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研究论文

大豆幼胚子叶体细胞胚诱导主要影响因素的研究

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摘要 本研究选用东北地区4个主栽大豆品种的幼胚子叶,探讨了培养基中氮源、生长素和蔗糖,pH值和低温预处理对体细胞胚诱导的影响;并首次将低温预处理和pH=7.0的培养基应用到体细胞胚诱导中. 结果表明,MSB培养基附加40 mg/L 2,4-D和6%蔗糖,其体细胞胚诱导率和诱导效率最高,分别为49%和2.94%. 于4℃低温预处理的材料,在pH=7.0的培养基上诱导效率为4.46%,与对照的结果达到1%的极显著差异. 基因型与低温预处理的时间存在相互作用,不同基因型低温预处理的最适时间为1～3天.

关键词 大豆(Glycine max L.) 体细胞胚诱导 氮源、 生长素和蔗糖 pH 低温预处理

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Study on Main Factors Influencing Somatic Embryo Inducting from Immature Cotyledon of Soybean(Glycine max L.)

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Abstract Using immature cotyledon of four main soybean cultivars of Dongbei district, this paper focused on the influence of medium component of nitrogen、 auxin and sucrose, pH and low temperature pretreatment on somatic embryo induction; For the first time, low temperature pretreatment and pH=7.0 medium were applied to somatic embryo induction. The results showed that, High efficient medium of inducing somatic embryo was MSB+40 mg/L 2,4-D +6% sucrose which attained the highest percentage of somatic embryo induction and the efficiency of induction, 49% and 2.94% respectively in this work. Immature cotyledon pretreated with 4℃ and induced on pH=7.0 medium achieved 4.46% efficiency of induction, which is 1% significant difference with the result from control. The interaction between genotypes and duration of low temperature pretreatment exits and the optimal low temperature pretreatment duration of different genotypes varied from 1 to 3 days.

Key words Soybean (Glycine max L.) Somatic embryo induction The component of nitrogen、 Auxin and sucrose pH Low temperature pretreatment

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