Turkish Journal

of

Agriculture and Forestry

Keywords
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Turkish Journal of Agriculture and Forestry

Anther Culture Potential of Linseed (Linum usitatissimumL.): Effects of Genotypes and Pretreatment on Callus Formation and Differentiation

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Abstract: This study is concerned with the production of haploids of linseed. Anthers of eight genotypes were cultured both on solid and in liquid medium. It was found that callus induction rate was low in both media and also the cultivars significantly affected callus induction rate both on solid and in liquid medium. The cultivar Blue-Chip gave, on average, the maximum (3.67%) callus induction rate on solid medium and the cultivar Antares gave, on average, the maximum (3.35%) callus induction rate in liquid medium. The cultivar Norman produced callus on solid medium but did not produce any callus in liquid medium. On the other hand, the cultivar McGregor did not produce any callus in either solid or liquid medium. Pre-treatment of flower buds with cold significantly reduced callus induction rate by about four fold compared with the no pre-treatment on solid medium but increased (not statistically significant) callus induction rate by 25.8% in liquid medium. Although some callus induction was achieved in both on solid and in liquid media, no differentiation was observed when calli were transferred to regeneration medium.

Turk. J. Agric. For., 22, (1998), 553-560.

Full text: pdf

Other articles published in the same issue: Turk. J. Agric. For., vol. 22, iss. 6.