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RADIOSENSITIVITY TEST ON GAMMA IRRADIATED COFFEA ARABICA VAR. VENECIA IN VITRO ZYGOTIC EMBRYOS

In vitro culture is an important tool for coffee breeding programs. Mutation breeding in combination with in vitro techniques and other biotechnologies offers opportunities for the generation of new improved coffee varieties in a shorter period as compared to classical plant breeding. The plant material used were fruits of *Coffea arabica* var. Venecia. The fruit pulp was removed, and the seeds washed with soap and water, dried and stored for use. For in vitro culture of zygotic embryos, the seeds were immersed in 70% alcohol and disinfected with sodium hypochlorite (2.5% active ingredient). Then, the zygotic embryos were excised, placed vertically in culture medium for subsequent irradiation treatments. Four treatments were performed 0, 10, 20 and 30 Gy, each with ten repetitions and 10 embryos per repetition. Cotyledon, hypocotyl and root length and width were determined in the regenerated plantlets, in determined days after irradiation. The results show different effects of the irradiation treatments regarding the measured characteristics. It was observed that the length and width of the cotyledon decrease with increasing applied doses. As to the root length and hypocotyl width there was no specific trend, however, some doses had a stimulating effect to growth in comparison with the non-irradiated treatment. The hypocotyl length showed a growth reduction different to the non-irradiated treatment although the dose of 20 Gy is higher than 10 Gy and the root width have no differences in the sizes for all treatments. The results show growth reduction of at least three of the evaluated characteristics in response to the radiation dose.

Country or International Organization

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