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Evaluation of the Susceptibility of some Eggplant Varieties and the Role of Their Biochemical Compounds in Resistance to the Leafhopper *Amrasca biguttula*

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Abstract:

A field study was conducted to evaluate the susceptibility of four eggplant varieties (Barcelona, Jawaher, Nasr, and Capto) against leafhopper *Amrasca biguttula biguttula* at the Agricultural Research Station at the University of Basrah during the grown season of 2023/2024. The results indicated that the eggplant varieties differed significantly in their susceptibility to the leafhopper. Barcelona was found to be the most susceptible variety, followed by Nasr and Jawaher, while Capto was identified as the most resistant. The population density of adults and nymphs increased in early January and then decreased toward the end of October of 2023.

The studied varieties also differed in their biochemical resistance traits and the concentrations of metabolic compounds that may contribute to resistance. These compounds included plant pigments (chlorophyll and carotene), carbohydrates, proteins, and phenols. The highest chlorophyll content was found in the Jawaher variety, with the lowest observed in the Nasr variety. Carotene content showed no significant differences between varieties. However, carbohydrate content varied significantly, with Nasr showing the highest content, followed by Jawaher, and the lowest content found in Barcelona and Capto. Protein content was highest in the Jawaher and Barcelona varieties and lowest in Nasr and Capto. Phenolic content also varied among the eggplant varieties, though no significant differences were found between them

Keywords: Leafhopper, Eggplant cultivars, Population density, Biochemical trait