Comparison between mycorrhizal fungi, phosphate biofertilizer and manure application on growth parameters and dry weight of coriander (*Coriandrum sativum* L.) medicinal plant

A. Bastami[1] and M. Majidian[1*]

(Received: 15 Aug. 2014 ; Accepted: 20 April 2015)

Abstract

In order to compare the effect of mycorrhizal fungi, phosphate biofertilizer and manure application on growth parameters and dry weight of coriander medicinal plant, a factorial pot-experiment, based on randomized complete design with three replications, was carried out in 2012, in Faculty of Agricultural Sciences, University of Guilan, Iran. The factors were mycorrhizal inoculation *Glomus mosseae* (inoculated and non- inoculated), phosphate biofertilizer (0, 35 and 70 kg/ha) and cattle manure (0, 10 and 20 ton/ha). Results indicated that mycorrhizal inoculation and phosphate biofertilizer had significant effect on all evaluated traits. Maximum dry weight of plants, stem diameter, number of branches per plant, plant height, length of roots, dry weight of roots, and total chlorophyll and carotenoid content of leaves were found to be 24, 200, 23, 50, 13, 33, 36 and 58 percent, respectively, higher than the application of 20 ton/ha of manure. But, the highest number of umbrellas per plant was obtained by applying 70 kg/ha biofertilizer, which was 4% more than the application of 20 ton/ha manure. Based on the results, biofertilizers (mycorrhizal inoculation and phosphate biofertilizer) provide more favorable conditions, compared to the manure, in increasing the yield of coriander plant, for sustainable agriculture under greenhouse culture.

Keywords: Sustainable agriculture, Mycorrhizal fungi, Phosphate biofertilizer, Manure, Coriander.

1. Dept. of Agron. and Plant Breed., Faculty of Agric. Sci., Univ. of Guilan, Rasht, Iran.
*: Corresponding Author, Email: ma_majidian@guilan.ac.irhu8

[DOR: 20.1001.1.20089082.1395.7.2.3.1]
[DOI: 10.18869/acadpub.ejgcst.7.2.23]