

## Encapsulation Method for Slow Release of Biocontrol Agent for Agricultural Use

### TECHNOLOGY DESCRIPTION

This technology focuses on the encapsulation of *T. harzianum* UPM29 in alginate-montmorillonite clay to allow slow or controlled release as bio-control agent.

### TECHNOLOGY FEATURES

This technology can be applied to promote plant growth and as a biological control agent against soil borne pathogen such as *Sclerotium rofsii*, *Rhizotonia solani*, *Fusarium oxysporium* and *Ganoderma boninense*. The shelf life of the technology is over 6 months and the concentration of the spores entrapped for every beads is  $2.135 \times 10^5$  cfu/beads.

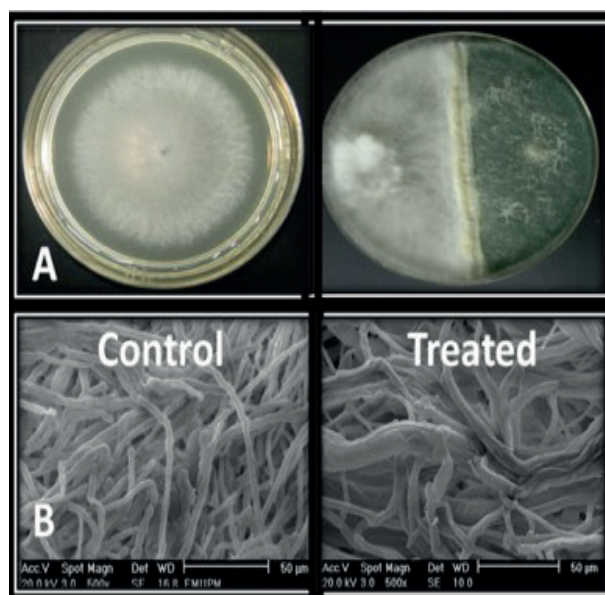
### ADVANTAGES

- Biocontrol
- Environmentally safe
- Cost effective

### INDUSTRY OVERVIEW

#### Prospect Industry: Horticultural, Agricultural Industries

Biocontrol Agents (BCAs) is one of the emerging trends in Crop Protection Industry supporting the wider trend of non-chemical pest control. This market encompasses a wide variety of natural enemies which combat different pests in several crop fields. The local market potential is SMEs involved in harvesting horticulture crops and oil palm plantations. Biocontrol Agents Market is well-established in developed nations especially in America and Western Europe; and is gaining importance in emerging nations. North America is the dominant market for Biocontrol and it is estimated to reach \$488.4 million by 2020 at a CAGR of 14.1% during 2015-2020. Heightened awareness and acceptance of biological control in the agricultural system has put North American market in the top position. Increasing use of BCAs for pest control in horticulture and high value crop fields spurs the market for these products in European region. In the Asia Pacific region, China, India, Japan, Australia, New Zealand are the main suppliers and users of biocontrol agents. The major players in BCAs market include Bayer CropScience AG, BASF SE (Germany), Syngenta AG (Switzerland), Novozymes A/S (Denmark) and Koppert Biological systems (Netherlands). Therefore, this product has potential to be jointly developed with existing agricultural companies for commercialization; as these providers are continuously investing in developing and launching new microbial products; with consistent support from the advancements in microbiology and plant pathology.



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