## B-119: *In vitro* direct shoot regeneration from gamma-irradiated root segments of potato

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Chimerism in shoot tips is a common phenomenon that occurs after mutagenic treatment. Application of in vitro culture techniques can help to overcome or reduce chimerism. The main objective of this investigation was to select the best type of explant and optimum culture conditions that could give rise to low-chimeric adventitious buds of potato *(Solanum tuberosum L.)* from which plants with low chimerism may be obtained.

Meristems (1-2 mm) from disinfected potato sprouts of cv. Desiree were aseptically excised and in *vitro* cultured on a modified Murashige and Skoog (MS) medium (1962) supplemented with 1.0 mg/1 6-benzylaminopurine (BAP) and 0.1 mg/1 indole-3-acetic acid (IAA). Proliferated shoots from these meristems were successfully used to multiply new plantlets. After 2 months, when the roots elongated, root segments (RS) were excised from the in vitro plantlets and cultured on an MS medium using 12 different hormonal combinations (0.0-7.0 mg/1 BAP and 0.0-1.0 mg/1 IAA). Successful adventitious shoot regeneration in RS was observed in the MS medium supplemented with the hormonal combination of 5.0 mg/1 BAP and 0.5 mg/1 IAA. This medium was selected, therefore, for experiments on shoot regeneration using irradiated RS. The $LD_{50}$ for RS was found to be between 10-20 Gy. A high degree of direct shoot regeneration was recorded when 15-20 mm long, gamma- irradiated (8.0 Gy) RS were transferred onto the refreshed regeneration medium on the day of irradiation.