ABSTRACT A global rise in population and environmental degradation pose challenges to agricultural productivity world- wide, compelling the need for new strategies to tackle abiotic stress, pathogens, and other pests.Aside from that, the constant use has led to irremediable dam- ages to nature, encircling ecological imbalance, environmental pollu- tion, health threats, the abatement of biodiversity, the diminution ofThese considerations have mandated the need for alternative approaches such as the utilization of bio-pesticides, comprising biochemical pesticides, microbial pesticides, and plant-incorporated protectants, to preserve agriculture output, enhance plant growth, and compensate for the reduced use of synthetic pesticides.Although chemical pesticides have had a significant impact on boosting agricultural output throughout the years, this aspect also has negative implications involving elevated levels of toxicity impacting animals, plants, humans, and other terrestrial and aquatic beings [3].Pests, including pathogens, weeds, invertebrates, and insects, are triggering considerable crop failures, as nearly 10,000 insects, 30,000 weeds, 1000 nematodes, and 100,000 other microbial species have been reported to exhibit detrimental effects on crops [2].Synthetic pesticides are widely deployed to restrain excessive crop los- ses, but the extended and inappropriate usage of these synthetic pesti-cides has resulted in mounting resistance among these organisms.Bio-pesticides derived from microbial sources (viruses, bacteria, and fungi) are gaining much prominence due to their sustainability, non- toxic .nature, and specific action against target species.1

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