

### Mini Review Article

## Two to Tango: Surreal Soil Borne Fungus-Plant Parasitic Nematode Interactions in Disease Complexes of Crops and their Mitigation

Sandeep Jain, Simarjot Kaur, Pooja Salaria, Liza Kalita, Dalvir Singh Dhami, Ritu Rani and Jyoti Jain

*Department of Plant Pathology, Punjab Agricultural University, Ludhiana-141 004; Email: sandeepjain@pau.edu*

---

### Abstract

The intricate interface between soil microbes and higher plants, especially in the rhizosphere, encompasses intercommunication and networking that greatly impact ecosystems. The interaction of soil-borne pathogens and plant parasitic nematodes (PPN) results in destructive disease complexes, particularly in different crops. Initially perceived as wound creators aiding fungal entry, nematodes' role in disease complexes has proven to be far more complicated. Their invasion creates openings for fungi along with the induction of changes in root exudates and host physiology, impacting the plant's susceptibility to further pathogenic invasion. Interestingly, while nematodes cause physical harm and alterations, fungi tend to benefit noticeably from nematode-host plant relations. Research efforts have identified resistance genes against specific nematode species, aiding in the development of resistant crop varieties. However, managing such disease complexes remains challenging due to the varied responses required against different pathogens. Tailored diagnostic and timely mitigation measures are crucial to efficiently managing such complexes and averting economic losses. The present review recapitulates a complex web of physical, biochemical, physiological, and molecular interactions between phytoparasitic nematodes and soil borne pathogens on different crops.

**Key words:** Antagonistic, management, nematode-fungal interactions, physiological alterations, rhizosphere, synergistic

**Citation:** Jain S, Kaur S, Salaria P, Kalita L, Dhami DS, Rani R and Jain J. 2024. Two to Tango: Surreal soil borne fungus-plant parasitic nematode interactions in disease complexes of crops and their mitigation. *J Mycol Pl Pathol* 54 (3): 227-246 (<https://doi.org/10.59467/JMPP.2024.54.227>)