EFFECT OF GROWING MEDIA AND WATERING FREQUENCIES ON PHYSIOLOGICAL GROWTH, PRODUCTIVITY AND BIOCHEMICAL COMPOSITION OF CARROT

Md. Dulal Sarker*

Executive Summary

The experiment was conducted from December 2017 to March 2018 in poly-tunnel environment at Central Farm of Sher-e-Bangla Agricultural University, Dhaka, Bangladesh. Comparative effect of different watering frequencies viz., one day interval @ 200 ml (W_1), two days interval @ 300 ml (W_2), three days interval @ 400 ml (W_3) and Four days interval @ 500 ml (W_4) and organic substrates following as coco peat (G_1), sawdust (G_2), rice husk (G_3) and their equal mixture (G_4) studied in carrot with respect to plant growth, root quality and development. Plant height, fresh biomass of carrot roots has been enhanced by coco peat-based media under the watering frequencies of one day interval @ 200 ml (W_1) and tow days interval @ 300 ml (W_2). The utmost values of root length and diameter have also remarkably increased in up to two days interval @ 300 ml (W_2) of watering the n afterwards it decreased. In the sawdust (G_2) and rice husk (G_3) media mixture, the maximum brix content was attained under four days interval @ 500 ml (W_4) watering with the exception of Vit-c that was higher in rice husk (G_3) followed by coco peat (G_1) when 200 ml water applied every other day. The amount of protein and beta carotene in roots enhanced substantially by watering one day interval in coco peat, while carbohydrate and ash were inferior. Sugar content in roots also influenced significantly by watering and reached to maximum value under watering frequencies of one day interval @ 200 ml (W_1) and two days interval @ 300 ml (W_2). Plant growth and biochemical compositions are likewise stimulated under the culture of substrates-based media up to two days interval @ 300 ml (W_2) of watering. Results presume that water volume and frequencies for growing carrot is the most important factor when cultivating in soilless media. So, considering the water requirements coco peat, sawdust and rice husk might be possible substrates for root crops cultivation.

*Assistant Professor, Dept. of Horticulture, SAU, Dhaka-1207