

Screening and isolation of antinematodal metabolites against *Bursaphelenchus xylophilus* produced by fungi

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Abstract - Sixty crude cultural filtrates of thirty fresh water fungi individually grown in both Potato Dextrose broth and GPC broth were assayed *in vitro* for antinematodal activity against *Bursaphelenchus xylophilus* (Steiner et Buhrer) Nickle using immersion test. Filtrates from *Camposporium quercicola* YMF1.01300, *Periconia digitata* YMF1.00948, *Caryospora callicarpa* YMF1.01026 grown in both PDB and GPC broth, and the cultural filtrate of *Melanospora zamiae* YMF1.00948 grown in PDB were found to be pathogenic to the tested nematodes. The degree of activity varied with the fungal species, length of exposure time, and media composition. From a nematocidal cultural extract of *Caryospora callicarpa* YMF1.01026, four known naphthalenones were isolated and identified as 4,8-dihydroxy-3,4-dihydronaphthalen-1(2H)-one (**1**), 4,6-dihydroxy - 3,4-dihydronaphthalen- 1(2H)-one (**2**), 4,6,8-trihydroxy-3,4-dihydronaphthalen-1(2H)-one (**3**), 3,4,6,8-tetrahydroxy-3,4-dihydronaphthalen-1(2H)-one (*cis*-4-hydroxyscytalone) (**4**) by NMR and MS analysis. All four metabolites showed noticeable biological activity against *B. xylophilus* nematode. This is the first published report of these compounds affecting plant-parasitic nematodes.

Key words: antinematodal activity, *Bursaphelenchus xylophilus*, *Caryospora callicarpa*, naphthalenone.

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