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Biotechnological Methods of Obtaining Brand new Decorative Characteristics of *Linum grandiflorum* Desf.

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Aim of the study: *Linum grandiflorum* Desf. is widespread decorative plant, however it possesses petty polymorphism of flower shape and corolla colour. For these indicators are of importance in determination of variety we decided to assay different biotechnological methods for approaching this purpose. There is small amount of publications on biotechnology and genetic transformation of *Linum grandiflorum*, so we needed to optimize known techniques.

Material and Methods: Seeds of *Linum grandiflorum* two forms, rubrum and album, were used. Also we took *Linum usitatissimum* as an example for its techniques are worked out. We used 5 % sodium hypochlorite solution (exposure 15 min.) for sterilisation and unsterile control. For cultivation Murashige and Skoog (MS) and Gamborg (B5) medium with growth regulators BAP, NAA and 2,4-D in different concentrations were used. To obtain transformed cells we applied different methods of agrobacterial transformation including those modified by us. As a marker gene we took *gfp* as well as selective gene *nptII*.

Results: Technique of introduction *Linum grandiflorum* seeds of two forms *in vitro* was worked out, comparative analysis of germination efficiency of seeds on nonhormonal medium B5, on this medium with 2 mg/l 2,4-D and in unsterile control was conducted. In order to better characterize the physiological status of the plant, we studied the influence of various growing conditions on the plant morphology. Also we obtained data on morphogenesis efficiency out of callus of different origin and age, data on rhizogenesis efficiency, spontaneous callusogenesis and interaction of endogenous and exogenous hormones. Supposition of differences between spontaneous callus somaclones was made. Work on adaptation and improving existing protocols of *Linum grandiflorum* agrobacterial transformation is continuing.

Keywords: *Linum grandiflorum*, somaclonal variability, genetic transformation, decorative.