Iranian Journal of Horticultural Science and Technology 18 (4): 329 - 342 (2017)

Effect of Different Auxin and Cytokinin Concentrations, Basal Medium and Light Quality on Shoot Induction Using Callus of Leaf Segments in Peach×Almond Hybrid, HS314

J. Dejampour*, F. Aghajani, A. Motallebi-Azar and H. Fathi[1]

To investigate the effects of auxin and cytokinin on shoot regeneration from leaf segments of HS314 rootstock, *in vitro* plantlets grown on DKW containing 0.5 mg L^{-1} BAP, 5 mg L^{-1} GA_3, 0.5 mg L^{-1} IBA, and 200 mg L^{-1} casein hydrolysate were used. Leaf segments (abaxial side) were cultured on shoot induction media containing different concentrations of TDZ (3, 6, 9, and 12 mg L^{-1}) and IBA (0.0 and 0.1 mg L^{-1}). Results showed that callus induction was achieved in all treatments, and IBA was not necessarily used. Nevertheless, only culture medium AP with 12 mg L^{-1} TDZ and 0.1 mg L^{-1} IBA caused shoot regeneration. In the next step, choosing the best culture medium and efficient hormonal levels, also the effect of the red light was investigated. Therefore, two culture media, MS and WPM (containing 0, 1 mg L^{-1} IBA and 12 mg L^{-1} TDZ) and two light conditions (red and white) were used. The results showed that shoot regeneration was occurred in both culture media with 1 mg L^{-1} IBA. The numbers of regenerated plants were affected by interaction of culture medium × light condition and 1 mg L^{-1} IBA. Finally, MS medium using red light and WPM using white light were considered as the best treatments for shoot regeneration from leaf segment (along with 1 mg L^{-1} IBA and 12 mg L^{-1} TDZ) for both of them.

Keywords: Callus induction, HS314 rootstock, Plant growth regulation, Shoot regeneration.

[DOR: 20.1001.1.16807154.1396.18.4.1.0]

1. Associate Professor, Agriculture Research Center of East-Azerbaijan, Tabriz, M.Sc. Graduated Student of Plant Biotechnology, Associate Professor, Department of Horticultural Science, Faculty of Agriculture, University of Tabriz and Reasercher, Agriculture Research Center of East-Azerbaijan, Tabriz, Iran. respectively.

* Corresponding author, Email: (dejampour@yahoo.com).