

THE BACTERIAL STRAIN INCREASES PLANT GROWTH AND IMPROVES THE MICROBIOLOGICAL QUALITY OF THE SOIL



MARKET OPPORTUNITY

Any solution that increases agricultural biomass or speeds up the plant growth is of great interest to farmers. The technologies of industrialised agriculture, which have been used for many years around the world, allow maximisation of the harvest and crop efficiency, but at the same time lead to huge losses, mainly in the form of a dramatic degradation of the bacterial microflora required for plant growth and to maintain the balance of the entire farmland ecosystem. As a result, farmers are forced to spend increasingly more on sprays and pesticides, herbicides, all sorts of fungicides and fertilisers. Another cost is systematic soil degradation due to the use of heavy machinery in fields – compacting reduces the looseness of soil, which has a negative effect on plant growth. The invention developed by scientists at the University of Warsaw not only allows the easy improvement of the microbiological quality of the soil of the arable area, but also, as research results show, contributes to quicker and greater growth of plants.

HOW DOES IT WORK?

The invention involves the use of the Ensifer M14 bacterial strain, which can be introduced into the soil, among other things, via watering or spraying. Research has shown that the bacterial strain significantly improves the microbiological quality of the soil, which directly translates into more-efficient plant growth (compared with controls of soil without the addition of the bacteria). Ensifer M14 also increases the number of microorganisms and strongly stimulates the development of the microbiota. Studies have shown that the application of the above method accelerates the self cleaning of soils.

PHASE OF DEVELOPMENT OF THE TECHNOLOGY

Scientists have proven the hypothesis by conducting research at microfarms with common plants. The effects of the bacterial strain on various soil substrates were analysed.

IP protection

UPRP patent application, 2020



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BENEFITS

- Quicker and greater crop growth increases the profitability of harvests.
- Reduction in costs incurred by farmers for reclamation of soil and farmland after intensive use.
- Environmentally friendly method for microbial improvement of cultivated soil.
- Easy dosing of the product for any type of crop (open fields, greenhouses, orchards, vegetable gardens).

APPLICATION

- Bacterial strain as a biostimulant dosed in the form of: an additive to liquid fertilisers or a separate product as an aqueous solution.
- Bacterial strain as a soil bioremediation and remediation agent (dosage as above).
- For use on any type of open or greenhouse crops, in gardens or orchards, on lawns, etc.



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