Evaluation of some physiological indices of resistance in different varieties of cucumber (*Cucumis sativus* L.) against cotton aphid, *Aphis gossypii*

A. Moghbeli Gharaei[1], A. Estaji[2] and Sh. Shahidi-Noghabi[*1]

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Abstract

Cotton aphid, *Aphis gossypii* Glover (Hem.: Aphididae) is one of the most important pests in greenhouses and farms that decreases the quantity and quality of the product. Besides several plant viruses transmit by this pest such as cucumber mosaic virus and watermelon mosaic virus. The aim of this study was to evaluate the effect of cotton aphid feeding on some physiological parameters that are involved in plant resistance in four varieties of cucumber plants (Delta, Super Domino, 2201 and hybrid Luna). This experiment was done as factorial biased on completely randomize design with three replication. The results revealed that the amount of phenol, soluble sugar and sucrose were increased as plants were exposed to cotton aphid and Delta had the greatest amount of increase among cultivars tested. Also, the amount of photosynthetic pigments, starch, soluble proteins and concentrations of iron, copper, zinc and manganese were significantly decreased by feeding of aphid. According to the results of this research it can be concluded that different cultivars have different reactions to the damage of cotton aphid and phenol, proline, soluble sugars and sucrose content of plants were increased in response to the cotton aphid damage. From this results, it can be concluded that among the tested cultivars, Delta may have more potential to show resistance than other cultivars tested against cotton aphid damage.

Keywords: Cotton aphid, Phenolic compounds, Proline, Mechanisms of resistance.

1. Dept. of Plant Protect., Faculty of Agric., Vali-e-Asr Univ. of Rafsnajan, Rafsanjan, Iran.
2. Dept. of Hort. Sci., Faculty of Agric., Vali-e-Asr Univ. of Rafsanjan, Rafsajan, Iran.
*: Corresponding Author, Email: shahidi@vru.ac.ir