

OPTIMIZATION OF DIFFERENT PROPAGATING TECHNIQUE AND TIME PERIOD TO ENHANCE HIGHER SUCCESS RATE IN PROPAGATION OF LOW CHILL PEACH CV. SHAN-E-PUNJAB

Rajat Sharma*, P.N. Singh, D.C. Dimri, Shweta Uniyal, Vishal Nirgude and Manpreet Singh

Department of Horticulture, College of Agriculture, G.B. Pant University of Agriculture and Technology, Pantnagar 263 145, Uttarakhand
Email: rajathorti10@gmail.com

Received-07.02.2020, Revised-26.02.2020

Abstract: An experiment was conducted to study the propagation of low-chill peaches in *Tarai* region of Uttarakhand. Three different methods of propagation viz., chip budding, T-budding and tongue grafting were practiced during period of experiment. Growth parameters and economic study was made in peach cv. Shan-e-Punjab. The results of the experiment revealed that treatment tongue grafting practiced on 20th January was found superior for almost all the parameter studied except for days taken for sprouting initiation, which was least (6.00 days) with grafting on 20th February. The parameters such as graft diameter, number of branches, plant height, saleable plants, number of leaves, leaf area, number of primary and secondary roots, fresh weight of roots and shoots and root to shoot ratio were found to be maximum in case of tongue grafting followed by chip budding. However, economics of experiment as benefit cost ratio was found higher (2.08) in chip budded plant as compared to tongue grafting (1.78) and T-budding (0.81).

Keywords: Peach, Propagation, Tongue grafting, T-budding, Chip budding

REFERENCES

- Ahmad, I., Cheng, Z., Liu, T., Nan, W., Ejaz, M., Khan, M.A. and Wasila, H.** (2012). Effect of different time of budding on the bud take success of peach on peach Rootstock. *Advances in Environmental Biology*, **6**(5): 1848-1852.
- Anonymous** (2018). Horticultural Statistics at a Glance, 2016, Horticulture Statistics Division, Department of Agriculture, Cooperation & Farmers Welfare (DAC&FW), Ministry of Agriculture and Farmer Welfare, Government of India (Website: Agricoop.nic.in/imagedefault/hortstat_Galance.pdf)
- Anonymous** (2017). State profile: State Horticulture Mission, Department of Horticulture, Government of Uttarakhand (shm.uk.gov.in).
- Awasthi, M. and Negi, M.** (2016). Effect of different time and methods of budding on the bud take success of nectarine on peach (*Prunus persica* L.) seedling rootstock. *International Journal of Research in Applied Natural and Social Science*, **4**(11):25-30.
- Bohra, J.S.** (2008). Performance of different grafting methods in peach cv. Sharbati under *Tarai* condition of Uttarakhand. *Thesis*, M.Sc. Ag. (Horticulture), department of Horticulture, G.B.P.U.A&T, Pantnagar, Uttarakhand, India.
- Celik, H., Zenginbal, H. and Ozcan, M.** (2006). Effect of budding performed by hand and with manual grafting unit on kiwifruit propagation in the field. *Hort Science*, **33**(2): 57–60.
- Chakraborty, B. and Singh, P.N.** (2011). Effect of rootstock and time of grafting in low-chill Peach cultivars. *Progressive Horticulture*, **43**(2): 281-284.
- Cochran, W.G. and Snedecor, G.** (1987). Experimental designs. *John Wiley and Sons, Inc.*, New Delhi Dekker, Inc.
- Deshmukh, N.A., Patel, R.K., Krishnappa, R., Verma, B.C., Rymbai, H., Assumi, S.R., Lyngdoh, P., Jha, A.K. and Malhotra, S.K.** (2017). Influence of rootstock age and propagation methods on scion physiology and root morphology of Khasi mandarin (*Citrus reticulata*). *Indian Journal of Agricultural Sciences* **87** (2): 203–209.
- Dimri, D.C., Petwal, A. and Kamboj, P.** (2009). Determination of optimum time for chip budding in apple cv. Red Fuji. *Indian Journal of Horticulture*, **66**(2): 254-256.
- El-Motty, E.Z.A., Metwally, S.E., Abou, Y.R. and Farahat, S.A.** (2010). Studies on growth, nutritional and microbiological status of citrus seedlings infested with root-rot disease. *Nature and Science*, **8**(4): 112–121.
- Gill, J.K., Singh, H., Thakur, A. and Jawandha, S.K.** (2014). Studies on simultaneous grafting and rooting of peach on Flordaground rootstock. *Hort Flora Research Spectrum*, **3**(3): 259-262.
- Lockwood, D.V. and Coston, D.C.** (2005). Peach Tree Physiology. In: Horton, D. and Johnson, D. (eds) Southeastern Peach Growers Handbook. GES Handbook No. 1. University of Georgia College of Agricultural & Environmental Sciences, Athens, Georgia, 7.
- Misra, K.K., Mishra, N.K. and Chand, S.** (2017). Plant Propagation: Biotech Books, New Delhi.
- Nijjar, J.S. and Khajuria, H.N.** (1979). New peach cultivars for Punjab. *The Punjab Horticultural Journal*, **19**: 46-49.

*Corresponding Author

Rom, R.C. and Carlson, R.F. (1987). Rootstocks for Fruit Crops. Wiley, New York.

Skene, D.S., Shepherd, H.R. and Howard, B.H. (1983). Characteristic anatomy of union formation in budded fruit and ornamental tree. *Journal of Horticultural Sciences*, **58**:2 95–9.

Upadhyay, K. (2016). Studies on different method and times of grafting in Walnut (*Juglans regia* L.) under different growing condition. *Thesis*, M.Sc. Fruit science VCSG Uttarakhand University of Horticulture and Forestry, Bharsar.