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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