



Development of chitosan-based multifunctional liquid biofertilizer

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Agricultural productivity has faced severe challenges due to nutrient deficiency, damage caused by pests and pathogens. The usage of fertilizers to improve crop yield and nutritional profile is a necessity. However, the excessive usage of chemical fertilizers over several decades have led to enormous damage

leading to adverse effects on plant growth, soil structure, soil microflora, animals, and human health. In this scenario, plant growth-promoting microbes, such as plant growth-promoting rhizobacteria (PGPR) have gained attention as an alternative to chemical-based fertilizers for their environment friendly application. However, the major constraints have been low efficacy of the biofertilizers and low stability, leading to a short shelf life.

The present invention provides chitosan based multifunctional liquid biofertilizer comprising carboxymethylcellulose, polyvinylpyrrolidone, glycerol, chitosan and at least one plant-growth promoting rhizobacteria selected from *Bacillus sp.* RS4T, *Labrys endophyticus* RP1T and combinations thereof. The invention represents an advancement in the field of biofertilizers. The liquid biofertilizers of the present invention exhibit high plant growth promotion activities, improved shelf life/stability, leads to avoidance of environmental pollution and is an improvement over commercially available biofertilizers. *Read more* (<https://patentscope.wipo.int/search/en/detail.jsf?docId=IN297815627&docAn=202041016938>)

