

***IN VITRO STUDY OF NEOPICRORHIZA  
SCROPHULARIIFLORA (PENNELL) HONG***

**A DISSERTATION**

**SUBMITTED FOR THE PARTIAL FULFILLMENT OF  
MASTER'S DEGREE IN BOTANY**

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**LETTER OF APPROVAL**

This dissertation paper submitted by Srijana Shrestha entitled “*In vitro* study of *Neopicrorhiza scrophulariiflora* (Pennell) Hong” has been accepted as a partial fulfillment of Masters of Science in Botany.

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**CERTIFICATE**

This is to certify that the dissertation entitled “*In vitro* study of *Neopicrorhiza scrophulariiflora* (Pennell) Hong” submitted by Ms. Srijana Shrestha for the partial fulfillment of M.Sc. Degree in Botany is based on the results of experiments, carried out by her under my supervision. The dissertation or a part of thereof has not been previously submitted for any other degree.

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## ABSTRACT

Micropropagation of *Neopicrorhiza scrophulariiflora* (Pennell) Hong an important endangered medicinal plant, was taken for this investigation. The explants (root, internode, node and shoot tip) obtained from *in vitro* grown seeds were cultured on MS medium supplemented with different concentration of BAP and NAA.

Seeds were sown on MS medium and 40% of seed germination was found after 4 weeks. Shoot tip explant gave the most satisfactory result for shoot multiplication. Shoot tip explant cultured on MS + BAP (1ppm) + NAA (0.5ppm) produced maximum but reduced shoots. These microshoots with callus when cultured on MS hormone free media produced elongated shoots. MS media with BAP (1ppm) and NAA (0.5ppm) was found to be best for callus induction and shoot multiplication whereas elongation of shoot was done in hormone free MS media.

MS media without auxin and with auxins (IAA, NAA and IBA) were used to induce rooting. Among these, auxin free media induced longer roots without formation of callus at base of shoots whereas all other combinations with auxins produced basal callus and hairy roots. Rooted plantlets were transferred on the pot containing soil: sand: vermiculite in 1:1:1 ratio with high humidity.

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## LIST OF ABBREVIATION AND SYMBOLS

%	:	percent
°C	:	Degree Celsius
μM	:	Micro molar
BAP	:	Benzylaminopurine
BM	:	Basal media
CDB	:	Central Department of Botany
et. al.	:	et aleibi (and others)
FYM	:	Farm Yard Manure
IAA	:	Indole-3 Acetic Acid
IBA	:	Indole-3 butyric Acid
MAP <sub>s</sub>	:	Medicinal and aromatic plants
MS	:	Murashige and Skoog's medium (1962)
NAA	:	Naphthalene Acetic Acid
ppm	:	parts per million
UV	:	Ultra violet ray
Vol.	:	Volume
wt.	:	weight