

**MORPHOGENETIC RESPONSE TO PLANT GROWTH REGULATORS
IN TRANSFORMED AND UNTRANSFORMED *HYPERICUM PERFORATUM* L.
CLONES**

JANA KOPERDÁKOVÁ^{1*}, ZUZANA KATKOVÈINOVÁ¹, JÁN KOŠUTH¹, ANNALISA
GIOVANNINI², AND EVA CELLÁROVÁ¹

¹Institute of Biology and Ecology, P. J. Šafárik University,
23 Mánesova St, 041 54 Košice, Slovakia

²CRA - FSO, Experimental Unit for Floriculture and Ornamental Species,
corso Inglese 508, I-18038, Sanremo (Imperia), Italy

e-mail:jana.koperdakova@upjs.sk

Received January 8, 2009; revision accepted February 25, 2009

This study examined the effects of different exogenous auxins and cytokinins at 0.1-5.0 mg·l⁻¹ concentration on shoot cuttings of two *H. perforatum* clones transformed with a wild agropine strain of *A. rhizogenes* and one untransformed clone. Their sensitivity to the auxins varied and showed concentration-dependent behavior, and the response to auxins differed between the transgenic clones. The number of cuttings of transgenic clones capable of root formation, and the onset of rooting on most of the media with auxins lagged behind the control. The number of differentiated shoots of the transgenic clones on hormone-free medium was two to three times higher than that of the untransformed control. Regenerated shoots of the transgenic clones on basal medium branched much less than the nontransgenic clone. The transgenic and control clones differed in their ability to form shoots on media supplemented with cytokinins. Increased cytokinins led to differentiation of shorter shoots with fewer leaf pairs. Because gene expression studies have shown integration of *rolABC* genes, their possible impact on the type of morphogenetic response is discussed.

Key words: Hairy root-regenerants, plant growth regulators, *rol* genes, shoot cuttings, St. John's wort.