

## **Influence of *Dieffenbachia amoena* Leaf Extract on Nematode Development and Infection**

**Refik BOZBUGA<sup>\*1</sup>, Dilek DİNÇER<sup>1</sup>, Adem ÖZARSLANDAN<sup>1</sup>, Hülya DEMİRBAŞ PEHLİVAN<sup>1</sup>, Halil TOKTAY<sup>2</sup>, Mustafa İMREN<sup>3</sup>**

<sup>1</sup> Biological Control Research Institute, Adana, Turkey

<sup>2</sup> Ömer Halisdemir University, Faculty of Agriculture and Technologies, Department of plant Production and Technologies, Niğde, Turkey

<sup>3</sup> Abant Izzet Baysal University, Faculty of Agriculture and Natural Sciences, Plant Protection Department, 14280 Gölköy, Bolu, Turkey

<sup>\*</sup>: Corresponding author

**Abstract:** Root knot nematodes, are important group of plant parasitic nematodes that cause massive amount of crop losses. Some plant extract may reduce the nematode population. It is thought that leaf extracts can be successfully used in nematode control. *Dieffenbachia* is an ornamental and may poisonous plant. However, studies the application of *Dieffenbachia amoena* leaf extracts against root knot nematodes is not fully understood. Therefore, this study was carried out to determine the effect of *Dieffenbachia amoena* leave extracts to control a root nematode species *Meloidogyne incognita* in the roots of tomato plants. For this aim, different dilutions (1%, 5%, 15%, %30 and 40%) of *Dieffenbachia amoena* leaf extracts were applied to determine its effect on nematode development and function. Additionally, plant growth, dry weight, nematode reproduction rate and galling index were achieved. Result of this study indicated that the lowest number of second stage juvenile was detected in 40% of leaf extract dilutions but highest larvae number was found in 15% of leaf extract dilutions in greenhouse conditions. Lowest gall index and lowest nematode reproduction rates were determined in the 40% of leaf extract applications. Divergent results were determined in terms of varied rate of different *Dieffenbachia amoena* leaf extract dilutions in the growth of tomato plant root and shoots. Overall, it can be suggested that some dilutions such as 40% can be used to reduce nematode number and galling index in tomato roots, however, field experiments are needed to confirm the result of the greenhouse pot experiment.

**Keywords:** *Dieffenbachia amoena*, nematode, leaf extract