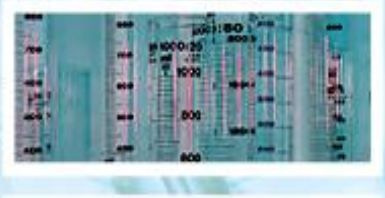
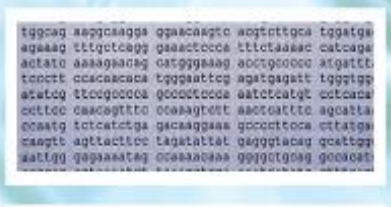
Volume 185, Supplement, September 2014

ISSN 0168-1656

ELSEVIER

Journal of BIOTECHNOLOGY





Supplement Issue

European Biotechnology Congress 2014

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Especially differences were identified among varieties of amylase composition.

http://dx.doi.org/10.1016/j.jbiotec.2014.07.379

Microclonal propagation of the rare species of the rubber plant tau-saghyz (*Scorzonera tau-saghyz* Lipsch. et Bosse)

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Rubber plant Tau-saghyz (*Scorzonera tau-saghyz* Lipsch. et Bosse) belongs to the family Asteraceae, a rare, endemic species with a reduced amount. This is a perennial plant 25–40 sm high, with the powerful branching caudexes and deep rod root. The content of rubber in roots is about 20–40% of the dry weight of roots it depend on an age and a cultivar. It was established that the physiological statement of explants and compound of a medium influence on an efficiency in vitro cultivation. A rapid multiplication rate could be obtained from leaf explants by combining the phytohormones in MS medium. Addition of GA to MS medium containing BA and NAA resulted in an increase in mean numbers as well as mean length of the shoot. It implies that cytokinin in combination with GA and auxin plays vital role in organogensis and further regeneration from leaf explants of *S. tau-saghyz*. This is the first report in *S.-saghyz* with protocol for direct organogenesis and regeneration from leaf explants. Our protocol has great potential for rapid multiplication, propagation and conservation of rare species *S. tau-saghyz* Lipsch. et Bosse and also for creation a collection of Tau-saghyz, representing scientific and commercial interest.

http://dx.doi.org/10.1016/j.jbiotec.2014.07.380

Transgenic expression of rotavirus capsid protein (VP7) in alfalfa for edible vaccine

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Rotavirus is the cause of severe diarrheal disease in infants and young children worldwide. WHO has estimated that the number of deaths from rotavirus is over half a million in children under 5 years old every year. The plant system is the ideal strategies for the production and oral delivery of vaccines. The VP7 gene (0.98 kb) encoding surface antigen of human rotavirus was employed to develop edible vaccine using transgenic plant. Gateway vector pB7WG2D harboring bar gene as a selectable marker was used for the construction of plant transformation vector. Alfalfa was transformed with agrobacterium-mediated method. A hundred of transgenic plants were obtained and confirmed by genomic PCR, of which six transgenic lines expressing VP7 protein in high level were selected by ELISA, which were reconfirmed by Southern Blot analysis. The VP7 protein in transgenic plants was also identified by Western Blot analysis. To test immunogenicity, alfalfa extracts were orally administered to mice once daily for 3 weeks, and mice fed with the transgenic alfalfa line elicited IgG and IgA antibody responses. In future, we will assess the neutralizing activity of the antibodies raised from the mice immunized with the transgenic plants.

http://dx.doi.org/10.1016/j.jbiotec.2014.07.381

Research concerning the quality of some food industry rye batches

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There are numerous ways in which rye can now be used in food industry. Considering the continuous ascending trend in the number of food commodities manufactured using rye, we aimed the improvement of rye based recipes for increasing the nutritional value in the biotechnology of bakery products. We used 10 batches of rye received for processing into breadstuffs, in a special facility. The available standards for the assessment of chemical, physical and sensory parameters of rye seeds and flour were used. The study was focused on sensory analysis, hectoliter mass, humidity and foreign material assessment. The taste, appearance, color and smell of rye seeds were found to be normal, adequate for healthy rye. The rye seeds mass was proven to have mineral (stones) and organic impurities (flaw seeds, straws, leaves). All rye flour investigated was found to have normal appearance, smell, taste and color, all features being appropriate for the plant species. Results concerning aflatoxin, ochratoxin, deoxinivalenol and zearalenone content indicated no exceeding of the residue limits. The sensorial analysis results allow the ranking of the analyzed rye samples into breadstuffs rye, according to the accepted standards. The analyzed rye seeds and flour are appropriate for being processed into breadstuffs.

http://dx.doi.org/10.1016/j.jbiotec.2014.07.382

Heat stress affects XET activity in durum wheat roots: Biotechnological implications

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Biotechnological alterations of expression, intracellular traffic, localization and activity of plant cell-wall modifying enzymes is a key target to improve crop physiological characteristics. In this