Evaluation of Population Density and the Impact of Aphid (*Macrosiphoniella Sanborni*) on Morpho-Physiological Traits of Different Chrysanthemum (*Chrysanthemum Morifolium*) Cultivars

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Abstract

Chrysanthemum aphid (*Macrosiphoniella sanborni*) is one of the most important pests of chrysanthemum (*Chrysanthemum morifolium*); while there is little information about the interaction of chrysanthemum and chrysanthemum aphid. In the present study, interaction of different chrysanthemum cultivars and aphid populations was assessed through evaluation of morpho-physiological traits. For this purpose, 14 chrysanthemum cultivars were cultivated in a greenhouse at Isfahan University of Technology, Isfahan, Iran, using a factorial experiment in a completely randomized design with three replications. According to the results of analysis of variance, presence of aphid significantly affected all measured plant's growth parameters. The studied traits showed negative responses to stress conditions. The highest reduction effect was related to photosynthesis. Also, the respiration rate was increased in relation to photosynthesis among the infected plants. In addition, presence of the pest reduced the proportion of open buds to total buds on the plant, decreased plant height and delayed flowering period among the infected plants. Although the growth of aphid population in different cultivars was not exactly the same during different days, but the trend was relatively similar. Despite the relatively high number of aphids on the flowers of "Ordibehesht" cultivar, they still had good quality. Overall, based on the results of this study, aphids can significantly affect the chrysanthemum plant's vegetative and reproductive growth.

Keywords: Ornamental plants, Plant pest, Vegetative growth, Reproductive growth.

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