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**EFFECT OF RADIATION SPECTRAL COMPOSITION ON GERMINATION AND GROWTH OF CHESTNUT *IN VITRO***

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The effect of radiation quality (350 - 740 nm) on development of zygotic embryos and plantlets of open-pollinated Japanese chestnut (*Castanea crenata* S. et Z.) was studied. Two types of explants were exposed for four weeks to cool white (control), red, blue, red+blue and red+far-red radiation from a light-emitting-diode system. While zygotic embryos showed positive photoblastic behaviour, their germination was inhibited under blue radiation. Both hypocotyl elongation and root development were positively correlated with red radiation. The emergence of primary leaves and their expansion were faster in blue than red condition. In plantlet explants, red and red+far-red radiation significantly increased formation and growth of roots, whereas blue light reduced rooting. Therefore, radiation quality appears to influence some steps in the development of zygotic embryos and plantlets in chestnut.