

## Abstract

Integrated approaches are fast gaining popularity in the management of root-knot nematodes (RKN). This study was undertaken to assess the potential of integrating a biological control agent (BCA, *Pochonia chlamydosporia* isolate 10), crop rotation (CR, maize) and organic amendment (OA, maize stover) in the management of RKN in tomato production. One glasshouse and two field experiments were conducted with tomato as the investigated crop. The treatments were applied either singly (OA, BCA and CR) or in combination (BCA + OA, CR + OA, CR + BCA and CR + BCA + OA) and a control where tomato was grown without treatment. Application of CR consistently led to a reduction in the numbers of second-stage juvenile of RKN on roots during the first season, though to be effective in the second season, inclusion of the BCA was necessary. Galling index was also generally reduced by CR. Fruit count in the field experiments increased as a result of combining CR with BCA and combining CR + BCA + OA. In the first field experiment, yield increase was proportional to increase in the number of fruits as a result of CR + BCA and CR + BCA + OA. Application of *P. chlamydosporia* in the field where maize was planted increased the yield of tomato by up to 63% in the first season compared to plots where no nematode management measure was done. This study has demonstrated that rotating maize with tomato can be effective alone and for some benefits, in combination with a biological control agent and organic amendment.