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IMPROVING PLANT ESTABLISHMENT WITH MICROORGANISMS

ABSTRACT

Microorganisms exist naturally in the field. The root of the plant is surrounded by beneficial as well as harmful microorganisms. Some of the beneficial microorganisms have a direct growth stimulating effect on the plant whereas others are able to keep the harmful microorganisms away from the plant's roots.

A development project in Maribo Seed has focused on isolation of root rot protecting Gram-negative bacteria and the invigoration and stabilization of these bacteria in carriers for seed treatment. The project has now resulted in a patented system for stabilization and application of dehydration sensitive bacteria onto seeds.

The microorganisms are applied to the seed by means of an especially designed carrier, allowing the microorganisms to survive in a dormant state on the dry seed until sowing. Moreover, a special treatment gives the bacteria an enhanced adaptive response: the bacteria survive the transfer to another environment (soil) much better than without this treatment. Green house trials as well as field trials proved that sugar beet seeds coated with specific root colonizing Gram negative bacteria are protected against root rot diseases at level comparable to fungicide treatments.
