University of Gdańsk | Technology Transfer Office

Bio-tech

Method for Obtaining a Plant Growth-Stimulating Preparation



About the solution

The invention relates to an innovative method for obtaining a plant growth-stimulating preparation based on aqueous solutions of inorganic salts activated by direct current atmospheric pressure glow discharge (dc-APGD) in contact with a flowing liquid cathode (FLC).

The developed method enables the production of plasma-activated solutions that promote germination and growth of economically important plants, such as Lepidium sativum, Lactuca sativa, and Daucus carota. These plasma-treated solutions contain reactive nitrogen and oxygen species that enhance plant metabolism, accelerate seed germination, and increase plant biomass.

Unlike traditional plasma-activated water systems the dc-APGD continuous flow system ensures stable and efficient activation of mineral salt solutions without the need for chemical reagents or elevated temperatures. The use of simple, inexpensive inorganic and makes the process scalable and environmentally friendly, suitable for agricultural and horticultural applications.

Research Team

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IP Protection

The invention is protected by the Polish Patent Office under Patent No.: **Pat.236377**

Applications

- Agriculture and horticulture
- Greenhouse and hydroponic cultivation
- Production of eco-friendly fertilizers and biostimulants
- Increasing crop yield without chemical growth promoters

Implementation progress

TRL 4 –Technology validated in laboratory conditions

Cooperation opportunities

- Partnership in research and industrial implementation,
- Technology licensing,
- Technology sale.

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