

عنوان مقاله:

Effective in vitro seed germination and direct regeneration from cotyledonary leaf explants of *Nitraria schoberi*

محل انتشار:

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خلاصه مقاله:

Nitraria schoberi (Ghar-e-Daghin in Persian) from Zygophyllaceae (Nitrariaceae) family is considered as a wonderful exquisite plant in terms of its economical, medicinal, animal feed, significant values and also its unique characteristics of being tolerant to the soil salinity, drought and erosion. On the other hand, this plant is challenging with severe problems such as seed dormancy, plant growth inhibitors and also hard seed coat which lead to retard germination and subsequently to reduce the chance of life and reproduction. The present study was conducted for the first time to cope with its seed germination obstacles and to induce plantlet regeneration in *N. schoberi* through tissue culture method. Effect of cotyledonary leaf and hypocotyl explants and various concentrations of plant growth regulators were studied on shoot and root induction and further development. Based on the obtained results, culturing seeds after removing its seed coat effectively improved germination rate (۸۰%) within a week. Whereas, germination of seeds with seed coats required a longer time (۴ weeks) and showed a sharp decline in percentage (۱۰%). At the next step, culturing cotyledonary leaf explants on shoot induction media including MS medium supplemented with BAP (۲.۰ mgL⁻¹) and IBA (۰.۵ mgL⁻¹) gave the highest shoot regeneration rate (۹۳.۳۳%), with average shoot number per explant (۳.۶۷) and shoot length (۴.۶ cm) after ۶۰ days. Hypocotyl explants showed no response to shoot induction treatments even after ۶۰ days. Regenerated shoots were rooted on the MS medium supplemented with IAA (۱.۰ mgL⁻¹) alone or in combination with IBA (۲.۰ mgL⁻¹). Finally, all regenerated plantlets were acclimatized and transferred to the green house successfully with ۷۰% survival rate.

کلمات کلیدی:

Nitraria schoberi, In vitro culture, Seed germination, Direct regeneration, Plant growth regulators

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