

Research Article

DOI: 10.15740/HAS/AJSS/12.1/135-142

# Effect of different growth regulator combinations on the per cent media browning in walnut *in vitro* studies using MS medium

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Received : 10.03.2017; Revised : 28.04.2017; Accepted : 11.05.2017

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## Summary

The present investigation on effect of different growth regulator combinations on the per cent media browning in walnut *in vitro* studies using MS medium was carried out in order to document the available genetic variability in walnut germplasm and to select elite walnut genotypes possessing superior attributes and quality traits. During the survey, data was recorded on one hundred fifty two (152) walnut trees growing in different areas of Kashmir valley. The study also involved establishment of response of elite walnut selections to different plant growth regulators in shoot morphogenesis. Woody species have been found to be far more difficult to clone *in vitro* than herbaceous plants. Poor response of the explants from mature woody species to *in vitro* manipulation is usually associated with the problem of browning and explant necrosis. The present studies were conducted on forced explants from three walnut selections (SKUAST 002, SKUAST 008, SKUAST 010). Murashiage and Skoog's basal medium supplemented with 0.3 mg/l<sup>-1</sup> Benzylamino purine and 0.1 mg/l<sup>-1</sup> indole-3-butyric acid gave best response in the establishment of initiating cultures, minimum media browning (80.44 %), minimum explant browning (78.22 %) and minimum mean browning score per explant (9.17 %). The survival (23.45%) and growth of the cultures (21.77%) was also found to be maximum in MS medium supplemented with BAP 0.3 mg l<sup>-1</sup> and IBA 0.1 mg l<sup>-1</sup>.

**Key words :** Wlanut, *Juglans regia* L., Variability, Yield component, Quality traits, Shoot morphogenetic response

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**How to cite this article :** Lone, I.A., Misger, F.A. and Banday, F.A. (2017). Effect of different growth regulator combinations on the per cent media browning in walnut *in vitro* studies using MS medium. *Asian J. Soil Sci.*, 12 (1) : 135-142 : DOI : 10.15740/HAS/AJSS/12.1/135-142.