

## Eco-Friendly Fungicide for Crop Soft Rot Disease

### TECHNOLOGY DESCRIPTION

This invention is a biological control agent using combination of *Pseudomonas chlororaphis* strain A4 and *Bacillus subtilis* strain A2.

### TECHNOLOGY FEATURES

It specifically targets *Pectobacterium* spp without damaging commercial value of vegetables and fruits. It is more effective and efficient as compared to common commercial fungicides. The technology works at a wide range of pH from 1 to 11 and is stable at different temperatures (30oC -75 oC). The technology has also been found to be active at different UV irradiation time. It can be utilized under different environmental circumstances. Its characteristics avoid the need for special transportation, handling, and storage of hazardous chemicals. There is no need for a high initial cost for installing special equipment to produce and dispense the product.

### ADVANTAGES

- Eco-friendly and biodegradable
- Economical to produce and apply
- An alternative to hazardous chemical fungicides
- Leaves no chemical residues (nontoxic, and natural)

### INDUSTRY OVERVIEW

#### Prospect Industry: Fungicide Producers

The global fungicides market was valued at US\$11.23billion in 2014 and is likely to reach US\$16.30 billion in 2023, expanding at a CAGR of 4.4% between 2015 and 2023. In terms of volume, Mancozeb accounted for the highest share of more than 20% of the global fungicide market in 2014. Mancozeb is likely to be the fastest-growing segment of the global fungicide market during the forecast period. It is yet to face any resistance management issues from various strains of fungi and is also relatively low-priced as compared to other fungicides. Strobilurins are anticipated to grow at a moderate rate however face crop resistance issues due to excessive usage. Market prospects in Malaysia include pesticides or fungicide producers and agricultural SMEs. Regions that use the largest amount of fungicide in Asia are major agricultural countries such as China, India and most ASEAN countries. Other major fungicide consumers include Brazil, Europe and the US. Europe dominated the fungicide market over the past few years on account of high production of vegetables and fruits along with wheat. In the U.S., fungicides are widely employed in the production of a large range of fruits and vegetables including apple, pecan, potato and blueberries. This is likely to propel its market over the next six years. Furthermore, governments of various countries in Asia Pacific intend to create awareness regarding appropriate usage of fungicide among farmers in order to increase crop yield and enhance quality of the produce. This is likely to boost the fungicide market in the Asia Pacific region over the projected period. The global fungicide market is consolidated; the top five players constituted more than 70% share in 2014.



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