4).
- ➔ Enhances nutrient retention and efficiency, reducing the need for synthetic fertilisers (p. 5).

Key Takeaways for Fish Hydrolysates from IJMS 2020 Paper

- ➔ Enhances root and shoot development, leading to stronger, healthier crops and pastures (p. 5).
- ➔ Stimulates beneficial soil microbes, improving nutrient cycling and uptake (p. 4).
- ➔ Increases crop resilience to drought, heat, and disease stress (p. 6).
- ➔ Boosts pasture and crop yields, leading to higher farm productivity and better livestock nutrition (p. 7)
- ➔ Supports organic and regenerative farming, helping to reduce chemical inputs and improving soil health (p. 3).

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