

Metabolic changes in barley seedlings at different aphid infestation levels

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Different infestation levels with the greenbug (*Schizaphis graminum* Rondani) were correlated with physiological parameters and several metabolite concentrations in young barley plants (*Hordeum vulgare* cv Aramir). Leaf water potential, chlorophyll content, carbon dioxide assimilation and total soluble carbohydrates decreased significantly with more than 18 aphids per plant. Conversely, proline concentration increased with more than 18 aphids. With 100 individuals per plant, sugar concentrations decreased five times with respect to the non-infested control. Similar changes were observed in plants subjected to drought stress. These results suggest that several metabolic changes that occur in barley infested by a large number of aphids may be due in part to the lower leaf water potential caused by the insect. © 1994.