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EXPRESSION OF AN *ARABIDOPSIS* ASPARTIC PROTEASE IN *PELARGONIUM*

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Arabidopsis thaliana transgenic plants with constitutive over-expression of the aspartic protease gene At2g28010 (named CDS10) showed a bushy, multi-branching dwarf phenotype. In order to obtain compact plants of ornamental interest with an analogous phenotype in Pelargonium zonale, a tall cultivar (Boda Gitana Salmon) was transformed to over express the A. thaliana CDS 10 gene under the 35S promoter. Twenty seven transgenic lines were obtained with different levels of expression after gold particle bombardment and regeneration. Some of them showed indeed a bushy phenotype with a higher number of branches and a dwarf phenotype. However, an increase in the number of branches correlated with a decrease in the number of petals in the flowers. So the plants that were of interest from the compact habit point of view, had lost the double flower trait, and exhibited only 5 petals/flower which were also smaller than those from double flowers from the non transformed plants. Intermediate phenotypes with semidouble flowers and higher number of branches but without a compact phenotype were also observed. In order to determine if it was genotype related two other cultivars were transformed, Mirada Violet and Mirada Simple Pink double and single flower cultivars respectively. Transgenic plants showed indeed a higher number of branches and single flowers. Even if the busy phenotype was of interest in order to get a higher number of cuttings/plant and a compact phenotype, the pleiotropic effects of the over-expression of the A. thaliana CDS 10 gene on the flowers are too strong meaning it is only of interest in single flowered cultivars which are a small share of the market.

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