

Effects of Green Walnut Husk and Olive Pomace Extracts on Growth of Tomato Plants and Root-Knot Nematode (*Meloidogyne incognita*)

Authors : Yasemin Kavdir, Ugur Gozel

Abstract : This study was conducted to determine the nematicidal activity of green walnut husk (GWH) and olive pomace (OP) extracts against root-knot nematode (*Meloidogyne incognita*). Aqueous extracts of GWH and OP were mixed with sandy loam soil at the rates of 0, 6,12,18,24, 60 and 120 ml kg⁻¹. All pots were arranged in a randomized complete block design and replicated four times under controlled atmosphere conditions. Tomato seedlings were grown in sterilized soil then they were transplanted to pots. Inoculation was done by pouring the 20 ml suspension including 1000 *M. incognita* juvenile pot-1 into 3 cm deep hole made around the base of the plant root. Tomato root and shoot growth and nematode populations have been determined. In general, both GWH and OP extracts resulted in better growth parameters compared to the control plants. However, GWH extract was the most effective in improving growth parameters. Applications of 24 ml kg⁻¹ OP extract enhanced plant growth compared to other OP treatments while 60 ml kg⁻¹ application rate had the lowest nematode number and root galling. In this study, applications of GWH and OP extracts reduced the number of *Meloidogyne incognita* and root galling compared to control soils. Additionally GWH and OP extracts can be used safely for tomato growth. It could be concluded that OP and GWH extracts used as organic amendments showed promising nematicidal activity in the control of *M. incognita*. This research was supported by TUBİTAK Grant Number 2140422.

Keywords : olive pomace, green walnut husk, *Meloidogyne incognita*, tomato, soil, extract

Conference Title : ICAACS 2017 : International Conference on Agriculture, Agronomy and Crop Sciences

Conference Location : Rome, Italy

Conference Dates : September 18-19, 2017