Journal of Himalayan Life Sciences
Volume 1, Issue 1 (2021)

Improved bacoside biosynthesis in micropropagated Bacopa monnieri grown in liquid medium with different support systems

Munish Sharma[1*], Shilpa[1], Ashok Ahuja[2] and Sharada Mallubhotla[3]

[1]Department of Plant Sciences, Central University of Himachal Pradesh, Shahpur Parisar (H.P.) India - 176206
[2]College of Agriculture, Rajmata Vijyaraje Scindia Krishi Vishwavidyalaya Gwalior (M.P.) India
[3]School of Biotechnology, Shri Mata Vaishno Devi University Katra (JKUT), India
[*]Corresponding author: munish.plant@hpcu.ac.in

Abstract: Bacopa monnieri (Brahmi) is a well-documented memory enhancer plant of high commercial global demand. This study demonstrated the liquid medium based micropropagation of Brahmi. The agar culture systems (ACS) was compared to various static liquid culture having different support systems: liquid medium with submerged explants (LCS), with filter paper (LFP), with glass bead (LGB) and Growtek® membrane raft culture system (LGK). The fresh and dry weight of shoots was found to be highest in liquid culture systems. The growth index on the basis of dry weight was found to be 4.66 in LCS which was ~ 2 fold higher than in ACS (2.53). The Bacoside content was also evaluated in all culture systems. LFP showed marked increase in shoot biomass and Bacoside production (7.02 mg/gm DW) in comparison to ACS (5.18 mg/gm DW). The results of this study suggest the use of liquid media as a potential way to improve the shoot biomass and Bacoside production.

Key words: Brahmi, Liquid medium, Support matrix, HPLC, Bacoside.