Meetings International SciTechnol

J Plant Physiol Pathol 2018, Volume: 6
DOI: 10.4172/2329-955X-C4-024

International Conference On

PLANT SCIENCE & MOLECULAR BIOLOGY

October 22-23, 2018 | Paris, France

Comparative studies of root, shoot and callus cell proliferation from broccoli root tip, shoot tip and leaf cutting slice In Vitro culture: Antioxidant, carbodydrate, pigment and mineral properties

ABM Sharif Hossain[1, 2]
[1]University of Hail, KSA
[2]University of Malaya, Malaysia

In vitro vegetable culture is a superlative branch of horticultural biotechnology as the broadness of applied plant biology. The study was conducted to investigate the root, callus, shoot and leaf proliferation from the root, shoot tip and leaf cutting in vitro culture using different IBA and BAP concentrations with MS media. The highest number of root proliferation was found (1.8) in the concentration of IBA 2.0 + BAP 2.0 mg/l combination cultured from root tip. However, the maximum root proliferation was found in the concentration of IBA 2.0 + 1.0 BAP combination cultured from leaf cutting and shoot tip. Positively callus formation was found better in the concentration of BAP 1-3.0 and IBA 1-3.0mg/l combination than other combination of concentrations in the case of root, shoot tip and leaf cutting. Moreover, the leaf proliferation was found better in the concentration of IBA 2-3.0 + 1-3.0mg/l BAP combination cultured from root tip, leaf cutting and shoot tip than other combination of concentrations. The highest callus weight was found in the cultured from shoot and leaf cutting than root cutting in the concentration of IBA 2.0 + 1.0 mg/l BAP combination. Carbohydrate (as inverted sugar and glucose), chlorophyll and nutrient content (K+, NO3-, Ca++ and Na+), total phenol, antioxidant (DPPH), flavonoid and total antioxidant were found in the concentration of IBA 2.0 + 2.0 mg/l BAP combination from broccoli leaf cutting. The present results conclude that it is better to use the combination of the IBA and BAP in the concentration of 1.0-3.0 mg/l to regenerate root, shoot, leaf and callus cell proliferation of broccoli from root tip, shoot tip and leaf cutting.

abm.hossain@uoh.edu.sa