

Biological control of Root-knot nematodes by the fungus *Fusarium solani*

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Abstract. Plant-parasitic nematodes belonging to the genus *Meloidogyne* are known as root-knot nematodes. In regions with hot weather or brief winters, they are found in the soil. This nematode can be infected by microbial parasites like fungi. Therefore, this study was performed to identify the fungal parasite that infect nematode *Meloidogyne* spp. *Fusarium solani* has been isolated from nematode in the rhizosphere of a Okra plant infected with root-knot nematodes. The morphological and molecular identifications appeared to be identical by 100%. The pathogenicity test indicated that *F. solani* did not infect the radish seeds. 96% of the seeds germinated in the distilled water. However, *F. solani* was responsible for 93% of the seeds germinating. After 24 hours, the hatchability rate was 18.52%; after 72 hours, it was 28.6%. At the 25% concentration, the hatchability was 18.26%; at the 100% concentration, it was 28.39%. The mortality% on the larvae of root-knot nematodes between the three concentrations, 25%, 50%, and 100%, were 42.81, 56.49, and 64.65%, respectively. Additionally, the mortality% of larvae has also been significantly impacted by time. The difference between 72 and 24 hrs and 58.32 and 51.09 was statistically quite significant, respectively. While the interaction effect was not significant.

Key words: Eggs hatchability, *Fusarium solani*, larval mortality, *Meloidogyne* spp., Molecular identification

1. Introduction

Nematodes are invertebrate creatures of living things. Their morphologies elongate, thread like, or circular, or eelworms, and they can be either free-living or parasitic (endoparasites and exoparasites of other species). Nematodes are among the most successful and versatile animal groups, second only to insects, in terms of species or ecological range [1]. There are many fungi are harmful to some nematode species, their interaction with soil worms goes beyond parasitism and into the realm of predation. Approximately 200 taxonomically diverse fungal species are capable of attacking active nematodes, which are useful creatures that range in length from 0.1 to 1.0 mm [2]. These fungi were divided into three major categories by [3]: endophytic fungi, saprophagous fungi, and nematophagous fungi. However, some fungal species, such as *Arthrobotrys oligospora*, are able to consume nematodes and their eggs. These fungi are known as nematophagous fungi [4]. Therefore, nematophagous fungus use a variety of strategies to target nematodes, such as predatory fungi like *Drechlerella* spp. and