

RESPONSE OF MYRTLE VEGETATIVE GROWTH TO BA AND HUMIC ACID APPLICATION

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(Received 19 March 2019, Revised 11 August 2019, Accepted 28 August 2019)

ABSTRACT : This research was conducted in the glasshouse of the Department of Horticulture and Gardens Engineering at the College of Agriculture, Anbar University at the season 2018-2019, to study the effect of BA spraying and the addition of humic acid in some growth characteristics of *Myrtus communis* L. saplings at the age of one year. A factorial experiment was executed with two factors, the first one included BA spraying with three concentrates (0, 100, 200 mg L⁻¹) and given the symbols (B₀, B₁, B₂). The second factor included the addition of the humic acid with three concentrates (0, 3, 6 ml L⁻¹) which given the symbols (H₀, H₁, H₂). The experiment was applied according to the Complete Block Randomized Design (RCBD). The results were analyzed using the statistical program Genstat and the means were compared according to the least significant difference (LSD) at 5% probability level. The results can be summarized as follows: The spraying with BA affected in most vegetative and root growth characteristics. The concentration of 200 mg L⁻¹ (B₂) was significantly superior in the number of branches (3.72 branch sapling⁻¹), stem diameter (4.88 mm), leaf number (250.23), leaf area (16.93 dcm²) and the dry weight of the vegetative system (51.98 g). On the other hand, the treatment B₁ gave the higher mean of the increase in the length of branches (22.23 cm) which is not significantly differed with the treatment B₂, but significantly differed with the control treatment (B₀). Also, B₁ treatment was significantly superior in the mean increase of the sapling height (27.48 cm). The use of 6 ml L⁻¹ concentration of humic acid (H₂) resulted in a significant increase in the increase of branch length (27.10 cm), sapling height (33.61 cm), number of leaves (187.83) in addition to, giving the highest leaf area (14.03 dcm²) and the dry weight of vegetative system (52.47 g). While the results of the interaction between the two factors of the study according to F value test showed that there are no significant differences in the mean of increase in branch length, sapling height and leaves number. On the other hand, the treatment B₂H₂ gave the highest mean of increase in stem diameter (6.90 mm) and the dry weight of the vegetative system, which significantly differed with most other interactions. The treatment B₂H₀ recorded the highest number of branches (4.43), which significantly differed with most of the studied interactions.

Key words : Myrtle, *Myrtus communis* L., BA, humic acid.

INTRODUCTION

Myrtle (*Myrtus communis* L.), is an evergreen shrub belongs to the Myrtaceae family which includes approximately 90 genus and 2,800 species (Govaerts *et al*, 2008). Myrtle is one of the cutting and formation plants and its cultivation spreads in the temperate and warm zones. The leaves of this plant are small, oval or spherical, overlapping, smooth, glossy and with an aromatic smell. The flowers are white and the fruits are simple, soft, black and embodied shape which can be eaten fresh or dried to be a spice, while the seeds are white with a thick coat (Mouterde, 1983). This plant has great medical importance because it contains a pilot oil that is used as a disinfectant for germs, skin disease therapy, and in the preparation of some cosmetics (Bonjar, 2004; Hayder *et al*, 2004). The myrtle leaves, flowers and bark produce oil known as Angels Water, which has an aromatic

refreshing aroma and has a role in the perfumery industry (Jimenez and Boelense, 1992) and this oil has analgesic properties of pain (Twaij and El-jalil, 2009). The leaves contain a disinfectant antioxidant materials (Gortzi, 2008) and the mature fruits are rich in vitamins, so they used in the food industry, and added to some foods to give a distinctive flavor (Akin *et al*, 2010).

Foliar spraying is an important method to provide the plant with the main and secondary nutrients as well as other chemicals such as growth regulators, and most plants have the ability to absorb these substances by leaves, which is more efficient and ensuring for the plant compared with the adding to the soil method, that cannot be absorbed by roots when the soil conditions are inappropriate (Kuepper, 2003; Murtic *et al*, 2012). Cytokinines are growth regulators that have a role in regulating the plant's biotic events and have an impact