EFFECT OF NUTRITION ON INFECTIVITY OF THE NEMATOPHAGOUS THE FUNGUS *Pochonia chlamydosporia* ON NEMATODE EGGS

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Effective establishment of microbes applied to soil often requires addition of an exogenous nutrient source to overcome competition from the resident microflora. However, readily-available nutrients may compromise the parasitic ability of facultative microbial parasites added as biological control agents. A study to investigate the role of nutrition in regulating the switching from the saprotrophic to the parasitic phase of nematophagous fungus *Pochonia chlamydosporia*, was undertaken. Improvements were made to a bioassay to assess the parasitism of *P. chlamydosporia* on eggs of *Meloidogyne javanica* and *Globodera pallida* under varying concentrations of exogenous nutrient source (Yeast extract medium). Meloidogyne janica eggs obtained infected tomato plants were adjusted to 1000 eggs ml^{-1} and inoculated with sterilised yeast extract medium (YEM) and 2.75 x 10^4 ml^{-1} *P. chlamydosporia* conidiospores in sterilised distilled water to a volume of 10 ml. The experiment constituted of 2 controls being 0.0125% YEM (no fungus) and Water (no fungus) plus the 3 media (0.00625% YEM, 0.0125% YEM and Water) by 6 fungal isolates. Significant differences ($P<0.001$) were observed on the influence of the media on egg parasitism of *M. javanica* and *G. pallida* eggs, respectively with, egg parasitism being lowest at 24 hours and highest at 48 hours in all media. The YEM media at both concentrations stimulated higher infection rates on both *Meloidogyne* and *Globodera* eggs compared to the water medium. Compared to *M. javanica* eggs, higher infection proportions on *G. pallida* eggs were observed across all the media demonstrate host preferences among the isolates. Molecular techniques used to assess variation in *P. chlamydosporia* isolates, including analysis of the VCP1 gene egg infection showed this gene to be highly conserved. Further, expression of the VCP1 gene was up-regulated in media containing 2% glucose and suppressed in nitrogenous media.

Keywords: Globodera; Meloidogyne; Parasitism; Pochonia