

EFFECT OF TIME OF AIR LAYERING AND IBA CONCENTRATIONS ON THE ROOTING BEHAVIOUR OF PANT PRABHAT GUAVA (*PSIDIUM GUAJAVA* L.) UNDER SUB-TROPICAL CONDITION OF GARHWAL HIMALAYA

Dinesh Chandra Naithani^{1*}, Anant Ram Nautiyal², Deepak Kumar Rana¹ and Deepak Mewar¹

¹Department of Horticulture, School of Agriculture and Allied Science, H.N.B. Garhwal University (A Central University), Srinagar Garhwal, Uttarakhand, India-246174

²High Altitude Plant Physiology Research Centre (HAPPRC), School of Agriculture and Allied Science, H.N.B. Garhwal University (A Central University), Srinagar Garhwal, Uttarakhand, India-246174

Email: naithani.dinesh@yahoo.com

Received-07.01.2018, Revised-25.01.2018

Abstract: The present study were undertaken at the Orchard Section, Horticultural Research Centre and Department of Horticulture, Chauras Campus, School of Agriculture and Allied Science, HNB Garhwal University (A Central University), Srinagar Garhwal, Uttarakhand, India during the rainy season of the year 2016 to study the effect of time of air layering and IBA concentrations on the rooting behaviour of Pant Prabhat Guava (*Psidium guajava* L.). The experimental findings showed that the minimum days taken to root appearance (28.40days), maximum rooting percentage (92.20%), maximum number of roots per layer (24.80), maximum length of longest root per layer (14.20cm), maximum diameter of thickest root per layer (1.86mm) and maximum percentage of layers showing secondary roots (70.00%) were significantly superior when layering was done on 15th July and treated with 4500 ppm concentration of IBA.

Keywords: IBA, Rooting, Layering, Secondary roots

REFERENCES

BARI (2002). Annual Report of 2001-02. Fruit Research Station, BARI, Rajshahi. Pp. 23.

Baghel, M., Raut, U.A. and Ramteke, V. (2016). Effect of IBA concentrations and time of air-layering in guava cv. L-49. *Research Journal of Agricultural Science*, **7(1)**: 117-120.

Bhagat, B.K., Jain, B.P., Singh, C. and Chaudhary, B.M. (1998). Propagation of guava (*Psidium guajava* L.) by ground layering. *Journal of Research, Birsa Agricultural University* **10(2)**: 209-210.

Bhagat, B.K., Singh, C. and Chaudhary, B.M. (1999a). Studies on the propagation of guava (*Psidium guajava* L.) cv. Sardar by ground layering in polybags *The Orissa J. Horti.* **27(1)**: 19-21.

Bhagat, B.K., Singh, C. and Chaudhary, B.M. (1999b). Effect of growth substances on rooting and survival of air layers of guava (*Psidium guajava* L.) cv. Sardar. *The Orissa J. Hort.* **27(2)**: 72-75.-

Bose, T.K., S.K. Mitre, and M.K. Sadhu, (1986). Guava. In: Propagation of Tropical and Sub-tropical Horticultural Crops. Naya Prokash, Calcutta. Pp. 291-301.

Chauhan, V.B. (2012). Effect of special practices and different concentrations of indole butyric acid on rooting in air-layering of fig (*Ficus carica* L.) cv. Poona under middle Gujarat conditions. *M.Sc. Thesis*, Anand Agricultural University, Anand, Gujarat (India)

Chawla, W., Mehta, K., and Chauhan, N. (2012). Influence of plant growth regulators on rooting of

litchi (*Litchi chinensis* Sonn.) air layers. *The Asian Journal of Horticulture*, **7(1)**: 160-164.

Jaiswal, V.S. and Amin, M.N. (1992). Biotechnology of Perennial Fruit Crops, In: Guava and Jack Fruit. Eds. F.A. Hammerschlag and R.E. Litz, Biotechnology in Agriculture 8.C.A.B. Int., Wallingford, UK.

Kanwar, J.S. and Kahlon, G.S. (1986). Propagation studies in litchi. *J. Res. Punjab Aril. Univ.*, **23(1)**: 33-39.

Manga, B. Jhologiker, P., Swamy, G.S.K., Prabhuling, G. and Sandhyarani, N. (2017). Studies on effect of month and IBA concentration of air layering in Guava (*Psidium guajava* L.) cv. Sardar. *Int. J. Curr. Microbiol. App. Sci.*, **6(5)**: 2819-2825.

Reang, E., Ghosh, B. and Hidangmayum, L.D. (2016). Effect of different seasons of air layering on success percentage and other growth attributes of jackfruit (*Artocarpous heterophyllus* Lam.) under Eastern India. *The Bioscan*, **11(4)**: 2703-2706.

Singh, D.K. and Bhuj, B.D. (2000). Response of air-layering of guava to paclobutrazol and coloured polywrappers. *Agricultural Science Digest*, **20(3)**: 171-173.

Singh, P., Chandrakar, J., Singh, A. K., Jain, V. and Agrawal, S. (2007). Effect on rooting in guava cv. Lucknow-49 through PGR and organic media under Chhattisgarh condition. *Acta Horticulturae*, **(735)**: 197-200

Singh, K.K. and Mahato, S. (2016). Influence of indole-3butyric acid (IBA) and various time on rooting of guava (*Psidium guajava* L.) air layering.

*Corresponding Author

Journal of Plant Development Sciences, **8(4)**: 193-196.

Snedecor, G.W. and Cochran, G.W. (1987). *Statistical Methods*. 6th Edn. Oxford and IBH, New Delhi.

Tayade, S.A., Joshi, P.S., Raut, R.S. and Shete, M.B. (2017). Effect of time and air layer per shoot on rooting and survival of air layers in pomegranate cv. Bhagwa. *International Journal of Minor Fruits, Medicinal and Aromatic Plants*. **3(1)**: 20-24.

Tomar, A. (2016). Impact of seasonal changes on air layering and rooting hormone in *Spondias pinnata* (J. Koenig ex L.f.) Kurz. *Tropical Plant Research*, **3(1)**: 131-135.

Tomar, Y.K. (2011). Effect of various concentrations of bio-regulators and time of air-layering on the multiplication of jackfruit (*Artocarpus heterophyllus Lam.*). *International Journal of Current Research*, **3(6)**: 316-318.

Tyagi, S.K. and Patel, R.M. (2004). Effect of growth regulators on rooting of air layering of guava (*Psidium guajava L.*) cv. Sardar guava. *Orissa J. Hort.*, **32(1)**: 58-62.

Udhavrao, T.N. (2017). Effect of different growth regulators on air layering of pomegranate (*Punica granatum L.*) cv. Bhagwa. *M.Sc. Thesis*, Vasantrya Naik Marathwada Krishi Vidyapeeth, Parbhani, Maharashtra (India).