Development of endophyte-based biopesticides for pre and post-harvest soft-rot disease management

Applications

Ginger production is seriously affected by soft rot caused by Pythium species (fungus) resulting in absolute production loss, the severity of which is reported every year. The use of Z. zerumbet endophyte (ZZE) based biopesticides for managing soft-rot disease is one such case in point. Present innovation offers a solution to control soft rot disease in the field of agriculture. The developed formulation is easy to apply, cost-effective, has no adverse environmental impact and can effectively control the disease during the planting stage. Farmers who lease out land of 200-300 acreage constitute the prospective buyers.

Problem Addressed

Soft-rot disease caused by Pythium species is a major productivity constraint for the spice crop, ginger. The pathogen has a broad host range and is a serious economic constraint for many other crop plants such as potato, carrot, papaya and pumpkin etc. There is significant demand amongst farmers for a solution to manage soft-rot disease. Currently there are no biopesticides effective in soft-rot disease control, with disease infestation often resulting in absolute (100% crop loss). Furthermore, available Trichoderma based formulations fail to control disease in field causing slump in market price in the event of crop failure.

Technology

- The formulation is biodegradable and contains metabolite(s) of plant and endophytic origin.
- Film-like formulation contains metabolite mixture(s) of endophytic and plant origin that provides protection to ingress from soft-rot causative Pythium species.
- More than one compound in the formulation ensures delay in development of resistance.

Advantages

- Synergistic action of more than one molecule delays the chances for development of resistance to the formulation.
- Film-like biopesticide formulation.
- Environment friendly.
- Simple application procedure at the time of planting rhizome.
- Cost effective.

Potential Value

1. Area of ginger under cultivation in India: ~266 thousand acre.
2. Loss in the event of soft-rot incidence: absolute.
3. Cost of the developed film-based formulation is 1/8th the cost of the commercially available Trichoderma-based biopesticides

Reach Us

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