Mycelial Growth and Spore Production of Pochonia chlamydosporia Strains on Solid Culture Media

Author(s) Silas Silva[2], Daniela Kols[1], Myrian Tigano[1], Rogério Lopes[1]

Institution(s) 1. Embrapa, Embrapa Recursos Genéticos e Biotecnologia, Brasilia, DF 2. UNB, Universidade de Brasília, Brasília, DF

Abstract:

Pochonia chlamydosporia is a potential biocontrol agent for cyst and root knot nematodes, which are important agricultural plant pests. The fungus has a ubiquitous distribution, and has been isolated from egg nematodes and soil. Growth rate and sporulation ability of P. chlamydosporia on artificial media are important characteristics for evaluating this fungus as a biocontrol agent. The aim of the present study was to evaluated morphological aspects and spore production of nineteen P. chlamydosporia strains on solid culture media. Twelve-day old culture discs were inoculated on potato dextrose agar (PDA) media in Petri dishes and maintained at 24oC in dark. After four, eight and twelve days of inoculation, radial growth was scored measuring the colony diameter and morphological aspects of colonies were observed. Conidia and chlamydospores production was evaluated for the 12 day-old colonies. Colonies on PDA media showed a relatively fast growth, reaching between 33.4 and 47.8 mm diameters. For most strains, colonies were white, later becoming cream-colored, sometimes appearing powdery or finely granular with age. Great variation on spore production was obtained. No correlation was observed between chlamydospore and conidia production for the nineteen strains tested. Conidia production reached 10.41x108 and 6.73x108 per colony for strain CG1003 and CG1045 of P. chlamydosporia var. chlamydosporia, respectively, and did not differ from P. chlamydosporia var catenulata strain CG1006. Regarding chlamydospore production, the best performance was recorded for strains CG1041 of P. chlamydosporia var. chlamydosporia and CG1044 of P. chlamydosporia var. catenulata with 4.52x106 and 2.58x106 per colony, respectively. These strains are on evaluation against the root knot nematode Meloidogyne mayagensis on tomato plants.

Key words: Biocontrol, Fungus, Sporulation