

SID



سرویس های ویژه



سرویس ترجمه تخصصی



کارگاه های آموزشی



بلاگ مرکز اطلاعات علمی



سامانه ویراستاری STES



فیلم های آموزشی

کارگاه های آموزشی مرکز اطلاعات علمی



مقاله نویسی علوم انسانی

مقاله نویسی علوم انسانی



اصول تنظیم قراردادها

اصول تنظیم قراردادها



آموزش مهارت های کاربردی در تدوین و چاپ مقاله

آموزش مهارت های کاربردی در تدوین و چاپ مقاله

Effect of Cultivar and Density of Cultured Cotyledons on Shoot Regeneration in Rapeseed (*Brassica napus* L.)

Kahrizi^{1*}, D., Salmanian², A. H. and Zebarjadi¹, A. R.

Abstract

The objective of the present research was to study the effect of genotypes (2 commercial cultivars of rapeseed, PF-7045-91 and SLM-046) and explant densities (15 and 30 cotyledons in 10 cm in diameter Petri dishes) on shoot regeneration. Results showed that there were significant differences between rapeseed cultivars and explant densities, but no significant interaction effect was observed between investigated parameters. The cultivar PF-7045-91 was better regenerated with average of 85% regenerated cotyledons than the other one with 62%. Higher percentage of regeneration (87%) was also recorded for treatment with 15 cotyledons in Petri dish rather than 30 cotyledons.

Keywords: Rapeseed, Cotyledon, Regeneration

References

- Burton, G. W. and de Vane R. W. 1953. Estimating heritability in tall Fescue (*Festuca arundinacea*) from replicated clonal material. *Agronomy Journal* 45, 478-481.
- Cheng, P. K., Lakshmanan P. and Swarup S. 2001. High frequency direct shoot regeneration and continuous production of rapid-cycling *Brassica oleracea* in *in vitro*. *In Vitro Cellular and Developmental Biology* 37: 592-598.
- Economic Research Service (ERS). 2001. Oil crops situation and outlook. OCS-2000, Oct. 2001. ERS, USDA. p. 66.
- Evan D.E., Coleman, J.O.D. and Kearns, A. 2003. *Plant Cell Culture*. Bios Scientific Publishers. Pp 153-158.
- Hooykass, P. J. J. and Schilperoord, R. A. 1992. Agrobacterium and plant genetic engineering. *Plant Molecular Biology* 19: 15-38.
- Johnson, H. W., Robinson H. F. and Comstock R. W. 1955. Estimates of genetic and environmental variability in Soybeans. *Agronomy Journal* 47, 314-318.
- Kahrizi, D., Arminian, A., and Masomi Asl, A. 2007. B. *In Vitro Plant Breeding*. Razi University Publications.
- Kahrizi, D., Moieni A. and Bozorghpour R. 2000. Effect of genotype and hydrocarbone source upon androgenesis in hexaploid wheat (*Triticum aestivum* L.). *Seedling and Seed*. 16(1): 41-51.
- Kahrizi, D., Salmanian, A. H., Afshari A., Moieni, A. and Mousavi, A. 2007. Simultaneous substitution of Gly96 to Ala and Ala183 to Thr in 5-enolpyruvylshikimate-3-phosphate synthase gene of *E. coli* (k12) and transformation of rapeseed (*Brassica napus* L.) in order to make tolerance to glyphosate. *Plant Cell Reports* 26: 95-104.
- Kahrizi, D., Salmanian, A. H and Zebarjadi, A. 2007. Effect of plant genotype, explant and *Agrobacterium* strain on transformation efficiency in rapeseed (*Brassica napus* L.). *Modern Genetics Journal*. 2(3): 53-62.
- Menze, A. and Mollers, C. 1999. Transformation of different Brassica napus cultivars with three different strains of *Agrobacterium rhizogenes*. *New Horizons for an old crop. Proceeding of 10th International Rapeseed Congress*, Canberra, Australia.
- Mukhopadhyay, A., Arumugam, N., Nandakumar, P. B. A., Pradhan A. K., Gupta V. and Pental D. 1992. Agrobacterium-mediated genetic transformation of oilseed *Brassica campestris*: transformation frequency is strongly influenced by mode of shoot regeneration. *Plant Cell Reports* 11: 506-513.
- Murashige, T. and Skoog, F. 1962. A revised medium for rapid growth and bioassays with tobacco tissue cultures. *Plant Physiology* 15: 473-497.
- Ono, Y., Takahata, Y. and Kaizuma, N. 1994. Effect of genotype on shoot regeneration from cotyledonary explants of rapeseed (*Brassica napus* L.). *Plant Cell Reports* 14: 13-17.
- Pierik, R. L.M. 1987. *In vitro* of higher plants. Martinus Nijhoff Publishers, Dordrecht.
- Salmanian, A. H. and Kahrizi, D. 2007. Study on effect of genotype and explant type on shoot regeneration in rapeseed (*Brassica napus* L.). *Iranian Biology Journal*. 20(3): 171-179
- Smith, R. H. 2000. *Plant Tissue Culture. Techniques and Experiments*. Academic Press.
- Westhof, E. 1999. *Practical Statistics for Experimental Biologists*. 2nd edition by Wardlaw A.C.. John Wiley & Sons, Chichester, P. 255.

1. Assistant Professors, Department of Biotechnology Research for Drought Resistance, Faculty of Agriculture, Razi University, Kermanshah

2. Associate Professor. National Institute for Genetic Engineering and Biotechnology, Tehran

*: Corresponding author

- Zebarjadi, A. R., Jalali Javaran, M., Salmanian, A. H., Karimzadeh, G., Moeini, A. and Mousavi, A. 2006. Transformation of rapeseed (*Brassica napus* L.) plants with sense and antisense constructs of the fatty acid elongase gene. Iranian Journal of Biotechnology, 4(2): 79-87.
- Zhang, Y and Bhalla, P. L. 1999. Shoot regeneration potential from seedling explants of Australian cultivars of oil seed rape (*Brassica napus* L.). New Horizons for an old crop. Proceeding of 10th International Rapeseed Congress, Canberra, Australia.

To look at the figures and tables, please refer to the Persian text (pages: 1-6= 1-6).

Archive of SID

SID



سرویس های ویژه



سرویس ترجمه تخصصی



کارگاه های آموزشی



بلاگ مرکز اطلاعات علمی



سامانه ویراستاری STES



فیلم های آموزشی

کارگاه های آموزشی مرکز اطلاعات علمی



مقاله نویسی علوم انسانی



اصول تنظیم قراردادها



آموزش مهارت های کاربردی در تدوین و چاپ مقاله