

园艺—研究报告

60Co辐照对澳洲坚果种子萌发与幼苗形态的影响

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摘要:

澳洲坚果品种‘云澳57号’、‘云澳51号’、‘云澳41号’、‘云澳58号’的种子以剂量率为10 Gy/h的60Co-γ射线进行辐照处理, 剂量分别为40 Gy、120 Gy和200 Gy。结果表明: 60Co-γ射线辐照对澳洲坚果种子萌发有抑制作用, 且不同品种对辐照剂量的敏感性不同; 较低剂量(40Gy)的60Co-γ射线辐照会显著提高品种‘云澳41号’的萌发率, 而品种‘云澳57号’则对所有剂量的辐照均不敏感; 随着60Co-γ射线辐照剂量的增加, 4个澳洲坚果品种的幼苗真叶长度、宽度和叶面积呈显著降低趋势; 且60Co-γ射线辐照会使幼苗茎干变短、茎围增粗, 其变化幅度因品种而异。

关键词: 幼苗形态

Effects of 60Co Irradiation on Seed Germination and Seedling Growth of Macadamia Cultivars

Abstract:

Seeds of four macadamia cultivars ‘YunMac 57’, ‘YunMac 51’, ‘YunMac 41’ and ‘YunMac 58’ were irradiated by 60Co-γ ray at 40 Gy, 120 Gy and 200 Gy with the dose rate of 10 Gy/h. Effects of 60Co-γ ray on seed germination and seedling growth of macadamia were observed. Results indicated that the seed germination of macadamia were inhibited by 60Co-γ ray irradiation, the irradiation dose sensitivity of four cultivars were different. The seed germination rate of ‘YunMac 41’ was increased significantly at 40 Gy, but ‘YunMac 57’ was insensitive to the dose range in this study. The true leaf length, width and area were decreased significantly with the increasing of irradiation dose. The stem length of seedling from the irradiated seed was shorter than CK and the stem diameter bigger, but the variation range varied with different macadamia cultivars.

Keywords: seedling growth

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