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$^{12}\text{C}^{6+}$ 离子辐照对4种农作物种子出苗率

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摘要

以能量为80 MeV/u的 $^{12}\text{C}^{6+}$ 离子为诱变源辐照油菜、胡麻、大葱和兵豆的干种子后, 研究了不同剂量处理对4种农作物M1和M2代种子出苗率及幼苗生长的影响。实验结果表明: 重离子所导致的M1代生物学效应因不同的物种而表现出一定的差异, 适当剂量C离子辐照促进了油菜和胡麻M1代出苗率和幼苗的生长; 而不同剂量的C离子辐照抑制了大葱的出苗率和幼苗的生长; 兵豆3个剂量下的出苗率 and 对照相差很小, 但90 Gy辐照有利于其生长。到了M2代, 4种作物辐照组的发芽率都低于各自的对照组; 30 Gy剂量下的油菜、胡麻和兵豆长势最好; 大葱依然是对照的长势最好。

Crops of *Brassica napus* L., *Linum usitatissimum* L., *Allium fistulosum* L. and *Lens culinaris* Medic. were irradiated by 80 MeV/u  $^{12}\text{C}^{6+}$  ion beams with doses of 30, 90 and 180 Gy. The germination rates and heights of seedlings of M1 and M2 generation of these four plants were studied. The results indicated that germination rates and average heights of the *B. napus* and *L. usitatissimum* were improved by appropriate dose treatment, while great suppression was found in the irradiated groups of the *A. fistulosum*. As far as the *L. Culinaris* was concerned, little differences was observed on M1 germination rate, but the 90 Gy irradiation was favorable to growth of plant. The treatments with 30, 90 and 180 Gy were inferior to contrast one on M2 germination rate of the four species. Seedlings of M2 generation of the *B. napus*, *L. sitatissimum* and *L. culinaris* under 30 Gy grew better than the other groups, while the best performance of the *A. fistulosum* was shown by the control group.

关键词  [\$^{12}\text{C}^{6+}\$ 离子](#); [出苗率](#); [大葱](#); [油菜](#); [胡麻](#); [兵豆](#)

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