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Abstract: Finger millet (*Eleusine coracana* (L.) Gaertn.) is a cereal grass mostly grown in dry land. It is a robust, tufted, tillering annual grass, up to 170 cm high. The inflorescence is a panicle with 4-19 finger-like spikes that resembles a fist when mature, hence the name finger millet. Its grain is readily digestible, highly nutritious and versatile: it can be cooked like rice, ground to make porridge or flour or used to make cakes. Finger millet is a popular food among diabetic patients in the country. Its slow digestion indicates low blood sugar levels after a finger millet diet thereby reacting as a safer food for diabetics. Consumption of finger millet prevents constipation and cholesterol. The present study was undertaken to standardize protocol for in vitro *Agrobacterium tumefaciens* mediated transformation of finger millet (variety RAU-8). This would enable application of biotechnological tools to this crop in future. Surface sterilized seeds were inoculated on Murashige and Skoog's medium supplemented with 2.0, 4.0 mg/l 2, 4-D for callus. For shoot multiplication after 15 days callus in a MS medium supplemented with combination of 2.0 mg/l IAA and 2.0 mg/l IBA gave best shoot-root regeneration than 2.0 mg/l BAP and 1.0 mg/l NAA. Out of different concentrations (25.0 mg/l, 50.0 mg/l, 75.0 mg/l and 100.0 mg/l) 100.0 mg/l kanamycin containing medium was found to be the best for transformant selection. Kanamycin tolerance test was done considering 3 stages (1) etiolation, (2) blackening and (3) death. For transformation, the explants were wounded and dipped in the Agro suspension. Co-cultivation was done for different time periods (5 min, 10 min, 15 min, 20 min, 25 min, 30 min, 1 hrs, 2 hrs and 3 hrs) of which 30 min was found to be the best transformation frequency in finger millet. About 25% of explants give rise to entire kanamycin resistant plantlets upon 21 days.

Description: *Agrobacterium tumefaciens* mediated transformation in finger millet (variety RAU-8)

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