

研究论文

# 小麦体细胞组织离体诱变效应研究

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**摘要** 小麦种子经30kR $\gamma$ 射线照射后,再从M1株取未成熟胚培养,用再生株当代(M2R1)的死苗率、不育株率、结实率及株高变化所反映的损伤程度与对照株(R1)比较,无明显差异;M3R2代的变异率也与对照R2相仿。5天龄幼胚用0.5kR照射处理后的再生株M1R1的损伤程度与对照相仿;M2R2的变异率随不同基因型而有增减,但变异率仍有显著提高。未成熟胚来源的愈伤组织经1kR照射处理的再生株C1R1的损伤加重,但变异率却提高3倍,有益变异增多。以上3种诱变处理,以愈伤组织照射处理结果较好,但照射量宜下降到0.5-1.0kR,幼胚照射效果次之。

**关键词** [变通小麦](#),[体细胞无性系变异](#),[离体诱变](#),[愈伤组织照射处理](#),[5天龄幼胚照射处理](#)

分类号

## Study on the Effect of in Vitro Mutagenesis of Somatic Tissue of Wheat

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**Abstract** The M2R1 regenerated plants derived from the immature embryo cultures of the M1 plants from the dry seeds irradiated with gamma rays at 30kR before sowing showed some physiological damage similar to the counterpart R1 plants, while M3R2 failed to increase variation frequency as compared to the control R2 plants. No significant differences of physiological damage between the M1R1 plants derived from 5-day-old embryo cultures irradiated at 0.5kR and the R1 control were found. Changes in variation frequency in M2R2 population strongly depended on the genotype tested. Most of them increased, others decreased, thus making the M2R2 average frequency much higher than R2 population. The C1R1 regenerated plants from immature embryo derived-calli radiation at 1kR suffered from serious damage expressing a higher percentage of sterile plants and seedling lethality, and lower seed setting rate, but the variation frequency of C2R2 went up 3 times as high as those of R2 control. Among the three treatments, the calli-radiation is likely to be superior to the other two for breeding use. It would be even better if the dose could be reduced to the range of 0.5-1.0kR. Young embryo radiation is also an acceptable candidate approach.

**Key words** [Wheat \(\*Triticum aestivum\*\)](#) [Somaclonal variation](#) [In vitro mutagenesis](#) [Calli-irradiation](#) [5-day-old embryo irradiation](#)

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