Response of greenhouse cucumber to different levels and sources of organic manures and their effects on some soil properties

S. A. Ghaffari Nejad[1]

(Received: 27 Dec. 2015 ; Accepted : 19 June 2016)

Abstract

The potential of Jiroft region has resulted in progressive development of greenhouse culture. In sustainable agricultural systems, organic manures have special role in increasing yield and soil fertility. To investigate the quantitative and qualitative responses of greenhouse cucumber to sources and levels of organic manures and their effect on some soil properties in Jiroft region, a factorial experiment was conducted, based on completely randomized blocks design, with four organic manure levels (10, 20, 30 and 40 ton/ha), four organic manure sources (municipal solid waste compost, cattle, poultry, and sheep) and three replications. One month after the start of fruit harvest, leaf sampling was performed and concentration of nutrient elements was analyzed. Soil samples were taken from each plot after the fruit harvest and bulk density, electrical conductivity, organic carbon and concentration of available nutrients were determined. Results showed that concentration of nitrogen, potassium, zinc and copper in leaves was not significantly affected by sources and levels of organic manures. Poultry manure significantly increased leaf-phosphorous concentration compared to other manure sources. The highest concentration of iron was observed in sheep manure and compost treatments and the highest concentration of manganese was observed in compost treatment. Based on the yield results, using 20 ton/ha of poultry manure is recommendable for production of greenhouse cucumber in the Jiroft region.

Keywords: Farmyard manure, Compost, Cucumber yield.

1. Dept. of Soil and Water Res., South Kerman Agric. and Nat. Resour. Res. Center, Jiroft, Iran.
* Corresponding Author, Email: ma_ghaffari51@yahoo.com