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Plant hormones and interaction of plant growth regulators on tissue culture of *Rhododendron indicum* (Satsuki azalea)

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Abstract

Rhododendron indicum (Satsuki azaleas) belongs to the family Ericaceae, are evergreen shrubs, flowers and are one the world-famous in the gardens having a high use value. As one travels across North Carolina it is quite evident that azaleas are favorite ornamental plants for home gardeners and professional landscapers. The true *R. indicum* from Japan (1883) is a small, dense, semi-evergreen azalea rarely reaching three feet in height.

Adventitious shoot propagation is one of the plant regeneration pathways *in vitro*, and is employed extensively in plant biotechnology for micro propagation and genetic transformation, as well as for studying plant development.

The composition of different cytokinins on shoot propagation and node formation, are presented in this research, after 10 weeks. After sterilization, shoot tips of *Rhododendron indicum* with 15 mm length were collected and terminal meristems were cut. Explants were established on ½ Anderson medium with different cytokinins. Hormonal treatments studies in this stage included three levels of 2ip (0, 2, 10) Zeatin (0, 0.1, 0.5) and TDZ (0, 0.04, 0.2) *mg/l* that combination of two cytokinins together were studied. The results showed that 10 mg/l 2ip with 0.1 mg/l Zeatin was the best treatment for increasing shoot length and node number and 10 mg/l 2ip with 0.2 mg/l TDZ was the best treatment for increasing shoot number.

On the basis of available literature, this is the first and significant study regarding the comparative effect of different PGRs on *in vitro* propagation study of *R. indicum*. This significant study could be useful for large scale propagation and regeneration of this valuable bonsai.

Biography

Saiedeh Rahimi has completed her master's at the age of 31 in Biotechnology Engineering from Islamic Azad University, Science and Research Branch, Tehran-Iran. She is publishing a paper in an International Journal and has presented two papers in Internal Congresses. She has practical experience in modern establishment of tissue culture techniques. She has participated in more than 20 workshops about new techniques of chromatography, extraction of essential oils and plant extracts, and molecular methods for the identification of medicinal plants. She works as a Researcher at the Shahid Beheshti University Research Center that investigates biotechnology techniques on medicinal plants.