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## Regenerative competence in root explants of *Cattleya* 'Almakee': A study *in vitro*

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Beechey (1970) suggested possibility of using aerial roots in micro-propagating orchids. The utility of roots as explant source is being increasingly realized due to their easy availability, low oxidation rate and ease with which they can be planted. Keeping this in view, presently we report the possibility of using root explants from *in vivo* grown plants of Cattleya 'Almakee', a perfect quintessence of beauty, a progenator of large number of elite interspecific hybrids and favourite of the herbalists for its bone healing properties, is commonly called "Queen of Orchids". It extends in distribution from India eastwards to Thailand and is progressively losing its natural habitat and getting rare with every passage of time due to poor regeneration and extensive commercial collection.

The regenerative potential in the root explants of *in vivo* grown *Cattleya* 'Almakee' plants largely depend on the location of isolated explants from the main root and on the level and type of the growth regulators. Regeneration is affected by polarity all along the root axis of root. The regeneration is of basipetal gradient. The proximal explants responded to the presence of cytokinins (BAP/KN) in Mitra et al., 1976 medium. The benign effect of kinetin was accentuated in the additional presence of NAA in accord with earlier reports in *Cattleya* hybrid. The efficacy of BAP was obligatory to the presence of NAA, and it was required at 3 mg/l to elicit response in the explants. A similar BAP related autonomy was reported in *Oncidium varicosum*. The dark green color of regenerants in cytokinin (BAP/Kn) supplemented media is in accord with similar earlier reports. The effect of cytokinins (BAP/Kn) on chloroplast development is already indicated by Stelter and Laetsh (1965). The high survival rate of acclimatized plants is due to the fact that the root raised plantlets are more stable than plantlets derived from other parts. The regenerated plantlets were acclimatized and transferred to pots filled with moss, pine bark, brick &charcoal pieces (2:4:1:1) with 90% survival.

### Biography

Vishal Sharma completed his Ph.D. at the age of 27 years from Panjab University (Chandigarh). He has published more than 10 papers in reputed journals and serving as an Assoc. Prof. in Post Graduate Government College for Girls-11, Chandigarh (Panjab University).

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## Factors governing the variations in the contents of Biogenic Amines in the worker honey bee, *Apis mellifera* (L)

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The honey bees are well known for their behavior for effective communication. The biogenic amines exert a significant influence on the behavior in insects like honey bees. The present attempt is concerned with analysis of the levels of biogenic amines, like octopamine, dopamine and serotonin in the brain of worker honey bee, *Apismellifera* (L). The bioassay of the amines was carried out through the High Performance Liquid Chromatography (HPLC) with electrochemical detection. The influence of various factors on the levels of octopamine, dopamine and serotonin was analyzed. Exiting foragers were stressed by clamping their legs, which resulted in significant increase in the level of octopamine and serotonin after ten minutes. The seasonal variations in the levels of the three amines were found observed for the sampled from the colony during spring, summer and autumn. The levels of the three amines were highest during June - September, which corresponds to high levels of colony foraging activity. The variations in the levels of the amines may reflect seasonal changes in colony nutrition, population size or brood rearing activities. In comparison with the randomly aged worker bees, the newly emerged bees were found with significantly lower levels of the three amines in their brain.

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