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EFFICIENT MANAGEMENT OF FUNGAL DISEASES IN SUGARCANE BY ENHANCED FUNGICIDE DELIVERY IN PLANTING MATERIALS

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Vegetative propagation in sugarcane favours pathogen infection in the stalks and their transmission through seed cane leading to disease epiphytotics. Although the major fungal diseases causing red rot, smut and wilt are managed largely by deploying resistant varieties, in many situations there is a need to manage these diseases under field conditions due to break down of resistance or other factors. To effectively manage these diseases, primary sources of pathogen inoculum carried through seed canes should be targeted. Conventional sett treatment with fungicides is ineffective due to poor uptake of the fungicides inside the setts. Hence an efficient fungicide delivery method was developed to diffuse fungicides inside the setts using a mechanized-vacuum infiltration approach. The treatment method has resulted in more effective diffusion of the fungicides into sugarcane setts and it facilitated killing of sett borne infections of red rot and smut pathogens. Further, disease development from soil borne inoculum of *Colletotrichum falcatum* was also arrested in the field. A set of field trials conducted under field conditions at Coimbatore and disease-endemic regions validated disease management by improved fungicide delivery through sugarcane setts. In addition, the same method of sett treatment has been found efficiently to deliver different agrochemicals and macro and micro nutrients. This study established that the mechanized sett treatment has several additional advantages such as portability, operational simplicity, simultaneous delivery of compatible inputs before planting, etc. This new fungicide delivery system has opened up new opportunities for managing red rot in sugarcane under field conditions.