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Theme 2. Grassland production and utilization

Sub-theme 2.2. Integration of plant protection to optimize production

Seed biopriming a novel tool for production of disease free fodder

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Indian agriculture is characterized by intertwined practices of crop production and animal husbandry. Domesticated animals have been energy source for farm operations and protein source. Fodder crops vitally serve as main source of food for the livestock. Major limitations in production of fodder crops are poor distribution of resources due to their non-commercial status, non-availability of quality/certified seeds and various diseases.

Synthetic chemicals are widely used for seed treatment to prevent seed borne diseases during last decades. Raising concern about their hazardous effect on human and ecosystem has limited their application and disease management practices shift towards the more ecofriendly approaches.

Biopriming with beneficial microorganism is a new approach of seed treatment in which seed hydration is combined with microorganism inoculation. The most frequently used microorganisms in bio-priming include *Trichoderma* spp., *Pseudomonas fluorescens*, *Bacillus* spp., *Glomus* spp., and *Agrobacterium radiobacter*. Species of the filamentous-ascomycete genus *Trichoderma* are among the most commonly isolated saprotrophic fungi. They are frequently found in soil and growing on wood, bark, other fungi and innumerable other substrates, demonstrating their high opportunistic potential and their adaptability to various ecological conditions.

So far, *Trichoderma* spp. are the most frequently investigated fungal biocontrol agent and more than 60 % of the commercially available registered biofungicides worldwide are based on different formulations of *Trichoderma*. About 250 products are commercially available for field applications in India.