

VARIATION AMONG DIFFERENT POPULATIONS OF *AZADIRACHTA INDICA* (NEEM) WITH RESPECT TO IN VITRO SHOOT PROLIFERATION AND NITRATE REDUCTASE ACTIVITY

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ABSTRACT: The study was conducted to understand the variation with respect to shoot proliferation in five populations of neem viz., Raigarh, Shahdol, Bilaspur, Chhindwara and Gwalior along with different combinations of BA and kinetin (cytokinins). Variation with respect to nitrate reductase activity in the *in vivo* and *in vitro* leaves of the five populations was also studied. Populations had a significant effect on *in vitro* shoot proliferation. The number of shoots per nodal segment varied significantly between the five populations. Raigarh population, followed by Shahdol and Gwalior had maximum number of shoots after 30 days of inoculation. Total number of nodes per nodal segment were also maximum in Raigarh population after 30 days of inoculation. The Nitrate reductase activity was found to be higher in the *in vivo* leaves than *in vitro* leaves in all the five populations. The results elucidate that variation exists in the response of different populations of neem during *in vitro* shoot proliferation and nitrogen assimilation and the importance of genetic make-up of mother plants from where ex-plants are collected.

Keywords: *Axillary bud proliferation, neem, nitrate reductase activity, populations, variation*

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