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Micropropagation of anti-diabetic plant *(Costus igneus)*

A K Sudha Vani and Uma Maheshwar Rao V
Avanthi Degree & PG College, India

Medicinal plants are used as an alternative for synthetic medicines for years. *Costus igneus* Nak., commonly known as fiery costus, step ladder or spiral flag or insulin plant is native to south and central America. It belongs to Costaceae. *Costus igneus* is an important medicinal herb which is known to reduce the levels of insulin in the case of diabetes mellitus. *Costus igneus* is propagated vegetative methods using rhizome pieces. However, the planting material shows a very low multiplication rate. The lack of seed setting spoiled the breeding of this plant. Conventional propagation is best with problem of poor seed viability, low percentage of germination and scanty delayed rooting of vegetative cuttings. Therefore, there is a need for alternative propagation method. Efficient protocol for micropropagation using various explants is developed. Shoot tips cultured on MS media with BAP 1.5 mg/l gave 4.8±0.2 shoots per explants and the average shoot length of 3.7±0.1 cm was obtained. Multiplication of shoots was on done on 0.5 mg/l BAP+0.5 mg/l NAA and an average of 6.5±0.17 shoots per explants was obtained. The results suggest that BAP in combination with NAA showed a synergistic effect resulting in more number of shoots. Establishment of roots could be achieved with 1 mg/l NAA and 1 mg/l IBA. This combination gave 11.10±0.30 with an average root length of 10 cm. The plantlets were hardened for 4-6 weeks in plastic bags with soil rite and fine sand in equal proportions. During this period, 90-95% humidity is maintained for the initial 6-8 days and they were transferred to plastic pots with thermal shade net and then to field. In the present study, the multiplication rate of a single explants around 800 matured plants could be obtained. So, an important medicinal plant known for its anti-diabetic property can be multiplied and propagated through tissue culture.

svaani65@gmail.com

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