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Efficacy of some selected fungicides in controlling smut disease in sugarcane

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Sugarcane smut caused by the fungus *Ustilago scitaminea,* is one of the most destructive diseases of sugarcane in Sri Lanka. As the disease is a sett-born, use of healthy seed cane is vital to reduce the losses due to disease. Present study was undertaken to find out the effect of sett treatment and spraying of fungicides on smut disease.

Promising systemic fungicide Tebuconazole (Folicur EW 250) was tested with fungicide carbendazim (Bavistin) in a randomized blocked field trial at Udawalawe, Sugarcane Research Institute. Each block consisted with plots (10 m* 6.85 m) replicated 3 times. Smut susceptible variety SL 88-116 was used and 3 budded setts were inoculated with smut (*Ustilago scitaminea)* spores using the immersion method. These pre inoculated seed setts were used for the trial. Three methods of fungicide application were used: 1. a cold dip of setts (a.i. 500 ppm) for 30 min, 2.a cold dip of setts (a.i. 500 ppm) for 30 min 3.spraying fungicides fortnightly until crop reaches 4 months and Spraying fungicides fortnightly until crop reaches 4 months (concentration 0.27 a.i. g / lit. of water). Observations on standing crop were recorded periodically and cumulative disease development was evaluated. In addition preliminary study was conducted *in vitro* using the above fungicides.

Results shows that seed setts dipping in fungicide tebuconazole i.e. T4 (dip in 500ppm solution) and T5 (dip + spry 0.27 a.i.g/l); has a good effect on controlling primary smut infection over the other fungicide treatment methods. When cumulative disease incidences of plant crop above 6.5 months (26 weeks after planting) considered, same treatments gave smut incidences less than 5% while all other treatment combinations including controls gave higher disease incidences. In plots where fungicide spraying was done, i.e.T3 (spray carbendazim) and T4 (spray tebuconazole) drastic increment in disease incidence was observed. Although sett dipping in Folicur was effective, spraying Folicur at a rate of 0.27 a.i. g / lit. of water was not effective in controlling primary smut infection. This may be due to maximum colonization of smut fungi as other competitive fungal colonies are suppressed by spraying these fungicides.

Seed setts dipping in 500ppm solution of tebuconazole (Folicur® EW 250) for 30 min effectively controls smut infection in sugarcane.

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