

Project Title : Determination of effectiveness of alternative methods for the control of Root-knot nematodes (*Meloidogyne* spp.) in greenhouse cucumber growing

Start /End Date : 2010-2012

Supporting Body : GDAR

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Summary : This study was conducted on between the years 2010-2011 in autumn cucumber grown greenhouses infected with root knot nematodes, *Meloidogyne javanica* and *Meloidogyne incognita*, in western Anatolia (Izmir-Menderes), Turkey. The aim of the study is to determine efficiency of some alternative methods to registered chemicals used against to root-knot nematodes (*Meloidogyne* spp.). In the study, contained different doses and active substances of the sesame oil, broccoli, mycorrhizal fungi and azadirachtin efficiency to *Meloidogyne* spp. and total crop yields were evaluated. Trials were set up as a randomized block design with 11 characters and 4 repetitions. At the end of the growing season, the efficiency of the applications was determined according to gall index of the roots based on 0-10 Zeck scale.

According to results of the trials, it was found that soil structure and the seedling planting period can significantly affect to nematode population in soil and root galling in plant. First year trial was set up in a greenhouse with 5 scaled root galling index value. Average root gall indices were obtained from 0.55 to 2.78 in plots applied alternative methods and it was found less than the control plots value (5.72). The highest effects were obtained from sesame oil (84.26% - 90.38%), broccoli (80.77% -82%) and azadirachtin (68% -86.88%) applications. Second year trial was set up in a different greenhouse with 8 scaled root gall index. As a result of the experiment, while the control plots the average root galling index value was determined as 8.9, alternative methods applied plots index values ranged from 6.8 to 8.2. The highest effects of the alternative methods were obtained from sesame oil (20:22% -23.60%) and broccoli (20:22% -21.35%) applications.

According to these results, sesame oil and broccoli applications are considered to be promising as alternative control methods to the registered nematicides in the greenhouses infested with *Meloidogyne* spp..