

Optimization of surface sterilization protocol and induction of axillary shoots regeneration in *Datura metel* L.

Rashmi Rekha Boruah, Tankeswar Nath, Manab Bikash Gogoi, Bidyut Kumar Sarmah
DBT-AAU Centre, Assam Agricultural University, Assam, India

Micropropagation is an efficient tool for mass propagation of true to type plants. The medicinal values of field grown plants are often affected by biotic and abiotic stresses unlike *in vitro* regenerated plants. It is important to optimize the conditions for *in vitro* regeneration in order to avoid microbial contamination and promote the availability of micropropagated plantlets. The objective of this work was to establish an optimized protocol for micropropagation of *Datura metel* L. Shoot tips from field grown plants were used as explants. Explants were surface sterilized using 1% sodium hypochlorite, 0.1% fungicide (Carbendazim) and 70% ethanol for different exposure timings (1 to 15 minutes). With an increase in exposure time of sodium hypochlorite, contamination of explants declined but blackening of tissues was observed. Among the tested sterilization steps, treatment of explants with 70% ethanol for 1 minute, 0.1% fungicide for 3 minutes and 1% sodium hypochlorite for 10 minutes showed the best result with minimum tissue death. Shoot proliferation was investigated on Murashige and Skoog (MS) basal medium supplemented with different concentrations of 6-benzylaminopurine (BAP) either alone or in combination with kinetin. Highest multiplication rate was observed on MS medium supplemented with BAP (0.5mg L^{-1}) and kinetin (0.5mg L^{-1}).

Biography

Dr. Boruah has completed her PhD from Department of Agricultural Biotechnology, Assam Agricultural University, Jorhat, Assam, India in 2017. During her PhD, she was accepted as a visiting scientist at CSIRO, Canberra, where she conducted research on transgenic chickpea for insect resistance from 2014-2016. She returned to India where she graduated and since then conducting research on endophytes with potential acaricidal properties from Datura and Argemone in the DBT-AAU Centre, Assam Agricultural University. She has published in the Indian Journal of Genetics and Plant Breeding for her research on transgenic chickpeas resistant to the pod borer, *Helicoverpa armigera*.