ABSTRACT:

Current study provides an efficient screening system for transformed plant of Citrullus lanatus cv. Round Dragon harboring bar gene. The untransformed 5-day-old cotyledon explants were cultured on the shoot-inducing media supplemented with Basta® (0.2, 0.5, 1.0, 2.0 and 3.0 mg L-1) and without Basta® for 3 weeks and subcultured on fresh shoot-inducing media with the same media composition for another 3 weeks. The shoot growth on the cotyledon decreased, as the Basta® concentration increased. A complete inhibition of shoot growth was observed on growth medium supplemented with 2.0 and 3.0 mg L-1 of Basta®, respectively. For ex vitro condition, untransformed healthy plant leaves (derived from acclimatized in vitro plantlets) were leaf painted with an aqueous solution of Basta® at the concentration of 0.001, 0.01 and 0.1% (v/v) using writing brush. The sensitivity of untransformed plant tissues were evaluated based on tissue browning and necrosis due to herbicidal damage. Healthy plant leaves subjected to leaf painting assay showed serious necrotic within 3 days at the concentration of 0.1% (v/v) of Basta®. An efficient herbicide Basta® selection mode has been established via in vitro and ex vitro conditions of untransformed Citrullus lanatus cv. Round Dragon.