

Stress Alterations in Growth Parameters, Pigment Content and Photosynthetic Functions of *in vitro* Cultured Plants

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Effects of different concentrations of glucose, sucrose and the natural growth regulator, triacontanol were studied under the unfavourable stress conditions of micropropagation of two woody plants, *Sorbus rotundifolia* L. and *Prunus × davidiopersica* 'Piroska'. After 4–6 weeks of cultures, the number and length of shoots, the photosynthetic activity as well as the chlorophyll, carotenoid and anthocyanin contents were investigated. As shown by the growth parameters, the optimal carbohydrate concentration was between 1.5–2.5%, whereas in higher concentrations, a definite inhibition could be observed. A similar response was found in changes of the anthocyanin content in *Prunus × davidiopersica* 'Piroska', but this effect was less pronounced with the photosynthetic pigments in both species. The Fv/Fm ratio representing the quantum yield of photosynthesis was low due to the inhibitory effect of stress and altered significantly by changing the carbohydrate concentrations. In all cases, the addition of 2–4 µg triacontanol/l further enhanced the stimulating effect of the optimal carbohydrate concentrations, which indicated the specific importance of the appropriate hormone balance under such stress conditions.