Research Article

Assessment of Fungicides and Bioagents Against Sugarcane Wilt Disease, its Impacts on Various Cane Parameters and its Economic Sustainability

Aaradhna[1], Md Minnatullah[1] and Shiva Pujan Singh[2]

[1]*Department of Plant Pathology, Sugarcane Research Institute,* [2]*School of Agri Business and Rural Management, Dr Rajendra Prasad Central Agricultural University, Pusa, Samastipur, Bihar, Pin 848125 (India); Email:aaradhnabhu@gmail.com*

Abstract

Sugarcane (*Saccharum officinarum* L.) is grown in more than 110 countries and employs over seven million farming communities. The crop is affected by many diseases among which, wilt caused by *Fusarium sacchari* is one of the most prevalent in the Bihar region. We aim to assess the efficacy of chemicals and bioagents against sugarcane wilt disease in field conditions. Among the four chemicals used for treatment, Thiophenate Methyl (70 WP @ 1 g L^{-1}) was the best followed by Azoxystrobin (23% SC @ 1 ml L^{-1}), Propiconazole (25 EC @ 1ml L^{-1}) and the least effective was Tebuconazole (25 g EC @ 1ml L^{-1}). Among the two bioagents used for treatment, *Trichoderma harzianum* (@ 10 g L^{-1}) was more efficacious than *T. asperellum* (@ 10 g L^{-1}). The highest net return of Rs 123480 ha^{-1} was obtained from the plots treated with Thiophenate Methyl (70 WP @ 1 g L^{-1}) and the minimum net return of Rs 15466 ha^{-1} was obtained from the plots treated with *T. asperellum* (@ 10 g L^{-1}). The highest profit per rupees invested (1:1.09) was obtained from the treatment with Thiophenate Methyl (70 WP @ 1g L^{-1}), while the lowest profit obtained per rupees invested (1:0.15) was from the treatment with *T. asperellum* (@ 10 g L^{-1}) as per the calculated cost-benefit ratio.

Key words: Assessment, fungicides and bioagents, sugarcane, wilt disease

Citation: Aaradhna, Minnatullah Md and Singh SP. 2023. Assessment of fungicides and bioagents against sugarcane wilt disease, its impacts on various cane parameters and its economic sustainability. *J Mycol Pl Pathol* 53 (4): 379-386