

研究论文

玉米获白×莱1029的悬浮细胞系的建立及其再生植株的研究

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摘要 利用玉米获白×莱1029的未成熟胚诱导的愈伤组织, 系统地研究了愈伤组织的改良、悬浮细胞系的建立及其分化。结果表明, 获白×莱1029的愈伤组织在高硝态氮的培养基上, 经过调节2, 4-D的浓度、渗透压和NaCl的浓度, 选择得到了黄色、小颗粒状结构、不分泌粘液、快速生长和易于悬浮的酥脆愈伤组织; 在悬浮培养初期, 经过高浓度2, 4-D的启动, 短时间内先后建立了4个悬浮细胞系, 并对其中一个系的生长特性进行了鉴定; 采用过渡分化的方法, 悬浮细胞系再生了7株完整、健壮的试管苗。文章还对愈伤组织改造中所采用的措施进行了单因子分析, 对有关问题进行了讨论。

关键词 [玉米悬浮细胞](#)、[组织培养](#)、[植株再生](#)

分类号

Study of Establishment of H × L Genotype Suspension Cell Lines Capable of Plant Regeneration in Maize

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Abstract The whole establishment process of suspension cell lines, including callus induction, callus texture modification, establishment and differentiation of suspension cell lines, was systematically studied with immature embryos from H×L genotype in maize. A kind of golden, non-mucilaginous, grainy texture, friable and fast growing callus systematically studied with immature embryos from H×L genotype which is suitable for suspension culture was obtained through modification of selected type II callus from H×L genotype on the modified MS medium with high level of nitrate nitrogen cooperated with adjusting 2, 4-D concentration, osmotic pressure, NaCl concentration. So far the four suspension cell lines have been established through several steps, particularly including short-period suspension culture of the modified callus in the liquid medium containing high concentration of 2, 4-D to switch on these cells adapting growth in liquid medium. Seven plantlets have been regenerated by using the method of transition differentiation of plated suspension cells on the solid media. This paper has also systematically studied appropriate concentration ranges of several factors used in the callus modification. Discussion has been made in several aspects.

Key words [Maize suspension cells](#) [Maize cell culture](#) [Plant regeneration](#).

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