

ABSTRACT

Pochonia chlamydosporia (Goddard) Zare and Gams is a biological control agent for control of root-knot nematodes. However, the efficiency of many biological control agents, including *P. chlamydosporia*, depends on soil conditions. An *in vitro* study was conducted to determine the effect of temperature, pH, carbon and nitrogen on the activity of *P. chlamydosporia* against *Meloidogyne incognita* (Kofoid & White) Chitwood. Sunn hemp, maize cobs and sawdust decomposed at 15, 20 and 25 °C, media with pH from 3.4 to 8.8 and a carbon and nitrogen ratio from 0.01 to 10 were used with *P. chlamydosporia* under *in vitro* conditions. Addition of the *P. chlamydosporia* to pre-decomposed organic materials resulted in a high number of fungal propagules. Using sunn hemp and maize cobs, the number of fungal propagules increased with increasing soil temperature, and at 20 °C the percentage of infected eggs increased significantly. The percentage of egg infection increased with increasing nitrogen level from 5 to 100 mM when carbon was kept at 10 mM. The results can be used to improve effectiveness of the fungus in the tropics as part of an integrated pest management approach under tropical field conditions where problem of root-knot nematodes is common.