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EFFECT OF IRRIGATION INTERVALS AND ORGANIC FERTILIZATION ON PRODUCTIVITY OF *MENTHA LONGIFOLIA* L. PLANT UNDER MIDDLE SINAI CONDITIONS

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ABSTRACT

The field experiment was conducted during two seasons of 2014 and 2015 at El-Maghara Research Station - Desert Research Center, North Sinai Governorate, on order to investigate the effect of different irrigation intervals and organic fertilization on *Mentha longifolia* plant in a split plots design. The main plots were irrigation intervals (every 3, 5 and 7 days), the sub plots were the organic fertilization (5, 10 and 20 m^3 compost/fed). The results showed that, irrigating every 3 days significantly increased the plant height (in second cuts), number of branches/plant, fresh and dry weights/plant and yield of herb/fed, volatile oil percentage, oil yield/fed, N and total carbohydrates content. Also, treating the plants with the third level of organic fertilization (20 m^3/fed) recorded a significant increase in the same parameters. While, using 10 m^3/fed gave significantly increase in volatile oil percentage compared with 5 and 20 m^3/fed. The best results from all parameters were obtained with irrigation intervals every 3 days with compost at 20 m^3/fed treatment. While, the main component of the volatile oil resulted from this treatment was Pulegone (40.84%), followed by Menthone (28.63%), 1,8-Cineole (19.00 %), α-Terpineol (1.69 %), P-Pinene (1.60 %), Isopulegone (1.14 %) and α-Pinene (0.86 %). On the other hand, the highest volatile oil percentage obtained by irrigated the wild mint plant every 3 days with compost at 10 m^3/fed, the main component of the volatile oil resulted from this treatment was Pulegone (45.59 %), followed by Menthone (30.33 %), 1,8-Cineole (14.89 %), P-Pinene (1.73 %), α-Terpineol (1.06 %), α-Pinene (0.99 %) and Isopulegone (0.99 %).

Key words:irrigation intervals,*Mentha longifolia*, organic fertilization