


METHOD FOR ERADICATION OF BACTERIAL PHYTOPATHOGENS

Technology

The proposed technology relies on activation of inorganic salt solutions by the cold atmospheric plasma treatment in order to obtain post-plasma solutions dedicated to neutralization of bacterial plant pathogens. This method involves the use of a flow-through reaction-discharge system, in which cold atmospheric plasma, i.e., a direct current atmospheric pressure glow discharge (dc-APGD), is operated in contact with a flowing liquid electrode, being an aqueous solution of inorganic salts. The produced post-plasma solutions show bacteriostatic or bactericidal qualities depending on the inactivated phytopathogen. Usage of these solutions enables elimination of phytopathogenic cells in an effective and eco-friendly way. The preparation procedure of post-plasma solutions with the use of the offered method is cost-efficient due to simplicity of the system in addition to low cost and common availability of the inorganic salts used. Besides, there is a possibility of adapting the dc-APGD-based reaction-discharge system to the specified customer's needs. Due to disinfecting properties of the post-plasma solutions, they may be not only widely applied as direct antimicrobial agents for effective and environmentally-friendly eradication of bacterial strains, but also as formulations recommended for preventive protection of seeds and agricultural or horticultural fields. Post-plasma solutions may be applied in various ways, i.e., in the form of spraying, fogging or watering. As this treatment is designated both for plants and seeds, it may assure not only active eradication of phytopathogens from agricultural and horticultural yields, but also provide preventive protection of seeds and seedlings (before they are properly sown or planted).

Commercialization opportunities

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- ➔ Partnership for further research and commercialization
 - ➔ Licensing agreement
 - ➔ Transfer of ownership

IP Status



The invention has been submitted to the Polish Patent Office, patent application no. P.427563

Implementation progress




TRL 4
Technology validated in laboratory conditions

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