



6th National Congress on Medicinal Plants
9-10th May 2017
Tehran, Iran



810

EFFECT OF FUNGAL ELICITOR ON IN VITRO PRODUCTION OF SECONDARY METABOLITES PRODUCTION IN HAZEL (*CORYLUS AVELLANA* L.) CELL CULTURE

Shahpour Khangholi,^{*} Ayatollah Rezaei

Department of Horticulture, Shahed University Tehran, Iran
E-mail: khangholi@shahed.ac.ir

Hazel (*Corylus avellana* L.) is considered as a new plant material for in vitro production of taxol rather than other compounds. Taxol as a diterpenoid compound is one of the most effective drugs against cancer. Elicitors are molecules with ability to cause physiological or morphological changes in plant cell cultured in vitro. In this study, the effect of different concentration of yeast extract (0, 0.25, 0.5 and 1 % v/v) as an elicitor on hazel cotyledon cell suspension cultures was investigated by evaluation of cell growth rate, protein content, lipid peroxidation, enzymes activity (peroxidase, polyphenol oxidase, phenylalanine ammonia lyase) and secondary metabolites production including total polyphenols content, total flavonoids content, anthocyanin and amount of taxol. The experiment was performed in completely randomized design in three replication. The results showed that highest dry weight was obtained in lowest concentration of yeast (0.25%). Elicitation increased the amounts of protein, polyphenols, flavonoids, anthocyanin and taxol compared to control. However, there was no direct relationship between elicitor concentration and mentioned parameters. The yeast elicitor influenced the enzymes activity as well. In this regard, all enzymes showed enhanced activity depends on elicitor concentration.